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November 28, 2006

BY ELECTRONIC FILING

Ms. Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: WC Docket No. 02-60

Dear Ms. Dortch:

Please find attached the *Reply of National LambdaRail, Inc.* to the Comments on its *Petition for Reconsideration or, in the Alternative, Clarification* of the Commission's Order (FCC 06-144), which was released on September 29, 2006 in the above-captioned proceeding.

Should any questions arise concerning this matter, please communicate directly with the undersigned.

Respectfully submitted,

NATIONAL LAMBDARAIL, INC.

Randall B. Lowe

cc: Best Copy and Printing, Inc.

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

In the Matter of	)	
	)	
	)	WC Docket No. 02-60
	)	
Rural Health Care Support Mechanism	)	

Reply of National LambdaRail, Inc.

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Dated: November 28, 2006

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Rural Health Care Support Mechanism	)	

Reply of National LambdaRail, Inc.

National LambdaRail, Inc. ("NLR"), by and through its attorney, hereby submits its Reply to the Comments on its Petition for Reconsideration or, in the Alternative, Clarification ("Petition") of the Commission's Order (FCC 06-144) that was released in the above-captioned matter on September 29, 2006 ("Order").[1]

Introduction and Summary

1. Internet2's comments attempt to deny the Commission what it needs to conduct its pilot program by restricting connections to Internet2's network, which has the same footprint as NLR's network (see Attachment A), but, unlike NLR's network, Internet2's network is leased capacity that is managed by and subject to the acceptable use policies of underlying, commercial carriers and is in transition from one such carrier to another carrier which will not be complete until September, 2007. Moreover, NLR's network currently provides connectivity in all fifty states and NLR's network indirectly

[1]NLR filed the Petition pursuant to Section 1.106 of the Commission's Rules (47 CFR §1.106 (2005)). The Commission, however, requested comments and reply comments pursuant to Sections 1.415 and 1.419 (47 CFR §§1.415 and 1.419). *Public Notice* (DA 06-2279) (Nov. 6, 2006.)

interconnects with Internet2's network even though Internet2 has twice turned down NLR's offer to directly connect with Internet2.

2. As stated in the Petition, NLR is a not-for-profit organization that was incorporated "to advance and serve the research, clinical and educational goals of its members and other institutions through its dedicated, nationwide, advanced network infrastructure that is connected to regional (broadband) optical networks ('RONs')." Petition at 1-2. (Footnote omitted.) NLR's network infrastructure is exactly what the Commission had in mind when it established the pilot program: Health care providers connected to regional networks that are connected to a national backbone.

3. NLR is concerned that by the Order, the Commission has restricted the interconnections of regional networks under the pilot program to one network, Internet2. Consequently, it filed the Petition to determine as a matter of reconsideration or clarification whether the Commission had only Internet2 in mind, or whether other networks, such as that of NLR, would also qualify. In other words, it is not clear to NLR whether the Commission meant to exclude nationwide backbones, such as NLR.[2]

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[2]Although not evident by the Order, members of the Commission have stated publicly that regardless of what the Order seems to permit, the Commission did not mean nor intend to restrict funding to Internet2 connections. To add to the confusion, in a *News* release dated November 21, 2006 (as well as in an answer to frequently asked questions which are referred to in the *News* release) the Commission states that although interconnections to Internet2 may be funded, "[c]onnection to Internet 2 [sic] is not required, but may be requested . . . ." Also, as pointed out by AT&T (AT&T Comments, p. 2), the Commission stated in the Order that "eligible health care providers are free to choose any . . . provider of the broadband connectivity." In doing so, AT&T notes that the Commission stated that the program satisfies the "competitively neutral" requirement of Section 254(h)(2)(A) of the Act ((47 U.S.C. §254(h)(2)(A)) which provides for no exceptions to the competitive neutrality requirement, stating that "[t]he Commission *shall establish* competitively neutral rules." (Emphasis added.) (*Id.*) Indeed, it seems improbable the Commission could find that the program is competitively neutral when it restricts funded backbone connections to one provider. By providing a substantial

4. If the Commission did mean to exclude networks other than Internet2, NLR showed by the Petition that its network has all of the same characteristics as Internet2's network, and then some, a fact not denied by Internet2. *See* Petition, para. 13. But, in addition, NLR also showed that unlike Internet2's proposed "new" network, which is unfinished, leased capacity in the form of managed services by an underlying, commercial carrier, NLR also showed that its network is a "neutral" network owned, managed, operated and controlled by NLR and that it is already fully online. Clearly, therefore, the network of NLR should qualify for interconnection by regional networks used for telemedicine.

5. A closed approach restricted to Internet2 also hurts the advancement of health care. *See e.g.*, Petition, para. 15. In particular, restricting qualifying connections to Internet2 not only affects NLR's mission to advance and serve the research, clinical and educational goals of health care, in partnership with its member RONs, but it also adversely affects rural health care itself because state and regional networks will not have any incentive to connect to NLR even though NLR may better and more specifically meet their technical requirements and fit within their capital budgets. *Id.* at para. 14. Moreover, existing or prospective telehealth projects that do not plan to interconnect with

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advantage to Internet2, while denying NLR the same benefit, the Commission would be departing from the rule of competitive neutrality, which requires "that no entity receive[] an unfair competitive advantage that may skew the marketplace or inhibit competition by limiting the available quantity of services or restricting the entry of potential service providers." *See Federal-State Joint Board on Universal Service*, 12 FCC Rcd. 8776, 8802 (1997).

Internet2 may be abandoned at great waste and expense to RONs and rural health care providers alike.[3] *Id.* at para. 15.

Reply

6. For these reasons, the American Telemedicine Association ("ATA") and the National Telecommunications Cooperative Association ("NTCA") support the Petition.[4] ATA's position is very straightforward: Telemedicine connections are based on the availability of access, not on competing technologies. Thus, ATA believes that the restriction of funding to one network is "counterintuitive, and even counterproductive, to the current use of telecommunications services by more than 200 existing telemedicine/telehealth networks across the country." ATA Comments, para. 3. In a similar vein, NTCA encourages the Commission to uphold its policies of the last 30 years of customer choice by allowing rural health care providers the opportunity to choose with whom they can connect.

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[3] RONs own NLR. That is, they invested substantial sums of money to create NLR and the NLR network. As such, it is their responsibility to meet the needs of their constituency, which includes rural health care providers. If the Commission does not allow NLR to participate as a qualifying backbone for the program, they will be required to either abandon their investment or their constituency. It is a Hobson's choice that is completely unnecessary because it can be avoided by the Commission clarifying the Order to permit the funding of connections to NLR.

[4]Unlike Internet2, President Crow and Mr. Sawyer, who, as discussed below, filed oppositions to the Petition, it is noteworthy that ATA and NTCA are neutral parties in this matter. Indeed, ATA is "the leading resource and advocate promoting access to medical care for consumers and health professionals via telecommunications technology." *See* http://www.atmeda.org/about/aboutH.htm

7. Internet2, on the other hand, opposes the Petition by essentially arguing two claims.[5] Its first claim is that if the Commission wants to test network interoperability and integration of local and regional networks with a national backbone, all such networks should connect to the same backbone regardless of whether the Commission ends up opting for connections to multiple backbones.[6]

8. The claim is based on the incorrect premise that the Commission is seeking one nationwide network instead of interconnected nationwide networks that are connected to robust, regionally-based networks that, in turn, are connected to health care providers in those regions. The key to the program is the Commission's desire to "encourage development of dedicated broadband networks among health care providers" by providing "access to broadband facilities." Order, para. 8. Restricting them to one network will neither encourage such development nor provide such access.

9. The data sought after by the Commission which led to the pilot program would be much more complete if it was not limited to one network. Otherwise, the

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[5]On one level, NLR is surprised by Internet2's opposition. After all, everyone should be in this for the good of rural health care. On another level, NLR is not surprised given the monopoly position presented to Internet2 by the Order if only connections to Internet2 will be funded. The Commission should not be fooled by what is afoot: It would be impractical, disruptive, time consuming and expensive for any regional network connected to Internet2 to disconnect and connect to NLR or, for that matter, any other qualifying network, in the event the Commission restricts backbone connections under the program to Internet2 and then later opens it up on a permanent basis to other, qualifying networks, such as NLR. Thus, Internet2 is giving the Commission the sleeves off its vest when it suggests that although a single network is appropriate on a temporary basis, *i.e.*, for the pilot program, it is possible for multiple networks to serve the regional networks once the program becomes permanent. *See e.g.*, Internet2 Comments, pp. 5-6.

[6] Nowhere in the Order does the Commission cite interoperability and integration as goals of the program. If those are goals of the Commission, it need only look as far as NLR because NLR is based on the interoperability and integration of its network with the networks of the RONs who are members of NLR.

Commission will never obtain a full understanding of the different types of connections at different locations using different technologies, especially if, as suggested by Internet2, the Commission ends up opting for connections to multiple backbones. *See e.g.*, Internet2 Comments, p. 3. Instead, the data would be homogenous to one network and ignore, for instance, any need the Commission may have to test alternate forms of interconnection as well as the needs of health care providers to choose among those alternate forms in order to best meet their needs.

10. Internet2's second claim is that the Commission was correct to only fund connections to Internet2 because NLR does not provide connections to all fifty states, every institution that connects to NLR "connects or could easily be connected to" Internet2 but that the reverse is not true, Internet2 has a depth of experience in health care and network integration and Internet2's network "has an unparalleled record of reliability [of 99.9%]."[7]

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[7]In fact, Internet2 claims that it is "unique," *i.e.*, that "only" Internet2 has "extensive experience in health care;" that "only" Internet2 has a history of network reliability and financial stability; and that "only" Internet2 has shown that it is "capable of integrating local and regional networks" into a national backbone. Internet2 Comments, p. 9. As shown by NLR in the Petition, Internet2 is not the "only" network with those characteristics because NLR does as well. Similarly, Internet2 claims that it can add new connections "quickly, easily, and inexpensively." Internet2 Comments, p. 11. So too can NLR. Internet2 claims that its agreement with Level 3 will allow it to offer services beyond its current footprint. This characteristic, of course, is true with any network, including that of NLR, *i.e.*, any network can be expanded beyond its footprint. Internet2's other claims that its "new" network "will offer many other services and unique capabilities, including wave services, off-net circuits, and dark fiber services" is a claim of the future, not the here and now. Internet2 Comments, p. 19. NLR, on the other hand, currently offers those services. Internet2 claims that its Abilene network carries 10 gigabits per second and that its "next generation network" will deploy waves initially supporting 10 Gbps waves "extensible" to 40 waves. NLR's network was and always has been designed for 40 10 Gbps waves. In short, although Internet2 fails to show how any of its "unique" characteristics apply to rural health care it is clear that those characteristics, and then some, are applicable to NLR.

11. Contrary to Internet2's allegation, NLR does provide connections to all fifty states and every institution that connects to Internet2 either connects or could easily be connected to NLR.[8] NLR has a depth of experience in health care (as evidenced by Attachment B to its Petition) and since it was founded on its connections to RONs, it has the very experience with network interoperability and integration that Internet2 claims is sought after by the Commission in its program.[9]

12. In view of the fact that NLR's network is a "neutral" network owned, controlled, managed and operated by NLR, and not an underlying commercial carrier, it not only has an unparalleled record of reliability (99.9%) but it is not dependent upon the reliability of another provider which it does not control.[10] In other words, any stability of Internet2's network is as good or bad as the stability of the underlying carrier, not

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[8]NLR questions why Internet2 seems to believe that connections to all fifty states is important because, as recognized by Internet2, the program "is designed to test certain concepts and initiatives on a smaller scale before committing to them in a more permanent (and expensive program)". Internet2 Comments, p. 6.

[9] Internet2 claims that it is connected to every RON that is connected to NLR. Internet2 Comments, p. 10. Internet2 ignores, however, that NLR, unlike Internet2, is founded on such connections, *i.e.*, the members of NLR and the Board of NLR are comprised of RONs. Internet2, on the other hand, is comprised of individual institutional members who pay fees to use its network. Moreover, at least one such RON has already dropped its Internet2 connection and others are expected to do likewise.

[10] It is curious but unsettling that Internet2 claims a record of 99.9% reliability. Internet2 is migrating from Qwest to Level 3. It expects to complete the migration by September, 2007; in the meantime, the pilot program will be underway. Since the migration is not yet complete, NLR can only assume that the network reliability referred to by Internet2 is the reliability of its current carrier which will become moot once Internet2 moves away from that network.

Internet2. Finally, Internet2 fails to point out any network or financial instability of NLR or, for that matter, any other network.[11]

13. On a more minor note, Internet2 also claims that interconnection to other networks will somehow spread "more thinly" the project's funding and undermine the robustness of the program (Internet2 Comments, p. 5) as well as "increase the complexity" of administration because it would require the Commission "to monitor and test performance across multiple networks" (*id.* at 8). Internet2 does not provide any support for those conclusions nor can it. For instance, merely changing the backbone with which a regional network connects should not change the cost of the connection. Moreover, since the cost of interconnection to a backbone should be nominal in comparison to the funding of a state or regional network. What Internet2 seems to mean instead is that its funding, not the funding of the program, will be thinned.

14. Internet2 argues that the Commission has discretion to structure the program in a manner that provides the best test of its policy objectives even though NLR did not raise this issue. In support of this claim, Internet2 cites Section 4(i) of the Communications Act (47 U.S.C. §154(i)) implying, it is assumed, that the Commission can do anything not inconsistent with that portion of the Act under which the Commission established the program. Internet2 Comments, note 14. Internet2, however,

[11] In support of its claim of stability, Internet2 states that it is connected to federal entities, such as NASA and the Department of Energy, specifically, ESnet. Internet2 Comments, pp. 17-18 and note 44. So too, however, is NLR. In point of fact, the Oak Ridge National Laboratory, which is the Department of Energy's largest science and energy laboratory, is a member of NLR.

fails to demonstrate why what it claims the Commission has done in this instance is not inconsistent with the Act.[12]

15. Internet2 cites two cases for the proposition that the program should be granted "substantial deference" because it is interim. It is a standard used by a court when reviewing actions of the Commission. The Commission cannot therefore impose the standard on itself as argued by Internet2. Even assuming that the cases are analogous, *i.e.*, that this matter qualifies as "interim," the Commission's actions are nevertheless still subject to the arbitrary and capricious standard, which applies to judicial review of agency action generally, providing an important check on the Commission's power to issue interim orders. *See Competitive Telecomm. Ass'n v. FCC*, 87 F.3d 522, 529 (D.C. Cir. 1996).

16. In *Competitive Telecommunications Association*, which dealt with an interim rate structure, the Commission asked the D.C. Circuit "not to consider an issue that [the Commission] has not finally decided." *Id.* at 531. The Court, however, rejected portions the rate structure and stated that the deference proposed by the FCC "would permanently immunize the FCC from review of the 'interim' . . . rate." *Id.* at 531; *see also Union of Concerned Scientists v. Nuclear Reg. Comm.*, 711 F.2d 370, 379 (D.C. Cir. 1983) ("So long as we can grant meaningful relief affecting the controversy that precipitated the litigation, we may, in the interest of sound judicial administration, afford that relief with as much propriety upon review of the interim rule.") Indeed, in language that Internet2 replaced with ellipses, the D.C. Circuit stated, "[t]he proper judicial

[12] *See supra*, note 2 for a discussion of the "competitively neutral" requirements of Section 254(h)(2)(A) of the Act.

response to an interim rule is *not to abdicate responsibility*." 87 F.3d at 531 (emphasis added).

17. A Court's obligation to review an interim order is especially critical where, as here, the Order will remain in place for a period of years. *See Competitive Telecomm. Ass'n*, 837 F.3d at 531 ("The Commission can not expect to avoid judicial scrutiny so easily—especially when the 'interim' is measured in years and follows almost a decade of 'transition.'")

18. In the middle of its argument about interim Commission authority, Internet2 launches into a discussion of the Commission's goal to establish a "ubiquitous nationwide broadband network" which, not surprisingly, Internet2 interprets to mean a "single, nationwide, interoperable" network. Internet2 Comments, pp. 5-6. Ubiquitous, yes; one, nationwide network, no.

19. It is inefficient and risky to depend on one network, especially when that network, in the case of Internet2, is really the network of an underlying, commercial carrier.[13] It is risky because it not only prevents redundancy in the event of network failure but it embeds in one network a monopoly over vital health care traffic. If health care providers are dependent on only one network and that network suffers any downtime, the health care providers will have not any place else to go. It is bad engineering and it flies in the face of the Commission's goal, as recognized by Internet2, to support "a coordinated response to a national crisis." Internet2 Comments, p. 3.

20. More than one network is also required because the needs of regional networks will vary with some regional networks finding interconnections with NLR

[13] *In accord*, the President's National Security Telecommunications Advisory Committee *Next Generation Networks Task Force Report*, p. 24 (March 28, 2006).

preferable to interconnections with Internet2. That is the nature of choice which is something Internet2 apparently wants to deny the regional networks. Indeed, relying on one national network is unrealistic. As ATA points out, health care providers in this country are connected to "more than 200 existing networks." (Attachment B to the Petition is testament of the numerous health care providers interconnecting, directly or indirectly, with NLR.) Forcing health care providers off of those networks makes no sense and is wasteful. Thus, as ATA also states, "[d]ictating the use of one, two, or any select number of private vendor(s) for the use of federal funds is a highly questionable use of taxpayer dollars."[14] ATA Comments, para. 1.

21. Internet2 claims that permitting connections to NLR will "balkanize" the need for a nationwide backbone that interconnects with regional health care networks and that it will not permit the Commission to test the interoperability and feasibility of connecting regional health care networks as a "ubiquitous national whole." Internet2 Comments, p. 3.

22. Internet2's claim of "balkanization" is based on the premise that providers connected to NLR will not be able to gain end-to-end connectivity if they must communicate with providers connected to Internet2. The premise is false for at least two

[14] It is worth noting Internet2's claim that "a rural health care provider connected only to NLR could not communicate with a major research facility connected only to Internet2," Internet2 Comments, p. 7, or that a local health care network that connects only to NLR's backbone risks balkanizing the program because it would be unable to access important resources connected only to Internet2." Internet2 Comments, pp. 7 and 10, respectively. Of course, on that basis, any rural health care provider connected only to Internet2 could not communicate with a major research facility connected only to NLR and any local health care network that connects only to Internet2's backbone risks balkanizing the program because it would be unable to access important resources connected only to NLR.

reasons: (1) NLR and Internet2 are interconnected, at least indirectly through other networks, such as Network Virginia, which is depicted in the map attached to the Petition as Attachment C (for example, since Internet2 claims that it is connected to all of the RONs that are connected to NLR, it is connected to NLR)[15] and (2) NLR and Internet2 can certainly become interconnected (NLR has offered to peer with Internet2 on two different occasions but Internet2 has declined the offers giving as one reason the potential negative impact on Internet2's financial stability; any balkanization, therefore, is at the hands of Internet2, not NLR.)

23. The premise also demonstrates the inefficiency of Internet2's position. Every RON that connects health care providers in its region and is currently connected (or prefers to be connected) to NLR's nationwide network (see Attachment B to the Petition) will be required under Internet2's position to either disconnect from NLR and reconnect its regional network solely to Internet2 or duplicate the connections.

24. Michael Crow, President of Arizona State University and a Trustee of Internet2, as well as Thomas Sawyer, Vice President – Information Technology, University of Louisville, a member of Internet2, submitted letters opposing the Petition. Like the Comments of Internet2, President Crow concludes that health care providers should be linked solely to Internet2 because of its "significant experience, broad reach and national membership." He further concludes that in order to be "useful, efficient and interoperable" a health care network "must be housed in a single, stable organization," and that Internet2 offers "advanced networking capabilities with extremely high levels of reliability, security and capacity." Of course, similar to Internet2's Comments discussed

[15] In point of fact,at least one regional network has already dropped its Internet2 connection and others are expected to do likewise.

above, he doesn't claim that NLR does not meet those same criteria nor does he provide any support for his conclusions other than to state them as a matter of fact.

25. Mr. Sawyer makes the same, unsupported conclusions, *i.e.*, that Internet2 should be the only network because it is "essential that local, regional, and state-wide health care networks be interoperable and interconnected." He also cites Internet2's "broad geographic reach and vast membership" which makes it a "truly nationwide network." In the same fashion as Internet2 and President Crow, he does not claim that NLR doesn't possess the same characteristics except to state, also without any support, that NLR's backbone "does not provide the same capabilities." As set forth in the Petition and this Reply, NLR's network not only provides the same capabilities as the network of Internet2 but it surpasses them. *See e.g.*, Petition, paras. 3 and 4.

Conclusion

26. In sum, how can it seriously be argued that connections to only one backbone is in the interest of rural health care, even for a pilot program? It is clear that short of government ownership, there will always be multiple, nationwide networks and that, depending on the needs and location of a particular regional network serving health care providers, some regional networks will be better served by a particular nationwide network versus another nationwide network. Furthermore, restricting the pilot program to one network will never give the Commission the type of experience, data and feedback it needs to determine how best to proceed on a permanent basis. It will never know whether connections to one network versus another network is better, the same or worse. It will never be able to consider different types of networks, in different locations with different technologies. The Commission will have no means of comparison; no means by

which to determine what is the best use of universal service funding of regional networks for health care providers.

27. Choice is a well-established principle and policy of this Commission which is clearly in the public interest. There is no reason why it should not be equally applicable in this instance. The public interest calls for connectivity as best seen fit by the regional networks who will serve the needs of health care providers. If those networks believe that in their particular case interconnection with NLR is a better fit, they should be allowed that prerogative. Anything else is anathema to a free and open society that strives for the common good and does not protect the self-interest of one network.

28. The Commission needs to put the public interest of rural health care above the interest of Internet2, regardless of how Internet2 masks its true intent. In doing so, it needs to reconsider its Order or, in the alternative, clarify that interconnections to Internet2 are not the only qualifying interconnections but that connections to NLR are equally acceptable. In view of the pending need to end the confusion among rural health care participants so that they may continue or discontinue exisiting and prospective interconnection projects, the Commission needs to act quickly, decisively and publicly.

Respectfully submitted,

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Dated: November 28, 2006

Attachment A

National LambdaRail Network Architecture

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Internet2 Network

for more information about Internet2 and its new network: http://www.internet2.edu/network

CERTIFICATE OF SERVICE

I hereby certify that a copy of the *Reply of National LambdaRail, Inc.* in WC Docket No. 02-60 was delivered by electronic mail or first-class, postage prepaid, U.S. mail on this 28th day of November, 2006 to the following:

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