Before the FCC 96-224
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	
	)	
Amendment of Part 95 of the	)	WT Docket No. 95-47
Commission's Rules to Allow	)	
Interactive Video and Data	)	RM-8476
Service Licensees to Provide	)	
Mobile Service to Subscribers	)	

REPORT AND ORDER

Adopted: May 16, 1996 Released: May 30, 1996

By the Commission:

I. INTRODUCTION & EXECUTIVE SUMMARY

1. On April 13, 1995, the Commission adopted a *Notice of Proposed Rule Making* (*Notice*) proposing to allow Interactive Video and Data Service (IVDS) licensees to provide mobile service to subscribers on an ancillary basis.[1] We anticipated that an option to provide ancillary mobile service would enable IVDS licensees to provide subscribers with additional, innovative applications, enhance spectrum efficiency, and encourage rapid deployment and growth of IVDS services.

2. By this *Report and Order*, we adopt a flexible approach toward using IVDS spectrum to facilitate development of the service without changing its basic nature. We amend Part 95 of our rules[2] to authorize mobile in addition to fixed operation for IVDS response tranmitter units (RTUs) operated with an effective radiated power (ERP) of 100 milliwatts or less.[3] We also eliminate, for such low-power mobile RTUs, the requirement that such units utilize automatic power control. In addition to authorizing such mobile IVDS operations, we eliminate the IVDS duty cycle requirement for operations outside of

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[1] *See Notice of Proposed Rule Making* (*Notice*), WT Docket No. 95-47, 10 FCC Rcd 4981 (1995).

[2] *See* 47 C.F.R. Part 95, Subpart F.

[3] An RTU is the transmitter used by a subscriber to interact with the IVDS system. Our current rules permit RTUs to operate inside a subscriber's residence, office, or other fixed location. RTUs, however, need not be physically attached to a television set or computer. *See* 47 C.F.R §§ 95.803-.805.

TV channel 13 Grade B contours.[4] The power restriction on mobile devices and duty cycle limitation in TV channel 13 markets will help ensure noninterference with respect to TV channel 13 while permitting IVDS licensees to provide a variety of new applications. Finally, we permit communication between cell transmitter stations (CTSs) on a primary basis.[5] Together, these amendments provide additional flexibility for IVDS licensees to meet the communications needs of the public, which the record indicates may include commercial data distribution and inventory monitoring services, without increasing the likelihood of objectionable interference to other licensees.

II. BACKGROUND

3. Because IVDS has been classified as a point-to-multipoint, multipoint-to-point, short distance, fixed communications service,[6] mobile operation of RTUs has not been permitted. Under current rules, IVDS licensees may provide information, products, or services to individual subscribers situated at fixed locations within a service area, and subscribers may provide responses. Though the specific service offerings are determined by each IVDS licensee, they could include providing real-time responses to polls, educational programming, or pay-per-view programming, and commercial data applications such as the transmission of database information to point-of-sale terminals, home banking, or the downloading of data to personal computers, VCRs, or other consumer electronic products.

4. In response to a petition for rule making (RM-8476) filed by EON Corporation (EON) on May 11, 1994,[7] the Commission adopted the *Notice* proposing to allow ancillary mobile operation in the IVDS[8] and addressing three related issues. First, we asked whether any restrictions should be placed on the types of ancillary mobile services that licensees could offer. Second, we asked for comment on limiting the Effective Radiated Power (ERP) of all RTUs, both fixed and mobile, to 100 milliwatts. Finally, we asked whether the existing

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[4] *See* 47 C.F.R. § 95.863.

[5] The CTS transmits the licensee's information to individual subscribers, and receives subscriber responses. *Id.*

[6] IVDS service rules were adopted in the *Report and Order* in GEN Docket No. 91-2, 7 FCC Rcd 1630 (1992).

[7] *See Petition for Rule Making*, RM-8476 (filed May 11, 1994); *see also* Public Notice, Report No. 2011 (May 19, 1994).

[8] *See* note 1, *supra*.

5-seconds-per-hour duty cycle limitation should be applied to mobile RTUs.[9] In response to the *Notice*, the Commission received twenty-four comments and sixteen reply comments.[10]

III. DISCUSSION

A. Mobile Operation

5. *Proposal.* In the *Notice*, the Commission proposed to amend Section 95.803(b) of its Rules, 47 C.F.R. § 95.803(b), to permit IVDS licensees to provide ancillary mobile service to their subscribers.[11] We also proposed to permit transmissions from a CTS to a fixed or mobile RTU and *vice versa* at any location within the service area.

6. *Comments.* The commenters unanimously support allowing at least limited IVDS mobile operations, and differ on the extent to which such operation should be allowed. The majority of commenters favor allowing fixed and mobile operations on an equal, co-primary basis, rather than restricting IVDS licensees to providing mobile service only to subscribers who also use IVDS on a fixed basis.[12] They argue that limiting mobile service to fixed service subscribers unnecessarily restricts IVDS service offerings and access to investment capital.[13] Consistent with the majority view, Grand Broadcasting Corporation (Grand) suggests that mobile-only operations be allowed.[14]

7. Others are concerned that allowing unrestricted mobile service may change the basic nature of IVDS. Radio Telecom and Technology, Inc. (RTT), for example, states that IVDS was created as a two-way, interactive video-related service and should be given the

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[9] *See* 47 C.F.R. § 95.863 (setting forth the 5-second limit). This duty cycle limitation establishes the time allowed for transmission (*i.e.*, 5 seconds) by an RTU during a defined period (*i.e.*, 1 hour). Section 95.863 also provides an alternative limitation which prohibits the maximum duty cycle of each RTU from not exceeding one percent within any 100 millisecond interval.

[10] A list of the commenting parties is provided in Appendix A.

[11] *Notice*, 10 FCC Rcd at 4982.

[12] *See, e.g.*, Committee for Effective IVDS Regulation (CEIR) Comments at 3-4; IVDS Licensees Comments at 4 and 9; Henry Mayfield (Mayfield) Comments at 2; National Action Group for IVDS (NAG) Comments at 6; Tel/Logic, Inc. (Tel/Logic) Comments at 4; Triad TV Data (Triad) Comments at 5-6, and Comments of Richard L. Vega Group (RLV) at 1-2; *see also* Erwin Aguayo, Jr. (Aguayo) Reply Comments at 5.

[13] *See, e.g.*, IVDS Licensees Comments at 4 and 9; Triad Comments at 5-6.

[14] Grand Comments at 3-5.

opportunity to develop in that mode before any significant changes are made.[15] RTT urges the Commission to adhere to the tentative conclusions in the *Notice* -- that mobile service should be ancillary, using only excess capacity, and that these services should be provided only to fixed service subscribers.[16] Similarly, the National Association of Broadcasters (NAB) argues that allowing mobile-to-mobile service as a primary use might threaten the ability of consumers to use the IVDS for interactive broadcasting.[17] Erwin Aguayo, Jr. (Aguayo) believes that, in keeping with our proposal that mobile applications be ancillary, the Commission could permit mobile applications for subscribers who are not "fixed" subscribers without rendering IVDS a mobile service, provided the system remains primarily fixed.[18] Aguayo suggests determining how the system is primarily used by measuring total CTS output.[19]

8. EON requests that we clarify what is meant by "ancillary operation." According to EON's interpretation, an IVDS licensee's offering of mobile service would be considered "ancillary" if the licensee had offered subscribers a device that could function in both the fixed and mobile services.[20]

9. *Decision.* When we adopted the *Notice*, we believed that the primary use of the IVDS system should be for fixed operations. Now, however, in light of the development of the industry and the views of a majority of the commenters, we believe we should not limit IVDS licensees to providing a fixed service with only an ancillary mobile component. Rather, the public will be better served by giving the licensee the option of operating a fully mobile system and thus enabling the licensee to respond more accurately to the public's preferred choices of interactive services. Thus, we are adopting rules to allow IVDS licensees to provide mobile services in their service area. We believe that permitting unrestricted rather than ancillary mobile IVDS service, a measure supported by a majority of commenters, will enable IVDS providers to offer a broader array of services. This flexibility will, in turn, encourage the continued development of IVDS because licensees will be able to respond to public demand. We note that EON, when originally petitioning the Commission to consider mobility, suggested that the mobility option would create numerous additional uses for IVDS,

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[15] RTT Comments at 3.

[16] *Id.*

[17] NAB Reply Comments at 5-6.

[18] Aguayo Reply Comments at 4.

[19] *Id.*

[20] EON Comments at 3.

such as tracking package locations and confirming a child's safety.[21] In its comments to this *Notice,* EON reiterates its focus on mobile applications in the television broadcast context (*e.g.*, use of small TV receivers in automobiles),[22] while Grand concentrates on mobile applications in the radio broadcast context (*e.g.*, interaction with audio programming and advertising, in automobiles).[23]

10. Commenters favoring mobility have stated that IVDS spectrum will be useful for TV-based consumer messaging, as well as for messaging in the business and commercial data context, with applications for meter reading, stock transactions or quotations on demand, and Automatic Teller Machine (ATM) and credit card verifications.[24] While commenters do not detail specific applications for full mobility as distinguished from ancillary, to the extent that there is public demand for mobile IVDS, our action here will permit licensees to respond to this demand. This flexibility should also encourage a broader range of service offerings.

11. We disagree with those commenters who argue that to allow IVDS to become primarily a mobile service before fixed service applications have had time to develop would not only change the basic nature of the service, but undermine the purpose for which the allocation was made. As a practical matter, technical limits will prevent IVDS from duplicating many of the existing services for which other spectrum has already been allocated. For example, the duty cycle constraint, which limits RTU transmissions to 5 seconds per hour, will prevent IVDS from becoming a wireless telephone service.[25] Although, as discussed *infra*, we are relaxing the duty cycle in non-TV channel 13 markets,[26] application of the duty cycle restriction in the numerous TV channel 13 markets will ensure that IVDS will continue to develop in innovative ways. Another practical safeguard that will ensure the continuing development of IVDS as a unique service is the 100-milliwatt power limitation we are adopting for mobile RTUs.[27] The power restriction will require defining unique IVDS applications while inhibiting those applications better provided by other wireless services. Apart from these technical limitations, we will expect licensees to continue to develop IVDS as a service distinguishable from other fixed and mobile services.

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[21] *See Notice*, 10 FCC Rcd at 4981.

[22] *See* EON Comments at 4.

[23] *See* Grand Comments at 4-5.

[24] *See* IVDS Licensees Comments at 3; *see also* ITV, Inc. and IVDS Affiliates, LLC (ITV/IALC) Comments at 2.

[25] *See* 47 C.F.R. § 95.863.

[26] *See* paragraph 22, *infra.*

[27] *See* paragraph 18, *infra.*

12. Our broad view of IVDS as an innovative, two-way interactive service for exchanges with other services providing video, voice, or data comports with our initial determination not to define the service rigidly. Accordingly, NAB's contention that IVDS should be developed primarily as an interactive service for use in conjunction with the broadcast industry is misplaced. Certainly, this *Report and Order* does not prevent that application. The Commission, IVDS licensees, and IVDS equipment manufacturers, however, envision a variety of uses for IVDS, including broadcast-related services. We believe that consumers, through market forces, should determine the appropriate mix of specific services.

B. Power Limitation

13. *Proposal.* Based on EON's petition, we proposed to limit the ERP of mobile RTUs to 100 milliwatts.[28] We also asked for comment on reducing the maximum power for fixed RTUs from 20 watts to 100 milliwatts.[29]

14. *Comments.* Several commenters favor the 100 milliwatt mobile power limitation.[30] In general, they argue that such power limitations have been demonstrated in field trials to protect against potential interference to TV channels 10 and 13, and that to allow RTUs to operate with power above 100 milliwatts would most certainly create a potential for TV channel 13 interference. Others voice conditional support for the 100 milliwatt limit. RTT, for example, agrees that a power limit of 100 milliwatts for mobile RTUs should be imposed if it is an average power limit.[31] EON and IVDS Licensees also support measuring the power limit as average rather than peak power.[32] ITV, Inc. and IVDS Affiliates, LLC (ITV/IALC) suggest that valuable IVDS spectrum will be wasted if the Commission does not raise the maximum duty cycle in tandem with lowering the maximum ERP.[33]

15. A number of commenters oppose limiting mobile RTUs to 100 milliwatts. For example, Aguayo argues that a maximum ERP for mobile RTUs less than the 20 watts is

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[28] *See Notice*, 10 FCC Rcd at 4982. *See generally* 47 C.F.R. § 95.855(a).

[29] *See id.*

[30] *See, e.g.*, SEA Inc. (SEA) Comments at 5; NAB Reply Comments at 3; Association for Maximum Service Television, Inc. (MSTV) Reply Comments at 2-3.

[31] RTT Comments at 2, 5.

[32] EON Reply Comments at 3; IVDS Licensees Comments at 6.

[33] ITV/IALC Comments at 4.

unnecessary because of existing interference protections.[34] Others contend that any reduction in the maximum permissible ERP for mobile units will limit the type of equipment and operational plans for IVDS systems, favor a particular vendor (*i.e.*, EON) and thus be anti-competitive.[35] IVDS Licensees and Interactive Service Designs (ISD) argue that a 100-milliwatt limitation will serve as a significant barrier to entry by increasing the cost of constructing IVDS systems, and consequently would be contrary to the public interest.[36] Interactive Management Services, LLC (IMS) states that using "dynamic power control" -- a cellular radio concept akin to automatic power control -- should be sufficient to reduce interference and make unnecessary any power restrictions beyond those currently in 47 C.F.R. § 95.855.[37]

16. Finally, several commenters favor allowing mobile power greater than 100 milliwatts, but only where an IVDS service area does not overlap a TV channel 13 protected Grade B coverage area. Concepts to Operations, Inc. (Concepts), for example, argues that in these particular areas such restriction would be unnecessary because no objectionable interference to TV channel 13 would occur.[38] NAG agrees that the proposed 100-milliwatt power limitation for mobile RTUs appears overly conservative in areas beyond the Grade B contour of TV channel 13 stations.[39] ISD also concurs, contending that the need to limit mobile RTU power to less than 20 watts would only be necessary in areas where TV channel 13 operates.[40] Similarly, Tel/Logic contends that no separate power limits on mobile RTUs should be required in markets located entirely outside of the Grade B contours of channel 13 television stations.[41]

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[34] *See* Aguayo Reply Comments at 2; *see also* Active Communications Partners (Active) Comments at 1.

[35] *See* Dispatch Interactive Television (Dispatch) Comments at 3; JoAnn Hartley (Hartley) Comments at 1; Mayfield Comments at 2; Tel/Logic Comments at 4; Concepts to Operations, Inc. (Concepts) Comments at 5; Interactive Service Designs (ISD) Comments at 1.

[36] *See* IVDS Licensees Comments at 5; ISD Comments at 1.

[37] *See* IMS Comments at 1. However, dynamic power control, like automatic power control, apparently would not interact directly with TV Channel 13 or gauge the effect of IVDS ERP on TV Channel 13 reception. *See id.*

[38] *See* Concepts Comments at 6.

[39] *See* NAG Comments at 9.

[40] *See* ISD Comments at 1.

[41] Tel/Logic Comments at 5.

17. Commenters nearly unanimously oppose limiting fixed RTUs to 100 milliwatts.[42] They argue that IVDS licenses were auctioned with the expectation that RTUs could operate at 20 watts, and it would be unfair and possibly unlawful to change the rule after the auction.[43] Further, they contend that manufacturers and licensees relied on the regulations in place in choosing equipment design, business plans, and market strategy. Only one commenter, ITV/IALC, conditionally supports reducing the power limitation for fixed services. It states that it would favor reducing the maximum ERP for all RTUs to 100 milliwatts only if no duty cycle or automatic power adjustment requirements were imposed.[44]

18. *Decision.* A principal concern regarding IVDS technical requirements is to ensure that IVDS systems do not cause interference to other services.[45] We recognize that allowing unrestricted mobile operations promotes flexibility within the service, but it also increases the interference potential with respect to the operations of licensees in other services. Consequently, we conclude that a lower power limit is appropriate under such circumstances. Therefore, we are adopting the 100-milliwatt ERP power limit for all mobile RTUs. The limit therefore applies even to mobile RTUs located both within the IVDS licensee's service area and outside a TV channel 13 predicted Grade B contour. Mobility makes it more likely that RTUs could be operated in areas where interference may result. In addition, as suggested by commenters, this 100-milliwatt limit will be specified in terms of mean power.[46] Mean power rather than peak power measurement should provide licensees with greater economic flexibility and efficiency in equipment design, while only insignificantly increasing the risk of objectionable interference to TV channel 13 operations. Based on the record, we conclude that no change to the power limit for fixed operations is necessary. There has been no evidence offered to show that our initial choice of a 20-watt limit for fixed service was ill-advised, and nothing we do today warrants changing that determination.

C. Duty Cycle

19. *Proposal.* In the *Notice* we proposed to apply the existing 5 seconds-per-hour duty cycle limitation to mobile RTUs to protect reception of TV channel 13 signals.[47]

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[42] *See, e.g.*, Aguayo Comments at 2-3; CEIR Comments at 6; Concepts Comments at 5; ISD Comments at 2.

[43] *See* IVDS Licensees Comments at 5; Mayfield Comments at 2; RTT Comments at 7; Tel/Logic Comments at 4.

[44] *See* ITV/IALC Comments at 4.

[45] *See Report and Order*, 7 FCC Rcd at 1635.

[46] Mean power is the average power supplied by the transmitter. *See* 47 C.F.R. § 2.1(c).

[47] *See Notice*, 10 FCC Rcd at 4982.

20. *Comments.* NAB and the Association for Maximum Service Television, Inc. (MSTV) support applying the RTU duty cycle limitation to both fixed and mobile operations. NAB and MSTV argue that the introduction of advanced television will require significant changes in the allotment of television channels. They reason that it would, therefore, be unwise to authorize more liberal duty cycle characteristics, only to have these services later cut back due to advanced television implementation.[48] NAB urges against any FCC regulatory program that would restrict duty cycle limits only to geographic areas that are currently served by a TV channel 13 operation.[49] MSTV also contends that applying the duty cycle to mobile operation would assist in maintaining IVDS as primarily a fixed service.[50]

21. While some commenters generally oppose applying the 5-second duty cycle limitation to mobile RTUs, a majority go further in suggesting that the duty cycle be relaxed or eliminated completely, for both mobile and fixed services.[51] For example, SEA, Inc. (SEA) urges the Commission to relax the duty cycle in TV channel 13 markets and to eliminate it in non-TV channel 13 markets.[52] IMS and NAG suggest eliminating the duty cycle upon a showing of no interference.[53] ISD states that low-cost RTUs are available that operate at lower data rates, making the duty cycle unnecessary.[54] IVDS Licensees argues that the duty cycle restricts the uses for IVDS, and that TV channel 13 is already protected by licensees' obligation under the rules to remedy harmful interference.[55] EON, in its reply comments, suggests that additional data be gathered before modifying the duty cycle.[56]

22. *Decision.* One of our primary objectives is to promote licensee flexibility in providing a broad range of services to the public while still preserving the essential nature of IVDS and protecting TV channel 13 reception. The duty cycle rule, however, was not one of the principal ways we intended to minimize the potential for interference. Rather, it serves as

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[48] *See* NAB Reply Comments at 4-5; *see also* MSTV Reply Comments at 4.

[49] NAB Reply Comments at 5.

[50] MSTV Reply Comments at 5.

[51] CEIR Comments at 4; Concepts Comments at 6; Mayfield Comments at 2; Tel/Logic Comments at 5; Triad Comments at 4; *see also* Aguayo Reply Comments at 3.

[52] SEA Reply Comments at 6.

[53] IMS Comments at 2; NAG Comments at 8.

[54] ISD comments at 3.

[55] IVDS Licensees Comments at 6-7.

[56] EON Reply Comments at 3.

an additional safeguard.[57] Given the development of IVDS and our current reexamination of the parameters of the duty cycle rule, we believe the rule can be relaxed under certain conditions. Accordingly, we will eliminate the duty cycle requirement for both fixed and mobile operations in IVDS service areas where no TV channel 13 predicted Grade B contour overlap exists. In such areas, TV channel 13 operations have no expectation to protection from interference. We will also eliminate the duty cycle in areas where there is overlap, for fixed RTUs located within the IVDS licensee's service area, but outside the TV channel 13 predicted Grade B contour.[58] In such areas, the interference potential is minimal, rendering the duty cycle restriction unnecessary. For mobile RTUs located within the IVDS licensee's service area, but outside the TV channel 13 predicted Grade B contour, we will retain the duty cycle requirement. As we noted in discussing the 100-milliwatt ERP power limit for mobile RTUs, mobility makes it more likely that RTUs could be operated in areas where interference may result.

23. We are unpersuaded by NAB's and MSTV's comments on the greater need for a duty cycle in anticipation of advanced television (ATV) implementation. While the Commission does not have specific information about the susceptibility to IVDS interference of the digital ATV system that is being considered in MM Docket No. 87-268, we expect that whatever system is adopted will be generally more immune to interference from signals in adjacent spectrum than is the case with current analog TV systems. Moreover, our rules provide safeguards against any unforeseen problems, inasmuch as IVDS licensees must resolve any interference problems to reception of TV channel 13 inside the predicted Grade B contour within 30 days of notification or discontinue operation.[59]

D. Limitations on Types of Service

24. *Proposal.* We asked commenters to address specifically whether any restrictions should be placed on the types of mobile services that IVDS licensees should be permitted to offer. We proposed to permit indirect RTU-to-RTU interaction through a cell transmitter station, but declined to allow direct RTU-to-RTU transmissions.[60]

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[57] *See Report and Order*, 7 FCC Rcd at 1635.

[58] *Cf. Order, In re Kingdon R. Hughes*, DA 95-1732, 10 FCC Rcd 8642 (Wireless Telecom. Bureau 1995) (granting IVDS licensee's request for waiver of the duty cycle requirement where TV channel 13 interference was not at issue).

[59] *See* 47 CFR § 95.861(e).

[60] *See Notice*, 10 FCC Rcd at 4982.

25. *Comments*.. A majority of commenters favor allowing only indirect RTU-to-RTU operation.[61] Active, IVDS Licensees, and Richard L. Vega Group (RLV), however, favor allowing direct mobile RTU-to-mobile RTU operation.[62] RLV, for example, argues that as long as there is no threat of potential harmful interference to the other IVDS system in the market or adjacent IVDS systems, there is no compelling reason to restrict the use of mobile RTUs, either via CTS or directly.[63]

26. Several commenters seek changes in IVDS rules that were not suggested in the *Notice*. NAG, for example, requests an amendment to Section 95.805(b) to allow CTS-to-CTS transmissions on a primary basis.[64] NAG notes that the rules already permit such communications on an ancillary basis, and that not permitting these communications on a primary basis is unduly restrictive and prohibits the provision of numerous potentially viable applications that could satisfy existing consumer demands.[65] Aguayo agrees with NAG on this point.[66] NAG also requests that we change the combination antenna heights/CTS power restrictions to provide greater operating powers to certain types of CTS transmitters located at lower heights.[67] According to NAG, with Concepts concurring,[68] this change will minimize deployment costs without undermining protections for broadcast television service.[69] ITV/IALC requests that the Commission eliminate the automatic power adjustment requirement for RTUs of 100 milliwatts ERP or less.[70] ITV/IALC notes that no opposition was expressed.[71]

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[61] *See* Concepts Reply Comments at 2; MSTV Reply Comments at 6; RTT Reply Comments at 3; *see also* ISD Comments at 3; ITV/IALC Comments at 2-3; EON Comments at 3-4.

[62] *See* Active Comments at 2; IVDS Licensees Comments at 6; RLV Comments at 3.

[63] RLV Comments at 3.

[64] NAG Comments at 12-13.

[65] *Id.*

[66] *See* Reply Comments of Aguayo at 6.

[67] NAG Comments at 9.

[68] *See* Concepts Reply Comments at 2.

[69] NAG Comments at 10.

[70] *See* ITV/IALC Comments at 4.

[71] ITV/IALC Reply Comments at 1.

27. Finally, several commenters request clarification regarding the IVDS service classification and the rules governing interconnection with the Public Switched Network (PSN). For example, EON seeks clarification on language in proposed Section 95.805(c), 47 C.F.R. § 95.805(c), which proposed to prohibit interconnection with the PSN or any Commercial Mobile Radio Service (CMRS).[72] RTT states that the regulations should preclude RTUs from direct access to the PSN so that IVDS will not become a CMRS. However, it also argues that the Commission should not regulate interconnection of CTSs to the PSN, or regulate IVDS as CMRS if CTS interconnection is permitted and utilized.[73] Grand asks that IVDS be declared a Private Mobile Radio Service (PMRS) to avoid confusion,[74] while Aguayo disagrees that this is necessary.[75]

28. *Decision.* We are adopting our proposal to allow indirect RTU-to-RTU operations but will continue to prohibit direct RTU-to-RTU operations. Protecting TV channel 13 from interference is a primary concern in regulating IVDS, and direct RTU-to-RTU operation would increase interference potential to TV channel 13. We believe this to be the case because, *inter alia*, the licensee cannot monitor and directly control interfering RTU-to-RTU transmissions, and permitting such direct transmissions increases the possibility of interference to the interplay of CTS and RTU transmissions. Further, we are eliminating the requirement that RTUs operating at 100 milliwatts or less incorporate automatic power control. We conclude that there is no need for automatic power control at such low power levels, and eliminating the requirement will reduce equipment costs. We are also permitting direct CTS-to-CTS communications (fixed point-to-point communications) on a primary basis, because we find that such fixed operation can be designed to eleiminate potential interference to TV channel 13 operations and not present the interference potential presented by direct RTU-to-RTU operations. Finally, we decline to take action on the request to change the antenna height/power limitations. The record evidence in this proceeding is not sufficient to consider this proposal.

29. Several commenters addressed the related issues of service classification and interconnection with the PSN. In the *Report and Order* establishing IVDS, we classified IVDS as a private service primarily because IVDS licensees would provide services of a personal nature.[76] In addition, we stated that the purpose of IVDS is to provide information.

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[72] EON suggests that Section 95.805(c) be amended so that no RTU may be interconnected directly with the PSN or any CMRS. EON Comments at 3.

[73] RTT Reply Comments at 2-3.

[74] Grand Comments at 2-5.

[75] Aguayo Reply Comments at 4.

[76] *See Report and Order*, 7 FCC Rcd at 1637

products, or services to individual subscribers and to accept interactive responses.[77] We do not believe, nor have the commenters demonstrated, that interconnection with the PSN is critical to this type of operation. In fact, we are concerned that allowing interconnection with the PSN at this time could impede IVDS from reaching its full unique potential. We recognize that interconnection with the PSN, coupled with mobile offerings, might convert IVDS generally from a private service to a commercial service, requiring an application of different and more restrictive regulation from the present regulation.[78] For this reason, several commenters supported continuing to regulate IVDS as a private service. In view of the above-described drawbacks of permitting interconnection with the PSN (*i.e.*, the lack of demonstrated need, the impairment of the development of the service as envisioned, and the resulting potential reclassification of the service as commercial), we decline to permit such interconnection. This determination is consistent with retaining IVDS as a private, although newly mobile, radio service.

IV. FINAL REGULATORY FLEXIBILITY ANALYSIS

30. Pursuant to 5 U.S.C. § 603, an initial Regulatory Flexibility Analysis was incorporated in the *Notice of Proposed Rule Making* in WT Docket No. 95-47. Written comments on the proposals in the *Notice*, including the Regulatory Flexibility Analysis, were requested.

31. *Need for and Objective of Rules.* Our objective is to allow a co-primary mobile component to a consumer-oriented interactive video and data service. The rules adopted herein will provide for greater flexibility in implementing this new service, enhance economic and spectrum efficiency, and enhance telecommunication service offerings for consumers, producers and new entrants.

32. *Issues Raised by the Public in Response to the Initial Analysis.* All commenters supported mobile service for IVDS, although a majority of those suggested modifications to specific proposals set forth in the *Notice*. No party suggested modifications specifically to the initial regulatory flexibility analysis.

33. *Any Significant Alternative Minimizing Impact on Small Entities and Consistent with Stated Objectives.* These adopted rule changes will allow greater business opportunities and greater flexibility in the business decisions of IVDS licensees, many of which are small businesses.

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[77] *Id.*

[78] *See generally* 47 U.S.C. § 332(d); *Second Report and Order*, GN Docket No. 93-252, 9 FCC Rcd 1411 (1994).

V. ORDERING CLAUSE

34. Accordingly, IT IS ORDERED that Part 95 of the Commission's Rules IS AMENDED as specified below, effective 30 days after publication in the Federal Register. This action is taken pursuant to Sections 4(i), 303(b), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(b), and 303(r).

35. IT IS FURTHER ORDERED that this proceeding IS TERMINATED.

36. For further information, contact Robert H. McNamara of the Wireless Telecommunications Bureau, Private Wireless Division, (202) 418-0680.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A

COMMENTS AND REPLY COMMENTS FILED IN WT DOCKET NO. 95-47

Comments

1) Active Communications Partners (Active)

2) Erwin Aguayo, Jr. (Aguayo)

3) Brown and Schwaninger (Brown)

4) Commercial Realty St. Pete, Inc. (CRSPI)

5) Committee for Effective IVDS Regulation (CEIR)

6) Concepts to Operations, Inc. (Concepts)

7) Dispatch Interactive Television (Dispatch)

8) EON Corporation (EON)

9) Grand Broadcasting Corporation (GBC)

10) JoAnn Hartley (Hartley)

11) Interactive Management Services, LLC (IMS)

12) Interactive Service Designs (ISD)

13) ITV, Inc. (ITV) & IVDS Affiliates, LLC (ITV/IALC)

14) IVDS Licensees

15) J D Engineering (JD)

16) Henry Mayfield (Mayfield)

17) National Action Group for IVDS (NAG)

18) Radio Telecom & Technology Inc. (RTT)

19) SEA Inc. (SEA)

20) Tel/Logic Inc. (Tel/Logic)

21) Triad TV Data (Triad)

22) Two Way TV/Wireless Plus (Two Way)

23) Richard L. Vega Group (RLV)

24) Windgate Fund LLC (Windgate)

Reply Comments

1) Erwin Aguayo, Jr. (Aguayo)

2) Brown and Schwaninger (Brown)

3) Commercial Realty St. Pete Inc. (CRSPI)

4) Concepts to Operations, Inc. (Concepts)

5) Dispatch Interactive Television (Dispatch)

6) EON Corporation (EON)

7) ITV, Inc. & IVDS Affiliates, LLC (ITV/IALC)

8) IVDS Licensees

9) Association for Maximum Service Television, Inc. (MSTV)

10) Henry Mayfield (Mayfield)

11) National Action Group for IVDS (NAG)

12) National Association of Broadcasters (NAB)

13) Radio Telecom and Technology Inc. (RTT)

14) SEA Inc. (SEA)

15) Two Way TV/Wireless Plus (Two Way)

16) Wireless Ventures, Inc. (Wireless)

APPENDIX B

Part 95 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

Part 95 -- Personal Radio Services

1. The authority citation for Part 95 continues to read as follows:

Authority citation: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. §§ 154, 303.

2. Section 95.803 is amended by revising paragraphs (a) and (b) to read as follows:

§ 95.803 IVDS description.

(a) An IVDS system is a point-to-multipoint, multipoint-to-point, short distance communications service for its licensees to provide information, products, or services to, and allow interactive responses from, subscribers in the licensee's service area.

(b) The components of each IVDS system are its administrative apparatus, its response transmitter units (RTUs), and one or more cell transmitter stations (CTSs). RTUs may be used in any location within the service area. Each IVDS system is authorized for a specific service area and frequency segment. There can be a maximum of two IVDS systems per service area. There are two frequency segments available for each service area.

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3. Section 95.805 is amended by revising paragraphs (b), (c) and (e) to read as follows:

§ 95.805 Permissible communications.

* * * * *

(b) Direct CTS-to-CTS communications within the same IVDS system are permitted.

(c) Direct RTU-to-RTU communications are prohibited. No mobile RTU in an IVDS system may be interconnected with the public switched network or any commercial mobile radio service.

* * * * *

(e) An IVDS system may provide fixed and mobile service to subscribers within its service area.

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4. Section 95.855 is amended by revising paragraph (a) to read as follows:

§ 95.855 Transmitter effective radiated power limitation.

(a) The effective radiated power (ERP) of each CTS and RTU shall be limited to the minimum necessary for successful communications. RTUs with powers in excess of 100 milliwatts must incorporate automatic power control to ensure the minimum ERP is used. No CTS may transmit with an ERP exceeding 20 watts. No fixed RTU may transmit with an ERP exceeding 20 watts. No mobile RTU may transmit with an ERP exceeding 100 milliwatts mean power.

* * * * *

5. Section 95. 863 is amended to read as follows:

§ 95.863 Duty Cycle.

(a) Except as provided in (b) of this section, the maximum duty cycle of each RTU, either fixed or mobile, shall not exceed 5 seconds-per-hour, or, alternatively, not exceed one percent within any 100 millisecond interval.

(b) The duty cycle limitation specified above for RTUs does not apply in the following situations:

(1) to fixed and mobile RTUs when there is no TV channel 13 predicted Grade B contour overlap in the licensed service area; or

(2) to fixed RTUs in areas where there is Grade B contour overlap and the RTU is located outside the TV channel 13 predicted Grade B contour but within the licensed service area.