

Merger Planning Team Final Report

August 15, 2007

Preamble

Over the past several years, Internet2 and National LambdaRail (NLR) have created advanced networks, assuming leadership responsibility for meeting the networking needs of the U.S. research and academic community and for building relationships with the major networks that support the corresponding communities abroad.

The contributions of Internet2 and NLR during the time of their existence have been enormous. Unfortunately, as their spheres of activity have come to overlap more and more, their relationship has evolved from one of healthy complementarity into one of self-destructive competition. The past 18 months have witnessed a distracting diversion of resources and energy away from the primary tasks of innovation, research, and education, into an excessive focus on the organizations themselves.

A merger holds the promise of bringing an end to this battle for organizational survival, enabling the entire community to focus its energies outwards towards productive ends. A successful merger would create an organization that can draw on the best attributes of each existing organization, with enhanced flexibility and adaptability going forward. It could work in more effective partnership with other members of the national and global cyberinfrastructure community, promoting understanding of the transformative power of advanced networking for the future of humanity.

Building on the work of others, the Merger Planning Team is of the unanimous view that Internet2 and National LambdaRail should merge on the terms described in the attached Definitive Agreement to Merge. We believe that the research and education communities whom our organizations were created to serve will derive greater benefit from the creation and operation of a merged organization on these terms than they would derive from the continuation of two separate, rival organizations. We believe that the terms of the merger described below are fair to all concerned and will establish a structure under which the merged organization can succeed in both the short and long term.

The merged organization proposed in the Definitive Agreement to Merge is neither Internet2 nor National LambdaRail, but a combination of the two. Following on the recommendations of the Network Planning Team, we have not predicated our recommendation upon the anticipated elimination of any specific current activities. We

are recommending that, with a new CEO, a new Board, and a new governance structure, the new organization should undertake a comprehensive strategic planning exercise, including a top-to-bottom review of current programs, in order to determine what activities should be priorities for the long term. There is no reason to assume, a priori, that those activities will not include a full complement of network services (IP, commercial peering, demand aggregation for price discounts on commodity traffic, Layer 2 service, and two different varieties of DWDM service), network-related activities (applications, middleware, security, etc.), and community leadership on the national and international platforms. We recognize that this approach poses financial challenges for the merged organization. But we believe that those challenges can be overcome through a participatory planning process that will ensure that the organization is appropriately financed for the activities its members wish to support.

In the pages that follow, we first describe our recommendations for the way key issues should be resolved in the Definitive Agreement to Merge and the Bylaws of the merged organization. We then describe the basis for our conclusion that the merged organization will be financially viable. A set of Appendices complete our report.

Key Principles of the Merger

Mission.

I2-NLR represents a merger of equals between Internet2 and National LambdaRail designed to capture the best of both organizations and their approaches to providing advanced networking infrastructure and related services to the U.S. research and education community. I2-NLR incorporates the missions of both organizations.

See the proposed vision statement included in Appendix A.

See Bylaws Article I.

Commitment to Full Use of the IRUs.

I2-NLR will use the NLR IRUs as an integral part of the national network infrastructure for the full life of the IRU agreements. Failure to do so will trigger IRU clawback to/by NLR Investors.

See Bylaws Article XII, Section 3.

Dual Infrastructure Evaluation and Full Control of Optical Paths.

We endorse the recommendation of the NPT that the operation of two national optical networks over the next several years inform community-based decisions regarding architecture, operation, and financing of one or more national R&E backbones in the future. Beyond network engineering considerations, operation of the two networks with their differential provisioning costs and service offerings will enable the community to reach a better understanding of the array of services that I2-NLR should provide to support the R&E community. In both cases, I2-NLR anticipates operating its networks on systems of fiber and equipment that are wholly dedicated to its use. In all events, I2-NLR must have the ability, in cooperation with its regional connector partners, to promptly establish and take down optical paths across the networks at the times and in the manners of its own choosing to support its leading edge mission. It must have the independent ability to monitor network performance and to measure network capabilities directly, through its own employees and agents of its own choosing. We recognize that there is a serious debate about the relative benefits and liabilities of owning and leasing optonics, in which reasonable people hold different views. Ownership advocates point to greater security of title, greater independence from vendor fortunes, and widespread deployment of owned infrastructure among leading state and regional networks. Leasing

proponents assert such advantages as greater flexibility in technology-driven upgrades, and the opportunity to provide stronger guarantees of reliability and performance. There are also differences of opinion about full life cycle costs associated with the two approaches. We view operation of the two networks in parallel over the next several years as a valuable means of assessing the complementary costs and benefits of each approach and gaining insight into price elasticity as well as network externalities within the R&E environment. The Architecture and Operations Advisory Council (AOAC) will provide advice and guidance to the Board of Trustees on the development of the I2-NLR network infrastructure and services over time.

See Bylaws Article XIII Section 3.

Partnership with Regional Connectors.

Regional Connectors (RCs) are the primary and preferred partners of the Corporation in deploying national networks, connecting members within regions to the Corporation's networks and services, providing exchanges and collocation capabilities in a region, and collaborating with and connecting to other regional, national, and international networks. RCs will comprise the "Investors" (current members of NLR) and other multi-entity connectors to the backbone. In the event that an RC is unable or unwilling to provide a particular service as required by one of its members, the member, the RC, and I2-NLR will strive to develop jointly an alternative approach to delivering such a service. The RC Caucus and the Executive Liaison Caucus shall be consulted on matters relating to the relationships and conflicts among I2-NLR, an RC, and a member.

On and after July 1, 2009, all RCs will have access to the same I2-NLR service offerings at the same prices, subject to the RC's willingness and ability to make appropriate connections to the national backbones. During the Initial Period, the Investor RCs will receive certain special considerations described below. During the Initial Period, Non-Investor RCs shall be eligible to acquire static waves on what is now the NLR network via Investors only through an Investor RC connected to the NLR network.

Based on geographic considerations and the deployment and availability of fiber, we expect that over the long term there will be on the order of 15 to 25 RCs. We recognize that there is a serious debate about how much authority within the overall system should reside with RCs, how much with individual campuses, and how much with a representative national organization. We expect that one of the long-term challenges for the research and education community will continue to be the calibration and re-calibration of that balance. I2-NLR will work with the RC Caucus and the Executive Liaison Caucus to develop mechanisms for transparency, inclusive participation, and sharing of best practices at all three tiers (individual campus, regionals, national), enabling processes through which expectations are set, compliance is monitored, and disputes are resolved at all three tiers. It is essential that RC's be supported as decentralized sources

of deployment, financing, innovation and experimentation, and local responsiveness, without setting in concrete a particular geographic instantiation of regionalization that might inhibit dynamic growth or response to particular opportunities and changes. And at the same time, we must be able to work together in a consistent and coherent manner at all tiers to support the achievement of collective national goals, many of which are long-term in nature.

Existing Internet2 member institutions may make use of the networks under existing Internet2 rules throughout the Initial Period, and thereafter until the relevant governing rules may be modified by the Board.

We expect a future in which an increasing number of our community's key partners will include large national and international entities. We do not believe a single paradigm will be right for all such partnerships. Sometimes, as in the case of the ESnet partnership with Internet2, a single comprehensive partnership relationship may be appropriate. At other times, as in the case of NASA's partnership with National LambdaRail, a more distributed approach will be appropriate. In all cases we expect the development of such relationships to proceed through an inclusive and participatory process, working with RCs and not bypassing them. The AOAC will provide ongoing guidance to the staff and Board on preferred architectures for new kinds of partnerships.

See Bylaws Article XIII Section 4.

Investor Benefits.

In recognition of the Investors' past contributions to National LambdaRail, they will receive certain special benefits, relative to other RC's:

On the financial side, they will receive: (1) perpetual clawback rights as specified above; (2) the right to continue their existing connection to the NLR network for a single connection fee of \$500K during the final year of their NLR membership contract, and at the rate of \$500K for each twelve month period throughout the remainder of the Initial Period. Those Investors who have paid more than \$500K during 2007 in the final year of their contract shall receive a credit of the excess paid above \$500K, that may be applied during 2008; (3) the right to receive a discount of 50% on their existing connections to the Internet2 network during the period extending from the closing date through 12/31/07, and to continue those connections without charge for the remainder of the Initial Period; (4) the right to receive unlimited access to all I2-NLR shared services and to purchase carrier-provisioned waves at prevailing member prices; and (5) the opportunity during the Initial Period to enter into contracts with terms of up to five years to provision static waves on what is now the NLR network at the current NLR prices. (Note that participant fees for entities connected by the RC, including SEGP fees, will still apply.)

On the governance side, Investors will receive enhanced standing within the Board and Councils as specified in the MoA, after which they will become part of the RC constituency.

On the geographic responsibilities side, Investors will receive initial areas of geographic responsibility consistent with their NLR areas of geographic responsibility, but not to the exclusion of the ability of other existing non-Investor RC's to provide services within their current geographic areas of activity. During the Initial Period, any change in these patterns of service would need to be considered through a transparent and consultative process involving the RC Caucus, and endorsed by a 75% vote of the I2-NLR Board.

See Bylaws Article XII, Article XIII Section 2.

Governance.

The following points of clarification are made to the MoA's discussion of governance:

It is expected that the governance structure of I2-NLR will evolve continuously in response to changes within and outside the community. To facilitate that process, the Governance and Nominations Committee (GNC) will be charged during the 2008-2009 fiscal year with responsibility for conducting a full governance review, including consultation with the community, similar to that which was followed by the Internet GNC during 2006, and to prepare a public report with recommendations that will be ready for consideration by the I2-NLR Board that will take office on July 1, 2009. This review will consider the lessons learned by the GNC in the course of the first round of elections, input developed through community consultation, and changes in circumstance that result from the merger.

During the Initial Period the membership of the Governance and Nominations Committee will be expanded to include two leaders within the Investor community, to be specified by the Chair and Vice Chair of I2-NLR.

A set of new Caucuses will be created as special resources to the Board, Management, and Councils: a Network Researcher Caucus, a Disciplinary Researcher Caucus, an RC Caucus, and an Executive Liaison Caucus (corresponding to Internet2's "Community Leaders Forum"). Caucuses are intended to provide constituent input into the more formal governance processes.

During the Initial Period each Advisory Council may choose to elect as its Chair any member of that Council or any member of the Board. In order to ensure a strong liaison between the Councils and Board, if the elected Council Chair is not a member of

the Board then the Council will be asked to also select a Vice-Chair who is a member of the Board. The Council membership may expand to 16 in order to accommodate a Board member who may join the Council as Chair or Vice-Chair.

The list of 21 Board members identified in the Memorandum of Agreement who shall serve during the Initial Period is replaced by the list of individuals included in Confidential Appendix E.

In the event any of the 21 named Board members is unwilling or unable to serve during the Initial Period, a replacement shall be nominated by the Chair and Vice-Chair of the Board and ratified by a 50% vote of the Board.

See Bylaws Article IV Sections 2, 10; Article VI Section 2.

Acceptable Use Policy.

I2-NLR is committed to limiting the use of Acceptable Use Policies to the greatest extent possible and will avoid entering into contracts that limit its flexibility and that of its membership in this regard. In order to provide maximal flexibility for its constituents, I2-NLR will not implement any Acceptable Use Policy unless it is necessary under applicable state or federal law (such as that which is necessary to preserve the tax-exempt Code Section 501(c)(3) status of I2-NLR) or is necessary to fulfill current contractual obligations. Members or other partners acquiring lambdas or other services from I2-NLR may implement Acceptable Use Policies appropriate to their program characteristics and participants.

See Bylaws Article XIII, Section 1.

Scope of Services and Service Review.

The initial scope of activities of Internet2-NLR will encompass all the services, projects, and programs currently being carried on by both Parties. These activities of the Parties will remain and continue to operate in their normal fashion until the Internet2-NLR Board has completed an assessment of the scope of activities and, based upon that assessment, established a plan for changes to the scope of activities of Internet2-NLR going forward.

The Bylaws and Definitive Agreement to Merge provide the initial basis for the merger of Internet2 and NLR. In addition to the ongoing work to integrate the network capacity offerings of both organizations, the Initial Board shall direct a highly participatory top-to-bottom review of the service offerings of the organization. The purpose of this review shall be to validate the relevance and importance of all services

offered, to ensure the financial capability of the organization to deliver such services in a high-quality manner, to support alignment of the organization's staffing with its mission and direction, and to provide input into any changes in the financial and membership model of the organization as required to ensure transparency of financing and member acceptance of any cross-subsidies.

See Bylaws Article XIII Section 5.

Public Goods and Internal Subsidies.

Internet2-NLR is a nonprofit membership organization that is dedicated to the provision of a range of public goods for the research and education community, with a rigorous commitment to transparency in prioritization and internal subsidization of projects, rather than a fee-for-services organization that prices all elements of its activities as “tubs on their own bottoms.” That said, I2-NLR is committed to ensuring transparency of financing and member acceptance of any cross-subsidies.

See Bylaws Article XIII Section 5.

Executive Management of Internet2-NLR.

Upon approval by both organizations of the Definitive Agreement to Merge, a CEO Search Committee will be formed to recruit a new CEO for Internet2-NLR. The CEOs of Internet2 and NLR shall be ineligible to serve in this position. The CEO Search Committee shall consist of Jeffrey Lehman, Tracy Futhey, James Bruce, and Wayne Clough, and shall be supported by a professional search consultant. Should a new permanent CEO be unable to begin service on the Closing Date, the Internet2-NLR Board shall appoint an interim CEO who is neither the CEO of Internet2 nor the CEO of NLR.

See Definitive Agreement Section 5.15.

Financial Viability of the Merged Organization

The Merger Planning Team (MPT) has worked to confirm that it is economically feasible for a merged organization to operate pursuant to a vision statement that it has previously provided, at a cost that is affordable to the stakeholder community. The merged organization's operational costs and revenues will derive from network operations and from the conduct of other "core" organizational activities not directly associated with network operations. As a matter of accounting, we expect the merged organization will track and report those two different kinds of activities separately in order to achieve the commitment to financial transparency and explicitness of subsidies, but will operate as a single, integrated organization.

With respect to network operations, the MPT has taken as its starting point the report of the Network Planning Team (NPT). The NPT concluded its analysis of the technical issues associated with a merger of Internet2 and National LambdaRail by describing a hypothetical approach to consolidating the two networks. The NPT approach is designed "to optimize on flexibility and long-term cost savings rather than focusing primarily on near-term cost savings." The key features of the NPT approach are:

1. Consolidation of IP connectivity services using the Cisco routers. (The MPT recommends that peering between the two IP networks be implemented as quickly as possible pending consolidation.)
2. Peering services using the Juniper routers, partnering with Juniper and potentially an independent third party peering service such as TransitRail.
3. Layer 2 and Experimental Services optimized based on customer demand.
4. Two different types of wave services (at least through 2009) at two different price points reflecting two different service levels.

In conducting this exercise, the MPT has sought to develop an approach to projecting the likely revenues and costs of the merged organization that it recommends for use as a point of departure (an approach referred to as "Scenario 1" below). At the same time, the MPT recognizes that the Boards of the existing organizations will want to understand the sensitivity of the projections in Scenario 1 to variation in the background empirical assumptions, and that the Board and management of the new organization may choose to depart from the policy assumptions underlying Scenario 1.

Accordingly, the MPT has sought to explore a range of options available to the new organization, and the plausibility under a range of different circumstances of the proposition that the merged organization will provide genuine and cost-effective value to the research and education community, relative to continuation of the status quo. To do

so, we have relied upon a spreadsheet model that was created to show the relationship among different parameters, and how varying those parameters might affect the overall financial picture of the organization.

The model operates across the period from 2008 through 2023. We have considered the years after 2013, however, only to ensure that we do not construct scenarios that work in the short term at the expense of the long term. We do not report numerical projections beyond 2013, as we believe the future is too cloudy for specific numbers to have analytic value for decision-making.

In creating different scenarios with the model, we have made a few structural assumptions. (These assumptions were either non-parametric features of the model, or were parameters that we did not vary significantly.) Some of these assumptions reflect empirical assessments of the environment in which the organization will operate, others reflect recommended policy commitments, and others reflect assumptions about how the new organization might conduct its affairs that we find plausible without denying the plausibility of other policy choices. The most important structural assumptions are:

- a. Two sets of service offerings. The organization will carry forward the full set of service offerings described in the NPT report. At the Layer 1 level, those offerings will cluster into two sets of services: a “carrier provisioned network” featuring the end-to-end dynamic provisioning and carrier-class guarantees of the current Internet2 network at a higher price point, and a “community provisioned network” featuring the static waves of the current NLR network at a lower price point. The organization will retain the ability to route traffic between networks in order to optimize traffic flow.
- b. Technological progress. We assume that technology relevant to the activities of the merged organization will continue to improve dramatically, and at times disruptively. Sometimes such improvements will translate into reductions in the price of equipment needed for network operations, and such reductions can be modeled parametrically within the model. At other times, the improvements will yield quality improvements rather than price decreases. Perhaps most importantly, certain changes (such as the potential transition to 100 Gbps waves within the next 2-4 years, or the possible development of longer-distance transmission technologies in the middle term) could yield non-incremental changes in cost structure or in service delivery. The model does not attempt to reflect such possibilities.

The model also includes many parametric assumptions that we have varied to create different scenarios. The most important parametric variables are:

- i. Fee structure for the merged organization. We have experimented with different combinations of charges to different participants in the community. Generally, we separated “membership fees” from “connection fees.” In the Initial Period, connection fees hew closely to the current structure of fees with

which community members are familiar; in the Long Term, we also experimented with simplified models that rely on fewer distinct charges.

- ii. Base cost structure for the merged organization. We have experimented with different assumptions about the pattern of costs the organization will incur for programs and core operations.
- iii. Cost structure for additional additional Layer 0/1 capacity. We have experimented with different assumptions about future patterns of cost to the organization of acquiring additional optical wave capacity, both for community-provisioned and carrier-provisioned network services.
- iv. Price structure for Layer 0/1 services. We have experimented with different assumptions about the average prices that the organization's "customers" will pay for optical wave services. We note that these average prices are the result of a number of different factors: the terms (1-5 years) of wave contracts, the nature of contract purchasers (e.g., R&E members vs. government partners vs. commercial researchers).
- v. Demand for layer 0/1 services. The model assumes (in accord with existing usage patterns) that different segments of the network experience different levels of use (low, medium, and high). We have assumed that demand will grow across all segments, but at different rates. We have experimented with different assumptions about the rate at which overall demand will grow and with different assumptions about the distribution of that demand between community-provisioned and carrier-provisioned waves.
- vi. Core community size. The model assumes that the total number of campus users will remain relatively stable, although it could clearly rise or fall. We allow for greater variation in the number of regional connectors, reflecting different assumptions about the degree of aggregation that will prevail in equilibrium.

We began by creating a "model" or "base" scenario, which we have referred to as "Scenario 1." The key assumptions in Scenario 1 are as follows:

- During the Initial Period, the population of RCs and network participants remains relatively stable, paying fees according to the terms of the Definitive Agreement. Beginning in 2010, the population of network participants remains stable at 240, and the population of RCs remains stable at 24.
- In 2008, total base expenditures for the merged organization's various programs and activities are reduced by 9% from the sum of each separate organization's most recent projected expenditures for that year.
- After the Initial Period, base membership fees for campuses increase to an average of \$50,000 per campus, Connection fees are set at an average

of \$500,000 base per Regional Connector (RC), each of which is assumed to connect an average of 10 campuses, plus an average of \$42,000 per connected campus. The model is neutral as to whether the per-campus charge is collected directly from the campus or indirectly from the RC.

- Demand for optical waves grows modestly overall (at a rate lower than has been suggested informally by members of both the Internet2 and NLR staff). Growth in demand from the community is directed primarily towards community-provisioned waves (75% until 2013 and 67% thereafter).
- Demand for optical wave contracts is distributed equally across 1-, 2-, 3-, 4-, and 5-year contracts.



- Technological progress leads to steadily falling prices, both for electronics purchases and for managed services.

In general, the MPT believes these to be a fairly conservative set of assumptions. Appendix D shows the picture of operations and results for the period from 2008 to 2013 projected by the model under Scenario 1.

Appendix D also shows how seven different scenarios change the projections obtained under the model. The Scenarios are as follows:

Scenario 2 (“Faster Waves Sales - Balanced”) retains the features of Scenario 1, with the following modifications:

- Demand for optical waves grows more robustly overall, with demand equally divided between community-provisioned and carrier-provisioned waves.

Scenario 3 (“Faster Wave Sales – Carrier Provisioned”) retains the features of Scenario 1, with the following modifications:

- Demand for optical waves grows more robustly overall, with 80% of demand going to carrier-provisioned waves.

Scenario 4 (“Faster Wave Sales – Community Provisioned”) retains the features of Scenario 1, with the following modifications:

- Demand for optical waves grows more robustly overall, with 80% of demand going to community-provisioned waves.

Scenario 5 (“Faster Wave Sales, New Anchor Tenant, Reduced Costs to Community Connections”) retains the features of Scenario 1, with the following modifications:

- Demand for optical waves grows more robustly overall, with demand equally divided between community-provisioned and carrier-provisioned waves until 2013, and with 75% of demand going to carrier-provisioned waves thereafter.
- Before 2010, a second additional partner from outside the community commits to a significant contract for carrier-provisioned wave services.
- After the Initial Period, connection fees are lowered to an average of \$400,000 per RC plus an average of \$42,000 per connected campus. The model remains neutral as to whether the per-campus charge is collected directly from the campus or indirectly from the RC. This demonstrates just one example of how the new organization may adjust the prices of services to members based on overall market demands.

Scenario 6 (“Greater Aggregation”) retains the features of Scenario 1, with the following modifications:

- While the total number of network participants remains constant, the number of RCs falls to 20 by 2010 and to 15 by 2023.

Scenario 7 (“Costs Don’t Fall”) retains the features of Scenario 1, with the following modifications:

- Technological progress produces increased performance but not falling prices.

Scenario 8 (“Slower Wave Sales”) retains the features of Scenario 1, with the following modifications:

- Demand for optical waves grows at half the rate projected in Scenario 1.

Our analysis indicates that the new organization will enjoy a healthy financial future under a wide range of conditions. While in most cases the organization will operate in deficit for 2008 and 2009, based on the expected levels of Net Present Value of the organization through 2013, the cumulative deficit would be well within the financial carrying capacity of the merged organization. We believe that incurring deficits of this order would be a reasonable approach for the new Board to accept while it undergoes strategic planning and program review.

Conclusion

We unanimously recommend that the Boards of Internet2 and National LambdaRail agree to merge their two organizations into a single new organization, on the terms set forth in the attached Definitive Agreement to Merge.

Respectfully submitted,

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David Lassner
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Appendices:

- A. Proposed Vision Statement for the Merged Organization
- B. Proposed Definitive Agreement to Merge
- C. Proposed Bylaws of I2-NLR
- D. Scenarios Illuminating Financial Viability Analysis

Confidential Appendix:

- E. Proposed Substitute List of Names of Initial Board Members

Merger Planning Team Final Report

Appendix A

A Vision for Internet2 – National LambdaRail

Mission

Internet2-National LambdaRail (I2-NLR) is the organization with primary responsibility for ensuring that the American research and education community can access and exploit advanced network capabilities adequate to its needs. In so doing, I2-NLR advances the state of the art in networking and its application. This nonprofit consortium of universities and state/regional networks is proposed to arise from a merger of Internet2 and National LambdaRail designed to capture the best of both organizations.

Context

In other parts of the world, governments have led the development of advanced networking, with responsibility assigned to specific ministries and public telecommunications enterprises. In the United States, the federal government has stepped back from this role. Since the commercialization of the Internet took hold in the mid-90s, technological advances have been led primarily by a decentralized research and education community that has developed its own dedicated network infrastructures, most notably Internet2 and National LambdaRail.

I2-NLR is the organizational embodiment of the American research and education community's commitment to advanced network development. I2-NLR serves a dual purpose: to satisfy that community's unique *present* needs in the field of advanced networking, and to drive *future* advances that will keep America competitive in network technology and its application.

I2-NLR is committed to keeping the United States at the forefront of network technology and its application. I2-NLR partners with university and lab researchers and with corporate partners to develop and deploy new technological capabilities, often in advance of proven, well-understood demand. And I2-NLR partners with international networks in developing, deploying and applying new network capabilities in support of education and research. Critical to the success of these partnerships is I2-NLR's close working relationship with the regional networks, which serve as the primary connection point for universities and labs and as the key exchange point for international networks.

Roles

In the present, I2-NLR is committed to ensuring that the American higher education community has access to world-class advanced networking technology. I2-NLR operates a national optical infrastructure that supports both production services at layer 1 (wavelengths), layer 2 (an innovative wide-area Ethernet transport), and layer 3 (Internet Protocol communications), plus experimental networks that can be deployed and tested with no risk to production services.

I2-NLR supports the development and wide dissemination of middleware and applications that capitalize on the full power of advanced networks. It supports the capture of “positive network externalities” (situations where a good becomes more valuable as others acquire and use the same good, such as a telephone) through the extension of high-performance network capabilities across and beyond the research and education community.* I2-NLR facilitates collaborative interaction among its members and with other cyberinfrastructure organizations, both domestically and internationally. It provides an effective vehicle for partnership with federal advanced networking and cyberinfrastructure programs.

Looking towards the future, I2-NLR provides network researchers with flexible and customizable building blocks so that they can build their own testbeds and instruments on top of the network infrastructure. It enables frontier research on campuses within the United States, and in major national and international projects. It provides the capabilities through which individual researchers and private industry can establish testbeds to explore the feasibility of technological innovations, including the fruits of network research and developments by scientists in data-intensive fields that could be deployed more widely to support research nationwide in many disciplines and might ultimately be transferred to the broader society. It supports the creation of new organizational forms to support new modes of collaborative research and education worldwide. It provides national and international policy leadership on issues of concern to the advanced networking community.

Advanced network technology acquires greater value to its users as more and more others develop the capacity to take advantage of the network’s capabilities. For that reason, I2-NLR recognizes its responsibility to assist campuses in making the technology available as a resource for their members, even before those members appreciate the various uses to which the resource may be applied or their full impact. One example of such proactive assistance would be to develop a “paragon network” that is designed to make it easy and extremely inexpensive for newcomers to explore the power and capacities of the resource.

The challenge for I2-NLR is to serve the community as a proactive enabler of new technology in a cost effective way. In this regard, it is vital to reengage the federal government as an investor in that technology. For example, the National Science

* See Atkinson, The Case for a National Broadband Policy, <http://www.itif.org/files/CaseForNationalBroadbandPolicy.pdf>.

Foundation has historically recognized the importance of broadening our nation's participation in science, diffusing access to the benefits of technology throughout society, to those who might lack the resources to purchase that technology themselves. I2-NLR is a primary vehicle for the promotion of that goal in research and education networking.

I2-NLR is dedicated to helping the research and education community to overcome a wide range of technical and structural challenges in the field of advanced networking. These include the need to overcome traditional bottlenecks experienced in the use of national and international networks, as well as the need to deliver world-class performance in a cost effective manner.

A unified organizational voice for the research and education community can be a worthy partner with the federal government, comparable to what is found in other countries. Furthermore, it is expected that the new organizational form will enable the community to realize cost savings relative to what would exist in a two organization world, although those cost savings are more likely to come in the long term than in the short term, given the substantial precommitments that many community members have made in reliance on the existing structures.

Goals

The following are I2-NLR's highest order goals:

1. Create, maintain and evolve a regional and national networking physical infrastructure to foster the concurrent advancement of networking research and next generation network-enabled applications in science, engineering, medicine and other disciplines. Such an infrastructure should enable the implementation of multiple networks, both experimental and production, providing an environment that fosters network-based innovation.
2. Ensure connectivity, at all layers, with all of the leading research universities and research sites via partnerships with the regional networks.
3. Promote connectivity with the I2-NLR infrastructure in order to facilitate new forms of relationships with other high performance research network efforts nationally, especially with federal agencies.
4. Evolve powerful international connectivity at all appropriate layers to and among globally distributed research sites, instruments, sensors, apparatus, data archives and sources, research collaborations and other research resources.
5. Actively engage the community in the development of important new technologies, including middleware, security, network research and performance measurement capabilities, and cyberinfrastructure, which are critical to the progress of the Internet.

Operational Principles

Several operational principles guide the activities of I2-NLR:

- **Niche.** I2-NLR occupies the niche between curiosity-driven speculative research and profit-driven market activity. It strives to understand, predict, shape, and satisfy the user community's needs while users familiarize themselves with new tools and find new ways to apply them to their own environments. I2-NLR provides advanced production network capabilities for the research and education community which are differentiated from commercially available services in terms of cost, reach and advanced support services. It is an active agent for the diffusion of new technology – an advocate that can help overcome collective action problems and thereby create environments in which positive network effects exist.
- **Network Research.** I2-NLR is committed to supporting the future development and evolution of the general Internet. This evolution requires flexibility in networking architecture, technologies and protocols, which need to be driven by or in partnership with researchers. I2-NLR is committed to providing the infrastructure that enables network researchers to build their own experimental testbeds and instruments, and to facilitating their use. When these testbeds and instruments evolve from experimentation to broader use, I2-NLR will have responsibility for delivering these as services to the broad community.
- **Disciplinary Research.** I2-NLR is committed to supporting the general scientific community's exploitation of advanced networking capacity in service of human understanding and well-being. I2-NLR is committed to responding to disciplinary researchers' needs for the ability to access, process, distribute and collaboratively analyze terabyte-to-petabyte scale datasets, which rely on high speed data transport over continental and transoceanic distances. I2-NLR is working with the community, mission-oriented networks, and international partner research and education networks to develop and deliver new methods of provisioning and managing networks based on virtual circuits with bandwidth guarantees to support large data flows, to enable the exchange of these datasets, using emerging standards.
- **Dedication of Capacity.** I2-NLR provides an infrastructure that is flexible and scaleable, with the capacity to support of the entirety of the research community's needs ranging from network research and development to disciplinary research; the vast majority of that infrastructure capacity is devoted to meeting the needs of the research, education, clinical, and advanced networking community.
- **Partnerships.** I2-NLR pursues its goals through close and active partnerships:

- I2-NLR depends upon the various research communities to shape and define the organization's understanding of researchers' needs. It works closely with researchers as leaders, decision makers, and partners, in building the evolving infrastructure and customizing it to promote and facilitate their work.
- I2-NLR also partners with regional networks and with other national and international networks that serve research and education. This structure of cooperation combines traditional and emerging technologies and methods to improve and foster communication among and within campuses, acting as a facilitative community for the research activities of others. I2-NLR recognizes that all networks are first and foremost local—be they social networks or computer networks—but those local networks become infinitely more powerful when interconnected. Therefore the primary and preferred means for connecting to the I2-NLR backbone network is through regional operating networks. This three-tier model of network service delivery means that member institutions should find it more advantageous to connect to the I2-NLR backbone through such intermediate networks than to connect to the backbone directly.
- **Community Control of the Infrastructure.** I2-NLR promotes the research and education community's control over its networking infrastructure. This control is achieved operationally by combining owned capacity (with the strategic independence, control, and leverage that ownership provides) with leased capacity (with the flexibility, control, and scale economies that leasing provides). And it does so through a governance structure that vests control over the organization in the research and education community.
- **Use of the Infrastructure.** The primary commitments of I2-NLR are to serving the needs of the research, education, clinical, and advanced networking community. Consistently with those commitments, the organization will promulgate policies that enable use of the infrastructure for any lawful purpose that does not undermine I2-NLR's 501(c)(3) status or have a material adverse effect on the network or on the activities of other users.
- **Public Goods, Transparent Internal Cross-Subsidization.** I2-NLR is a nonprofit membership organization that is dedicated to the provision of a range of public goods for the research and education community, with a rigorous commitment to transparency in prioritization and internal subsidization of projects, rather than a fee-for-services organization that prices all activities as "tubs on their own bottoms." I2-NLR provides effective stewardship of community resources, maintains open books for members, encourages feedback and debate on the values of new and continuing services, and constantly is aware of the impact that financial decisions may have on its members and the research community.

- **Staff.** I2-NLR deploys an organizational staff appropriate to a production organization, together with “leased” and “borrowed” staff from its member universities and regional networks.

Values

I2-NLR is fully committed to meeting the responsibilities of leadership in the world of network technology and its application. Focused on the public good, I2-NLR is devoted to delivering value to its members. The organization aspires to be a highly-respected partner to an exceptionally diverse community of stakeholders and to provide an indispensable resource for the nation, and for the world.

AGREEMENT AND PLAN OF MERGER

BY AND BETWEEN

NATIONAL LAMBDARAIL, INC.

AND

UNIVERSITY CORPORATION FOR ADVANCED INTERNET DEVELOPMENT, INC.

_____ , 2007

TABLE OF CONTENTS

ARTICLE I.	DEFINITIONS.....	1
SECTION 1.1	DEFINITIONS.....	1
SECTION 1.2	INTERPRETATION.....	3
ARTICLE II.	THE MERGER.....	3
SECTION 2.1	THE MERGER.....	3
SECTION 2.2	THE CLOSING	3
SECTION 2.3	EFFECTIVE DATE AND TIME	3
SECTION 2.4	ARTICLES AND BYLAWS OF COMBINED CORPORATION.....	4
SECTION 2.5	BOARD OF TRUSTEES	4
SECTION 2.6	CONVERSION OF MEMBERSHIPS	4
SECTION 2.7	OFFICES	4
ARTICLE III.	REPRESENTATIONS AND WARRANTIES OF INTERNET2.....	4
SECTION 3.1	ORGANIZATION	4
SECTION 3.2	MEMBERS	5
SECTION 3.3	CHARTER DOCUMENTS; RECORDS.....	5
SECTION 3.4	AUTHORIZATION	5
SECTION 3.5	NON-CONTRAVENTION	5
SECTION 3.6	TAX-EXEMPT STATUS.....	6
SECTION 3.7	CONTRACTS WITH TRUSTEES AND OFFICERS	6
SECTION 3.8	CONTRACTS.....	6
SECTION 3.9	CONDITION OF AND TITLE TO ASSETS.....	6
SECTION 3.10	EMPLOYEE BENEFITS	6
SECTION 3.11	ENVIRONMENTAL MATTERS.....	7
SECTION 3.12	FINANCIAL STATEMENTS.....	7
SECTION 3.13	UNDISCLOSED LIABILITIES; OPERATIONS.....	8
SECTION 3.14	LEGAL COMPLIANCE.....	8
SECTION 3.15	INSURANCE	9
SECTION 3.16	EMPLOYEES	9
SECTION 3.17	REAL PROPERTY.....	9
SECTION 3.18	TAXES	9
SECTION 3.19	LITIGATION AND OTHER CLAIMS.....	9
SECTION 3.20	INTELLECTUAL PROPERTY.....	9
SECTION 3.21	SUBSIDIARIES	10
SECTION 3.22	PROVISION OF DUE DILIGENCE MATERIALS.....	10
SECTION 3.23	UNTRUE OR INACCURATE REPRESENTATIONS OR WARRANTIES.....	10
ARTICLE IV.	REPRESENTATIONS AND WARRANTIES OF NLR.....	10
SECTION 4.1	ORGANIZATION	10
SECTION 4.2	MEMBERS	11
SECTION 4.3	CHARTER DOCUMENTS; RECORDS.....	11
SECTION 4.4	AUTHORIZATION	11
SECTION 4.5	NON-CONTRAVENTION	11
SECTION 4.6	TAX-EXEMPT STATUS.....	12
SECTION 4.7	CONTRACTS WITH TRUSTEES AND OFFICERS	12
SECTION 4.8	CONTRACTS.....	12
SECTION 4.9	CONDITION OF AND TITLE TO ASSETS.....	12
SECTION 4.10	EMPLOYEE BENEFITS	12
SECTION 4.11	ENVIRONMENTAL MATTERS.....	13
SECTION 4.12	FINANCIAL STATEMENTS.....	13
SECTION 4.13	UNDISCLOSED LIABILITIES; OPERATIONS.....	14
SECTION 4.14	LEGAL COMPLIANCE.....	14

SECTION 4.15	INSURANCE	14
SECTION 4.16	EMPLOYEES	15
SECTION 4.17	REAL PROPERTY	15
SECTION 4.18	TAXES	15
SECTION 4.19	LITIGATION AND OTHER CLAIMS	15
SECTION 4.20	INTELLECTUAL PROPERTY	15
SECTION 4.21	SUBSIDIARIES	16
SECTION 4.22	PROVISION OF DUE DILIGENCE MATERIALS	16
SECTION 4.23	UNTRUE OR INACCURATE REPRESENTATIONS OR WARRANTIES	16
ARTICLE V.	PRE-CLOSING COVENANTS	16
SECTION 5.1	COMPLIANCE WITH LAWS	16
SECTION 5.2	NO ORGANIZATIONAL CHANGE	16
SECTION 5.3	CONDUCT OF BUSINESS IN ORDINARY COURSE	16
SECTION 5.4	MAINTENANCE OF ASSET, PERMITS AND LICENSES	16
SECTION 5.5	MAINTENANCE OF BOOKS AND RECORDS	17
SECTION 5.6	INSURANCE POLICIES	17
SECTION 5.7	CONTRACTS	17
SECTION 5.8	COMPENSATION	17
SECTION 5.9	BORROWING	17
SECTION 5.10	ACCESS TO INFORMATION	17
SECTION 5.11	CONSENTS	17
SECTION 5.12	INTERNET2 DISCLOSURE SCHEDULE	18
SECTION 5.13	NLR DISCLOSURE SCHEDULE	18
SECTION 5.14	EXECUTIVE MANAGEMENT SEARCH	19
SECTION 5.15	EMPLOYEE MATTERS	19
ARTICLE VI.	CONDITIONS TO CLOSING	19
SECTION 6.1	CONDITIONS TO CLOSING	19
SECTION 6.2	ADDITIONAL CONDITIONS TO CLOSING	21
ARTICLE VII.	SURVIVAL; TERMINATION	22
SECTION 7.1	SURVIVAL	22
SECTION 7.2	TERMINATION	22
SECTION 7.3	EFFECT OF TERMINATION	22
ARTICLE VIII.	GENERAL PROVISIONS	23
SECTION 8.1	FEES AND EXPENSES	23
SECTION 8.2	ENTIRE AGREEMENT; WAIVERS	23
SECTION 8.3	AMENDMENT	23
SECTION 8.4	COUNTERPARTS	23
SECTION 8.5	ASSIGNMENT	23
SECTION 8.6	GOOD FAITH	23
SECTION 8.7	APPLICABLE LAW	23
SECTION 8.8	SEVERABILITY	23
SECTION 8.9	ANNOUNCEMENTS AND PRESS RELEASES	24

AGREEMENT AND PLAN OF MERGER

This AGREEMENT AND PLAN OF MERGER (this “Agreement”) is made and entered into, effective as of _____, 2007, by and between NATIONAL LAMBDA RAIL, INC., a Delaware nonstock corporation (“NLR”), and the UNIVERSITY CORPORATION FOR ADVANCED INTERNET DEVELOPMENT, INC., a District of Columbia nonprofit corporation (“Internet2”). Each of NLR and Internet2 is referred to herein as a “Party” and collectively as the “Parties.”

RECITALS:

A. NLR is a duly formed Delaware nonstock corporation organized and operated to advance the research, clinical, and educational goals of its members and other institutions by establishing and maintaining a unique, nationwide network infrastructure that is owned and controlled by the U.S. research community.

B. Internet2 is a duly formed District of Columbia nonprofit corporation comprised of universities working in collaboration with industry and government to develop and deploy advanced network applications and technologies, accelerating the creation of tomorrow's Internet.

C. The board of directors of NLR and the board of trustees of Internet2 have determined that a merger of their respective organizations, whereby NLR is merged into Internet2 (the “Combined Corporation”), would facilitate the accomplishment of a number of objectives, further their exempt purposes and activities, and represents a joint commitment to their strategic missions and visions.

D. This Agreement sets forth the terms and conditions on which the Merger is to be consummated.

AGREEMENT:

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and subject to the terms and conditions hereof, the Parties agree as follows:

ARTICLE I. DEFINITIONS

Section 1.1 Definitions. In addition to terms defined elsewhere in this Agreement, as used herein, and unless the context clearly indicates another meaning, the following words and phrases shall have the meanings set forth below:

“Code” means the Internal Revenue Code of 1986, as amended, and the regulations, rulings and court decisions promulgated thereunder and pertaining thereto.

“DC Act” means the District of Columbia Nonprofit Corporation Act.

“DGCL” means the Delaware General Corporation Law.

“Execution Date” means the date first above written.

“GAAP” means U.S. generally accepted accounting principles, consistently applied from year to year with respect to the financial statements of a Person.

“Governmental Body” means any: (a) nation, principality, state, commonwealth, province, territory, county, municipality, district, or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign, or other government; (c) governmental or quasi-governmental authority of any nature; (d) multi-national organization or body; (e) individual, entity, or body exercising, or entitled to exercise, any executive, legislative, judicial, administrative, regulatory, police, military, or taxing authority or power of any nature; or (f) arbitrator or arbitration panel.

“IRS” means the Internal Revenue Service.

“Knowledge” means, with respect to any Party, the knowledge of the executive officers and directors of such Party after due and reasonable inquiry including the facts of which they, in the reasonably prudent exercise of their duties should be aware.

“Legal Requirement” means any federal, state, local, municipal, foreign, or other law, statute, legislation, constitution, principle of common law, resolution, ordinance, code, edict, decree, proclamation, treaty, convention, rule, regulation, ruling, directive, pronouncement, requirement, specification, determination, decision, opinion, or interpretation issued, enacted, adopted, passed, approved, promulgated, made, implemented, or otherwise put into effect by or under the authority of any Governmental Body.

“Material Adverse Effect” or “Material Adverse Change” means a material adverse effect on or change in, as applicable, the business, property, assets, tax-exempt status, or financial condition of a Party.

“Member” means a voting member of Internet2 or a member (whether voting or otherwise) of NLR, as the case may be.

“Order” means any: (a) order, judgment, injunction, edict, decree, ruling, pronouncement, determination, decision, opinion, verdict, sentence, subpoena, writ, or award issued, made, entered, rendered, or otherwise put into effect by or under the authority of any Governmental Body; or (b) contract with any Governmental Body entered into in connection with any proceeding.

“Person” means any individual, corporation, company, partnership, association, estate, or trust.

“Related Document” means any exhibit, schedule, certificate, notice, or other written instrument or document furnished or to be furnished in connection with this Agreement.

“Security Interest” means any mortgage, pledge, lien, charge, hypothecation, encumbrance, equity, trust, equitable interest, claim, preference, right of possession, lease, tenancy, license, encroachment, interference, option, right of first refusal, pre-emptive right, community property interest, legend, defect, impediment, exception, reservation, limitation,

impairment, imperfection of title, condition or restriction of any nature, other than (a) mechanic's, materialmen's, and similar liens incurred in the ordinary course of business not yet due and payable, (b) liens for taxes not yet due and payable, (c) purchase money liens and liens securing rental payments under capital lease arrangements, and (d) other liens arising in the ordinary course of business and not incurred in connection with the borrowing of money.

Section 1.2 Interpretation. With reference to this Agreement and each other Related Document, unless otherwise specified herein or in such other Related Document, (a) the meanings of defined terms are equally applicable to the singular and plural forms of the defined terms, (b) the words "herein" and "hereunder" and words of similar import when used in this Agreement or any Related Document shall refer to this Agreement or such Related Document as a whole and not to any particular provision thereof, (c) the term "including" is by way of example and not limitation, (d) in the computation of periods of time from a specified date to a later specified date, the word "from" means "from and including;" the words "to" and "until" each mean "to but excluding" and the word "through" means "to and including," and (e) words of one gender shall be deemed to include the other genders as appropriate.

ARTICLE II. THE MERGER

Section 2.1 The Merger. Upon the terms and conditions hereof, (i) at the Effective Time, NLR shall be merged (the "Merger") with and into Internet2 and (ii) from and after the Effective Time, the Merger shall have the effects set forth in this Agreement and all effects of a merger under the laws of the District of Columbia and Delaware.

Section 2.2 The Closing. Subject to the terms and conditions of this Agreement, the closing of the Merger (the "Closing") shall take place on a date designated by the Parties (the "Closing Date") as soon as practicable after the satisfaction or waiver of the conditions (other than those conditions that by their nature are to be satisfied at Closing) set forth in Article VI and at such time and location as the Parties may agree. At the Closing, (a) the Parties will deliver to each other the various certificates, instruments, and documents referred to in Article VI below; (b) Internet2 will execute, acknowledge (if appropriate), and deliver to NLR such documents as NLR and its counsel reasonably may request; (c) NLR will execute, acknowledge (if appropriate), and deliver to Internet2 such documents as Internet2 and its counsel reasonably may request; and (d) the Parties will cause the agreements and other instruments identified and/or attached as Exhibit 2.2 to be executed and delivered by the parties thereto.

Section 2.3 Effective Date and Time. On the Closing Date and subject to the terms and conditions hereof, the Parties hereto shall cause (a) the Articles of Merger in the form attached as Exhibit 2.3(a) (the "Articles of Merger") complying with the applicable provisions of the DC Act, to be properly executed and filed with the Mayor of the District of Columbia (the "Mayor") and (b) the Certificate of Merger in the form attached as Exhibit 2.3(b) (the "Certificate of Merger") complying with the applicable provisions of the DGCL to be filed with the Secretary of State of the State of Delaware (the "Delaware Secretary"). The Merger shall become effective (the "Effective Time") at 12:00.01 a.m. on the Business Day following the Closing Date.

Section 2.4 Articles and Bylaws of Combined Corporation. At the Effective Time, the articles of incorporation of Internet2 shall be the articles of incorporation of the Combined Corporation (the “Articles”) and the bylaws of the Combined Corporation shall be amended and restated in their entirety in the form attached as Exhibit 2.4 (the “Bylaws”). Thereafter, the Articles and Bylaws may be amended or repealed in accordance with their terms and as provided by law.

Section 2.5 Board of Trustees. At the Effective Time, the appointments as trustees of the board of trustees of the Combined Corporation of each of the individuals listed on the attached Exhibit 2.5(a) shall become effective, and such trustees shall hold office in accordance with and subject to the Articles and the Bylaws. At the Effective Time, the appointments as officers of the Board of each of the individuals listed on the attached Exhibit 2.5(b) to the offices identified on the attached Exhibit 2.5(b) shall become effective, and such officers shall hold office in accordance with and subject to the Articles and the Bylaws. At the Effective Time, the appointments as members of the Governance and Nominating Committee of the Combined Corporation and the members of the Advisory Councils of the Combined Corporation of the individuals listed on the attached Exhibit 2.5(c) shall become effective, and such committee and council members shall hold office in accordance with and subject to the Articles and Bylaws.

Section 2.6 Conversion of Memberships. As of the Effective Time, by virtue of the Merger and without any action on the part of the holders thereof, each membership held by Members of NLR shall be converted into a membership in the Combined Corporation as set forth on the attached Exhibit 2.6. Each membership held by the Members of Internet2 shall continue to be a membership interest in the Combined Corporation of the same class as prior to the Merger.

Section 2.7 Offices. Following the Effective Time, the chief executive office of the Combined Corporation shall be located at 1000 Oakbrook Drive, Suite 300, Ann Arbor, Michigan. Such office may be changed following the Effective Time in accordance with the Bylaws.

ARTICLE III. REPRESENTATIONS AND WARRANTIES OF INTERNET2

Internet2 represents and warrants to NLR that the statements contained in this Article III, except as specified to the contrary in the disclosure schedule prepared by Internet2 (the “Internet2 Disclosure Schedule”), which is attached as Exhibit 3, are true and correct as of the date hereof except to the extent such representations and warranties are specifically made as of a particular date (in which case such representations and warranties are true and correct as of such date). The Internet2 Disclosure Schedule shall be arranged in paragraphs corresponding to the lettered and numbered paragraphs in this Article III, and the disclosures in any such lettered and numbered paragraph of the Internet2 Disclosure Schedule shall qualify only the corresponding lettered and numbered paragraph this Article III.

Section 3.1 Organization. Internet2 is a nonprofit corporation duly organized, validly existing, and in good standing under the laws of the District of Columbia. Internet2 has all requisite power and authority: to conduct its business as presently conducted; to own, operate, and lease its assets and properties; to execute, deliver, and perform all its obligations under this

Agreement and the Related Documents to which it is or will be a party; and to carry out the Merger. Internet2 is qualified or licensed to conduct its business and is in good standing in each jurisdiction where the nature of its activities or where the character of its property make such qualification or licensing necessary to conduct its business or maintain its rights and privileges, except where the lack of such qualification or license would not have a Material Adverse Effect.

Section 3.2 Members. The current Members and non-voting members of Internet2 are as listed on Section 3.2 of the Internet2 Disclosure Schedule and there are no other Members or non-voting members of Internet2.

Section 3.3 Charter Documents; Records. Internet2 has delivered to NLR accurate and complete copies of:

- (a) Internet2's Articles of Incorporation and Bylaws, including all amendments thereto;
- (b) Internet2's certificate(s) of authority to do business as a foreign corporation in those jurisdictions where it is doing business as a foreign corporation;
- (c) The minutes and other records of the meetings and other proceedings of Internet2's board of trustees and Members since _____, and all committees and Advisory Councils of the board of trustees of Internet2 since _____;
- (d) Internet2's IRS determination letter, its application for recognition of exemption under Section 501(c)(3) (IRS Form 1023), as filed with the IRS, and its federal tax returns (IRS Form 990) for the last three (3) years.

Section 3.4 Authorization. The board of trustees of Internet2 has duly authorized the execution, delivery, and performance of this Agreement by Internet2. This Agreement constitutes a valid and legally binding obligation of Internet2, enforceable in accordance with its terms and conditions, except as limited by (a) applicable bankruptcy, insolvency, reorganization, moratorium, and other laws of general application affecting the enforcement of creditors' rights generally and (b) general principles of equity, regardless of whether asserted in a proceeding in equity or at law. Internet2 need not give any notice to, make any filing with, or obtain any authorization, consent, or approval of any Governmental Body in order for the Parties to consummate the transactions contemplated by this Agreement.

Section 3.5 Non-Contravention. Neither the execution nor the delivery of this Agreement, nor the consummation of the transactions contemplated hereby, will (a) violate any Legal Requirement or Order to which Internet2 is subject or any provision of the constating documents, board resolutions or Member resolutions of Internet2, or (b) conflict with, result in a violation of, result in a breach of, constitute a default under, result in the acceleration of, create in any party the right to accelerate, terminate, modify, or cancel, or require any notice under any agreement, contract, lease, license, instrument, or other arrangement to which Internet2 is a party or by which it is bound or to which any of its assets is subject (or result in the imposition of any Security Interest upon any of its assets), or (c) give any Governmental Body or other Person the right to challenge this Agreement or any of the transactions contemplated hereby or to exercise

any remedy or obtain any relief under any Legal Requirement or any Order to which Internet2 or any of its assets are subject.

Section 3.6 Tax-Exempt Status. Internet2 is an organization described in Section 501(c)(3) of the Code, exempt from federal income tax under Section 501(a) of the Code, except with respect to unrelated business taxable income, and is classified as a public charity pursuant to Section 509(a)(1) of the Code. Internet2 has not received any indication or notice, written or oral, from representatives of the IRS to the effect that its exemption under Section 501(c)(3) of the Code has been revoked or modified, or that the IRS is considering revoking or modifying such exemption. Internet2 has no reason or cause to believe that the IRS will revoke or modify its tax exemption and its exemption under Section 501(c)(3) of the Code is in full force and effect.

Section 3.7 Contracts with Trustees and Officers. There are no contracts, agreements, options, commitments, instruments, or plans, oral or written, in which a trustee or an officer of Internet2 (or family member thereof) has or may have a financial interest by which goods, equipment, or services are provided, leased, or rendered, or are to be provided, leased, or rendered to Internet2.

Section 3.8 Contracts. Section 3.8(a) of the Internet2 Disclosure Schedule sets forth a full and complete list of all written and oral contracts, grants, agreements concerning a partnership or joint venture, and other commitments of Internet2 (“Internet2 Contracts”), except for the following: (a) purchase orders issued by Internet2 in the ordinary course of business for less than \$ _____; (b) other agreements involving a maximum possible liability or obligation on the part of Internet2 of less than \$ _____, and (c) software license agreements covering off-the-shelf software. Internet2 has delivered to NLR true and correct copies of all written Internet2 Contracts with all amendments thereto and true and complete summaries of all oral Internet2 Contracts. Internet2 is not in breach or violation of, or in default under, any of the Internet2 Contracts. Internet2 has acted in good faith with respect to the performance of its obligations under the Internet2 Contracts. The execution and delivery of this Agreement and the Related Documents and the consummation of the transactions contemplated hereby and thereby will not give rise to any consent requirement under any of the Internet2 Contracts. No party to any of the Internet2 Contracts has given Internet2 notice of its intention to cancel, terminate, or fail to renew any such Internet2 Contract. Section 3.8(b) of the Internet2 Disclosure Schedule sets forth a full and complete list of all Internet2 Contracts that are associated in whole or in part with Internet2’s network and have terms extending beyond June 30, 2009 (the “Extended Term Internet2 Contracts”).

Section 3.9 Condition of and Title to Assets. Internet2 has, and upon consummation of the transactions contemplated by this Agreement, the Combined Corporation will have, good and marketable title to all of the operating assets and equipment held by Internet2 as of the Effective Time, free and clear of any and all Security Interests of any kind or character.

Section 3.10 Employee Benefits. Section 3.10 of the Internet2 Disclosure Schedule contains a current and complete list of all written or oral employee medical, dental, insurance, retirement, and benefit plans (“Plan(s)”) under Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”) or similar arrangements to which Internet2 or any

entity required under Section 414(b), (c) or (m) of the Code (an “ERISA Affiliate”) to be aggregated with Internet2, is a party, is bound, to which any of them contributes, or which any of them sponsors. Each Plan complies, and has from its inception complied, in all material respects with all applicable requirements of ERISA, the Code, other laws, and regulations (including those pertaining to group health plans), and the agreements and documents governing such Plans. Internet2 and each ERISA Affiliate of Internet2 have performed all of their obligations under all Plans. Each Plan intended to qualify under Code Sections 401(a) and 501(a) has received a favorable determination letter from the IRS, and no event has occurred that could cause disqualification of any such Plan. With respect to each Plan that is an “employee benefit plan” under ERISA Section 3(3) or a “plan” under Code Section 4975(e)(1), no “prohibited transaction” (under Code Section 4975(c)(1) or ERISA Section 406) has occurred, or will occur, as a result of the transactions contemplated under this Agreement. Neither Internet2 nor any ERISA Affiliate of Internet2 is or ever has been a party to any Plan which is (i) a multiemployer plan under ERISA Section 4001(a)(3) (“Multiemployer Plan”), or (ii) an employee pension benefit plan under ERISA Section 3(2) that is subject to Title IV, Section 302 or Section 412 of ERISA (“Pension Plan”). There are no investigations, claims, lawsuits, or actions (other than routine claims for benefits) pending or threatened by any third party or any Governmental Body against any Plans or their assets or arising out of such Plans or against any fiduciary of the Plans and, to the Knowledge of Internet2, no facts exist which could give rise to any such actions.

Section 3.11 Environmental Matters. To its Knowledge, Internet2 is not in violation of any applicable statute, law, or regulation relating to the environment or occupational health and safety, and to its Knowledge, no material expenditures are or will be required in order to comply with any such existing statute, law or regulation. Internet2 has not received, at any time, any notice or other communication in writing or otherwise from any Governmental Body or any other Person regarding any actual, alleged, possible, or potential obligation on the part of Internet2 to undertake or bear all or any portion of the cost of, any cleanup or remedial, corrective or response action of any nature.

Section 3.12 Financial Statements.

(a) Internet2 has provided NLR with copies of the Internet2 audited financial statements for the fiscal years ended as of December 31, 2004 and December 31, 2005, and either audited or unaudited financial statements for the fiscal year ended December 31, 2006, and unaudited financial statements for the _____ month period ended _____, 2007 (collectively, the “Internet2 Financial Statements”).

(b) Each of the Internet2 Financial Statements is true, correct, complete, and consistent with the books and records of Internet2. Each of the Internet2 Financial Statements has been prepared in accordance with GAAP and presents fairly in all material respects the financial condition and results of operations and cash flows of Internet2 at the dates and for the periods specified, subject, in the case of unaudited financial statements, to the absence of notes and the absence of normal recurring year-end adjustments and procedures (none of which require material adjustment or are inconsistent with past practice).

(c) Internet2 is not directly or indirectly liable to or obligated to provide funds in respect of or to guaranty or assume any obligation of any Person except to the extent reflected

and fully reserved against in the Internet2 Financial Statements. Except as set forth in the Internet2 Financial Statements, all liabilities of Internet2 can be prepaid without penalty at any time.

(d) The loans, notes, and accounts receivable reflected in the Internet2 Financial Statements and all such loans, notes, and accounts receivable arising after the applicable dates of the Internet2 Financial Statements arose, and have arisen, from bona fide transactions and are fully collectible in excess of the bad debt reserves established in connection with such loans, notes and accounts.

Section 3.13 Undisclosed Liabilities; Operations

(a) Internet2 has no liability of any nature, whether known or unknown, accrued, absolute, contingent or otherwise, except for liabilities set forth on the face of the Internet2 Financial Statements, and liabilities which have arisen after December 31, 2006, in the ordinary course of business (none of which results from, arises out of, or was caused by any breach of contract, breach of warranty claims, product liability, tort, infringement, or violation of any applicable Requirements of Law). Since December 31, 2006, Internet2 has conducted its business and operations only in the ordinary course consistent with past practice, and there has not been (a) any Material Adverse Change in Internet2; (b) any granting by Internet2 to any current or former trustee, executive officer or other employee of Internet2 of any increase in compensation, bonus or other benefits, except for normal increases in cash compensation in the ordinary course of business, or entry by Internet2 into, or any amendments of, any employment, deferred compensation, consulting, severance, termination or indemnification agreement with any such current or former trustee, executive officer or employee or any employee benefit plan; (c) any damage, destruction or loss, whether or not covered by insurance, that individually or in the aggregate is reasonably likely to have a Material Adverse Effect on Internet2; (d) except insofar as may have been required by a change in GAAP, any change in accounting methods, principles or practices by Internet2 materially affecting its reported financial condition or results of operation; (e) any sale or disposition of assets or properties, except in the ordinary course of business; (f) any borrowing of funds, except in the ordinary course of business; or (g) the execution and delivery of any contract or agreement that would commit the Combined Corporation to significant financial obligations following the Merger.

Section 3.14 Legal Compliance. Internet2 now holds all licenses, certificates, approvals, and permits from all Governmental Bodies that are material to the conduct of the business of Internet2, as applicable, except for such licenses, certificates, approvals, and permits the failure of which to hold would not have a Material Adverse Effect on the business of Internet2, as applicable, and all such licenses, certificates, approvals, and permits are valid and in full force and effect. Internet2 is not in violation of any Legal Requirement or Order, including, but not limited to, any laws governing political contributions. To the Knowledge of Internet2, no event has occurred and no condition or circumstance exists, that might, with or without notice or lapse of time, constitute or result directly or indirectly in a material violation by Internet2, or a failure on the part of Internet2, to comply with any Legal Requirement or Order, and Internet2 has not received, at any time, any notice or other communication in writing or otherwise from any Governmental Body or any other Person regarding any actual, alleged, or potential violation of, or failure to comply with, any Legal Requirement or Order.

Section 3.15 Insurance. Section 3.15 of the Internet2 Disclosure Schedule sets forth a complete and accurate list of all insurance policies held by Internet2. Such insurance is in full force and effect and all of the assets, operations, and activities of Internet2 that are of an insurable nature are and have been continuously insured with adequate types and amounts of insurance since their inception. With respect to each policy, Internet2: (a) is not delinquent with respect to any premium payment; (b) is not in default or breach; (c) has not failed to give notice of or to present a claim in a timely fashion; and (d) does not have any Knowledge and has not received any written or oral, formal or informal, notice identifying any defects in any asset that would adversely affect its insurability.

Section 3.16 Employees. Section 3.16 of the Internet2 Disclosure Schedule contains a complete list of the names, job titles, current wage or salary, and benefits of all Internet2's current employees. All such employees are or have been employed solely by Internet2. Internet2 is not a party to any employment agreement or any agreement (written or oral) relating to a bonus, severance pay or similar plan, arrangement, or understanding.

Section 3.17 Real Property. Internet2 does not own any real property. A list of Internet2's contracts relating to any real property it leases is set forth in Section 3.17 of the Internet2 Disclosure Schedule.

Section 3.18 Taxes. Internet2 has filed or caused to be filed all federal, state, and local annual reports and returns which are required to be filed and has paid all taxes shown to be due and payable on said annual reports and returns or on any assessments made against it, except for returns which have been appropriately extended, and, all other taxes, fees or other charges imposed on it by any Governmental Body which have become due and payable (other than those the amount or validity of which is currently being contested in good faith by appropriate proceedings) and no tax liens have been filed against Internet2.

Section 3.19 Litigation and other Claims. With respect to each of (i) Internet2, (ii) Internet2's officers and trustees (in their capacities as such), and (iii) Internet2's properties, assets, and operations:

- (a) There is no claim, action, suit, proceeding, litigation, grievance procedure, arbitration, or investigation pending or, to the Knowledge of Internet2, threatened, and no basis therefore;
- (b) They are not subject to any Order; and
- (c) They are not in default under any Order or any license, regulation, or demand of any Governmental Body.

Section 3.20 Intellectual Property.

(a) To its Knowledge, Internet2 owns or possesses sufficient legal rights to all patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, and other proprietary rights and processes necessary for its business as now conducted and as presently proposed to be conducted, without any conflict with or infringement of the rights of others. There are no outstanding options, licenses, or agreements of any kind relating to the

foregoing proprietary rights, nor is Internet2 bound by, or a party to, any options, licenses, or agreements of any kind with respect to the patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, or other proprietary rights and processes of any other Person or entity other than such licenses or agreements arising from the purchase of “off the shelf” or standard products.

(b) Internet2 has not received any communications alleging that Internet2 has violated or, by conducting its business as presently proposed to be conducted, would violate any of the patents, trademarks, service marks, trade names, copyrights, trade secrets, or other proprietary rights of any other Person or entity.

(c) To the Knowledge of Internet2, none of its employees is obligated under any covenant not to compete, contract (including licenses, covenants, or commitments of any nature) or other agreement, or subject to any Order, that would interfere with their duties to Internet2 or that would conflict with Internet2’s business as presently proposed to be conducted.

Section 3.21 Subsidiaries. Internet2 does not own or control any other corporations, limited liability companies, partnerships, and other business organizations.

Section 3.22 Provision of Due Diligence Materials. Internet2 has provided all documents requested by NLR or its representatives and has not omitted any material document so requested. Internet2 has provided NLR’s representatives full and complete access to all of Internet2’s records and other documents and data.

Section 3.23 Untrue or Inaccurate Representations or Warranties. The representations and warranties of Internet2 in this Article III, and each exhibit, certificate, or other written statement delivered pursuant to this Agreement, are accurate, correct, and complete, and do not contain any untrue statement of material fact or fail to state a fact necessary to make a statement therein not misleading.

ARTICLE IV. REPRESENTATIONS AND WARRANTIES OF NLR

NLR represents and warrants to Internet2 that the statements contained in this Article IV, except as specified to the contrary in the disclosure schedule prepared by NLR (the “NLR Disclosure Schedule”), which is attached as Exhibit 4, are true and correct as of the date hereof except to the extent such representations and warranties are specifically made as of a particular date (in which case such representations and warranties are true and correct as of such date). The NLR Disclosure Schedule shall be arranged in paragraphs corresponding to the lettered and numbered paragraphs in this Article IV, and the disclosures in any such lettered and numbered paragraph of the NLR Disclosure Schedule shall qualify only the corresponding lettered and numbered paragraph this Article IV.

Section 4.1 Organization. NLR is a nonstock corporation duly organized, validly existing, and in good standing under the laws of the State of Delaware. NLR has all requisite power and authority: to conduct its business as presently conducted; to own, operate, and lease its assets and properties; to execute, deliver, and perform all its obligations under this Agreement and the Related Documents to which it is or will be a party; and to carry out the Merger. NLR is qualified or licensed to conduct its business and is in good standing in each jurisdiction where

the nature of its activities or where the character of its property make such qualification or licensing necessary to conduct its business or maintain its rights and privileges, except where the lack of such qualification or license would not have a Material Adverse Effect.

Section 4.2 Members. The current Members of NLR are as listed on Section 4.2 of the NLR Disclosure Schedule and there are no other Members of NLR.

Section 4.3 Charter Documents; Records. NLR has delivered to Internet2 accurate and complete copies of:

- (a) NLR's Certificate of Incorporation and Bylaws, including all amendments thereto;
- (b) NLR's certificate(s) of authority to do business as a foreign corporation in those jurisdictions where it is doing business as a foreign corporation;
- (c) The minutes and other records of the meetings and other proceedings of NLR's board of directors and Members since formation, and all committees of the board of directors of NLR since formation;
- (d) NLR's IRS determination letter, its application for recognition of exemption under Section 501(c)(3) (IRS Form 1023), as filed with the IRS, and its federal tax returns (IRS Form 990) for the last three (3) years.

Section 4.4 Authorization. The board of directors of NLR has duly authorized the execution, delivery, and performance of this Agreement by NLR. This Agreement constitutes a valid and legally binding obligation of NLR, enforceable in accordance with its terms and conditions, except as limited by (a) applicable bankruptcy, insolvency, reorganization, moratorium, and other laws of general application affecting the enforcement of creditors' rights generally, and (b) general principles of equity, regardless of whether asserted in a proceeding in equity or at law. NLR need not give any notice to, make any filing with, or obtain any authorization, consent, or approval of any Governmental Body in order for the Parties to consummate the transactions contemplated by this Agreement.

Section 4.5 Non-Contravention. Neither the execution nor the delivery of this Agreement, nor the consummation of the transactions contemplated hereby, will (a) violate any Legal Requirement or Order to which NLR is subject or any provision of the constating documents, board resolutions or Member resolutions of NLR, or (b) conflict with, result in a violation of, result in a breach of, constitute a default under, result in the acceleration of, create in any party the right to accelerate, terminate, modify, or cancel, or require any notice under any agreement, contract, lease, license, instrument, or other arrangement to which NLR is a party or by which it is bound or to which any of its assets is subject (or result in the imposition of any Security Interest upon any of its assets), or (c) give any Governmental Body or other Person the right to challenge this Agreement or any of the transactions contemplated hereby or to exercise any remedy or obtain any relief under any Legal Requirement or any Order to which NLR or any of its assets are subject.

Section 4.6 Tax-Exempt Status. NLR is an organization described in Section 501(c)(3) of the Code, exempt from federal income tax under Section 501(a) of the Code, except with respect to unrelated business taxable income, and is classified as a public charity pursuant to Section 509(a)(1) of the Code. NLR has not received any indication or notice, written or oral, from representatives of the IRS to the effect that its exemption under Section 501(c)(3) of the Code has been revoked or modified, or that the IRS is considering revoking or modifying such exemption. NLR has no reason or cause to believe that the IRS will revoke or modify its tax exemption and its exemption under Section 501(c)(3) of the Code is in full force and effect.

Section 4.7 Contracts with Trustees and Officers. There are no contracts, agreements, options, commitments, instruments, or plans, oral or written, in which a director or an officer of NLR (or family member thereof) has or may have a financial interest by which goods, equipment, or services are provided, leased, or rendered, or are to be provided, leased, or rendered to NLR.

Section 4.8 Contracts. Section 4.8(a) of the NLR Disclosure Schedule sets forth a full and complete list of all written and oral contracts, grants, and other commitments of NLR (“NLR Contracts”), except for the following: (a) purchase orders issued by NLR in the ordinary course of business for less than \$_____ ; (b) other agreements involving a maximum possible liability or obligation on the part of NLR of less than \$_____, and (c) software license agreements covering off-the-shelf software. NLR has delivered to NLR true and correct copies of all written NLR Contracts with all amendments thereto and true and complete summaries of all oral NLR Contracts. NLR is not in breach or violation of, or in default under, any of the NLR Contracts. NLR has acted in good faith with respect to the performance of its obligations under the NLR Contracts. The execution and delivery of this Agreement and the Related Documents and the consummation of the transactions contemplated hereby and thereby will not give rise to any consent requirement under any of the NLR Contracts. No party to any of the NLR Contracts has given NLR notice of its intention to cancel, terminate, or fail to renew any such NLR Contract. Section 4.8(b) of the NLR Disclosure Schedule sets forth a full and complete list of all NLR Contracts that are associated in whole or in part with NLR’s network and have terms extending beyond June 30, 2009 (the “Extended Term NLR Contracts”). Section 4.8(c) of the NLR Disclosure Schedule sets forth a full and complete list of all NLR membership agreements (the “NLR Membership Agreements”).

Section 4.9 Condition of and Title to Assets. NLR has, and upon consummation of the transactions contemplated by this Agreement, the Combined Corporation will have, good and marketable title to all of the operating assets and equipment held by NLR as of the Effective Time, free and clear of any and all Security Interests of any kind or character.

Section 4.10 Employee Benefits. Section 4.10 of the NLR Disclosure Schedule contains a current and complete list of all written or oral Plans to which NLR or any ERISA Affiliate of NLR is a party, is bound, to which any of them contributes, or which any of them sponsors. Each Plan complies, and has from its inception complied, in all material respects with all applicable requirements of ERISA, the Code, other laws, and regulations (including those pertaining to group health plans), and the agreements and documents governing such Plans. NLR and each ERISA Affiliate of NLR have performed all of their obligations under all Plans. Each Plan intended to qualify under Code Sections 401(a) and 501(a) has received a favorable

determination letter from the IRS, and no event has occurred that could cause disqualification of any such Plan. With respect to each Plan that is an “employee benefit plan” under ERISA Section 3(3) or a “plan” under Code Section 4975(e)(1), no “prohibited transaction” (under Code Section 4975(c)(1) or ERISA Section 406) has occurred, or will occur, as a result of the transactions contemplated under this Agreement. Neither NLR nor any ERISA Affiliate of NLR is or ever has been a party to any Plan which is (i) a Multiemployer Plan, or (ii) a Pension Plan. There are no investigations, claims, lawsuits, or actions (other than routine claims for benefits) pending or threatened by any third party or any Governmental Body against any Plans or their assets or arising out of such Plans or against any fiduciary of the Plans and, to the Knowledge of NLR, no facts exist which could give rise to any such actions.

Section 4.11 Environmental Matters. To its Knowledge, NLR is not in violation of any applicable statute, law, or regulation relating to the environment or occupational health and safety, and to its Knowledge, no material expenditures are or will be required in order to comply with any such existing statute, law or regulation. NLR has not received, at any time, any notice or other communication in writing or otherwise from any Governmental Body or any other Person regarding any actual, alleged, possible, or potential obligation on the part of NLR to undertake or bear all or any portion of the cost of, any cleanup or remedial, corrective or response action of any nature

Section 4.12 Financial Statements.

(a) NLR has provided Internet2 with copies of the Internet2 audited financial statements for the fiscal years ended as of December 31, 2004 and December 31, 2005, and audited financial statements for the fiscal year ended December 31, 2006, and unaudited financial statements for the __ month period ended _____, 2007 (collectively, the “NLR Financial Statements”).

(b) Each of the NLR Financial Statements is true, correct, complete, and consistent with the books and records of NLR. Each of the NLR Financial Statements has been prepared in accordance with GAAP and presents fairly in all material respects the financial condition and results of operations and cash flows of NLR at the dates and for the periods specified, subject, in the case of unaudited financial statements, to the absence of notes and the absence of normal recurring year-end adjustments and procedures (none of which require material adjustment or are inconsistent with past practice).

(c) NLR is not directly or indirectly liable to or obligated to provide funds in respect of or to guaranty or assume any obligation of any Person except to the extent reflected and fully reserved against in the NLR Financial Statements. Except as set forth in the NLR Financial Statements, all liabilities of NLR can be prepaid without penalty at any time.

(d) The loans, notes, and accounts receivable reflected in the NLR Financial Statements and all such loans, notes, and accounts receivable arising after the applicable dates of the NLR Financial Statements arose, and have arisen, from bona fide transactions, and are fully collectible in excess of the bad debt reserves established in connection with such loans, notes and accounts receivable.

Section 4.13 Undisclosed Liabilities; Operations. NLR has no liability of any nature, whether known or unknown, accrued, absolute, contingent or otherwise, except for liabilities set forth on the face of the NLR Financial Statements, and liabilities which have arisen after December 31, 2006, in the ordinary course of business (none of which results from, arises out of, or was caused by any breach of contract, breach of warranty claims, product liability, tort, infringement, or violation of any applicable Requirements of Law). Since December 31, 2006, NLR has conducted its business and operations only in the ordinary course consistent with past practice, and there has not been (a) any Material Adverse Change in NLR; (b) any granting by NLR to any current or former director, executive officer or other employee of NLR of any increase in compensation, bonus or other benefits, except for normal increases in cash compensation in the ordinary course of business, or entry by NLR into, or any amendments of, any employment, deferred compensation, consulting, severance, termination or indemnification agreement with any such current or former director, executive officer or employee or any employee benefit plan; (c) any damage, destruction or loss, whether or not covered by insurance, that individually or in the aggregate is reasonably likely to have a Material Adverse Effect on NLR; (d) except insofar as may have been required by a change in GAAP, any change in accounting methods, principles or practices by NLR materially affecting its reported financial condition or results of operation; (e) any sale or disposition of assets or properties, except in the ordinary course of business; (f) any borrowing of funds, except in the ordinary course of business; or (g) the execution and delivery of any contract or agreement that would commit the Combined Corporation to significant financial obligations following the Merger.

Section 4.14 Legal Compliance. NLR holds all licenses, certificates, approvals, and permits from all Governmental Bodies that are material to the conduct of the business of NLR (as such business is currently conducted), except for such licenses, certificates, approvals, and permits the failure of which to hold would not have a Material Adverse Effect on the business of NLR, and all such licenses, certificates, approvals, and permits are valid and in full force and effect. NLR is not in violation of any Legal Requirement or Order, including, but not limited to, any laws governing political contributions. To the Knowledge of NLR, no event has occurred and no condition or circumstance exists, that might, with or without notice or lapse of time, constitute or result directly or indirectly in a material violation by NLR, or a failure on the part of NLR, to comply with any Legal Requirement or Order, and NLR has not received, at any time, any notice or other communication in writing or otherwise from any Governmental Body or any other Person regarding any actual, alleged, or potential violation of, or failure to comply with, any Legal Requirement or Order.

Section 4.15 Insurance. Section 4.15 of the NLR Disclosure Schedule sets forth a complete and accurate list of all insurance policies held by NLR. Such insurance is in full force and effect and all of the assets, operations, and activities of NLR that are of an insurable nature are and have been continuously insured with adequate types and amounts of insurance since their inception. With respect to each policy, NLR: (a) is not delinquent with respect to any premium payment; (b) is not in default or breach; (c) has not failed to give notice of or to present a claim in a timely fashion; and (d) does not have any Knowledge and has not received any written or oral, formal or informal, notice identifying any defects in any asset that would adversely affect its insurability.

Section 4.16 Employees. Section 4.16 of the NLR Disclosure Schedule contains a complete list of the names, job titles, current wage or salary, and benefits of all NLR's current employees. During their employment at NLR, all such employees are or have been employed solely by NLR. NLR is not a party to any employment agreement or any agreement (written or oral) relating to a bonus, severance pay or similar plan, arrangement, or understanding.

Section 4.17 Real Property. Except for the indefeasible rights of use associated with NLR's network, which may be considered real property for certain purposes under certain laws, NLR does not own any real property. A list of NLR's contracts relating to any real property it leases is set forth in Section 4.17 of the NLR Disclosure Schedule.

Section 4.18 Taxes. NLR has filed or caused to be filed all federal, state, and local annual reports and returns which are required to be filed and has paid all taxes shown to be due and payable on said annual reports and returns or on any assessments made against it, except for returns which have been appropriately extended, and, all other taxes, fees or other charges imposed on it by any Governmental Body which have become due and payable (other than those the amount or validity of which is currently being contested in good faith by appropriate proceedings) and no tax liens have been filed against NLR.

Section 4.19 Litigation and other Claims. With respect to each of (i) NLR, (ii) NLR's officers and directors (in their capacities as such), and (iii) NLR's properties, assets, and operations:

(a) There is no claim, action, suit, proceeding, litigation, grievance procedure, arbitration, or investigation pending or, to the Knowledge of NLR, threatened, and no basis therefore;

(b) They are not subject to any Order; and

(c) They are not in default under any Order or any license, regulation, or demand of any Governmental Body.

Section 4.20 Intellectual Property.

(a) To its Knowledge, NLR owns or possesses sufficient legal rights to all patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, and other proprietary rights and processes necessary for its business as now conducted and as presently proposed to be conducted, without any conflict with or infringement of the rights of others. There are no outstanding options, licenses, or agreements of any kind relating to the foregoing proprietary rights, nor is NLR bound by, or a party to, any options, licenses, or agreements of any kind with respect to the patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, or other proprietary rights and processes of any other Person or entity other than such licenses or agreements arising from the purchase of "off the shelf" or standard products.

(b) NLR has not received any communications alleging that NLR has violated or, by conducting its business as presently proposed to be conducted, would violate any of the

patents, trademarks, service marks, trade names, copyrights, trade secrets, or other proprietary rights of any other Person or entity.

(c) NLR is not aware that any of its employees is obligated under any covenant not to compete, contract (including licenses, covenants, or commitments of any nature) or other agreement, or subject to any Order, that would interfere with their duties to NLR or that would conflict with NLR's business as presently proposed to be conducted.

Section 4.21 Subsidiaries. NLR does not own or control any corporations, limited liability companies, partnerships, or other business organization.

Section 4.22 Provision of Due Diligence Materials. NLR has provided all documents requested by Internet2 or its representatives and has not omitted any material document so requested. NLR has provided Internet2's representatives full and complete access to all of NLR's records and other documents and data.

Section 4.23 Untrue or Inaccurate Representations or Warranties. The representations and warranties of NLR in this Article IV, and each exhibit, certificate, or other written statement delivered pursuant to this Agreement, are accurate, correct, and complete, and do not contain any untrue statement of material fact or fail to state a fact necessary to make a statement therein not misleading.

ARTICLE V. COVENANTS

Section 5.1 Compliance with Laws. Between the Execution Date and the Closing Date, each Party shall comply in all material respects with all Requirements of Law applicable to its properties, business and affairs.

Section 5.2 No Organizational Change. Between the Execution Date and the Closing Date, neither Party shall: (a) amend its Articles of Incorporation or Certificate of Incorporation, as applicable, or Bylaws, (b) merge or consolidate with, purchase substantially all of the assets of, or otherwise acquire any other Person, (c) change the character of its business, or (d) enter into any affiliation or joint venture agreement.

Section 5.3 Conduct of Business in Ordinary Course. Between the Execution Date and the Closing Date, each Party shall carry on its respective business in the usual, regular, and ordinary course in substantially the same manner as heretofore conducted and, to the extent consistent with such business, use all commercially reasonable efforts consistent with past practice and policies to preserve intact its present business organization, keep available the services of present officers and key employees and preserve their relationships with contractors, customers, suppliers, and others having business dealings with it, to the end that its goodwill and ongoing business shall be unimpaired at the Closing Date.

Section 5.4 Maintenance of Asset, Permits and Licenses. Between the Execution Date and the Closing Date, each Party shall, at its sole expense, maintain all its real and personal property in as good order, condition, and repair as on the date hereof, ordinary wear and tear excepted, in accordance with normal maintenance schedules and neither Party shall dispose of

any assets except in the ordinary course of business; and each Party shall maintain in good standing all permits and licenses.

Section 5.5 Maintenance of Books and Records. Between the Execution Date and the Closing Date, each Party shall keep and maintain all of its books and records on the same basis and in the same manner as its books and records were kept and maintained during its most recent fiscal year, except for changes required by GAAP.

Section 5.6 Insurance Policies. Between the Execution Date and the Closing Date, each Party shall maintain in force all insurance which it is presently carrying and no cancellation or reduction of existing insurance coverage shall be effected.

Section 5.7 Contracts. Between the Execution Date and the Closing Date, neither Party will enter into nor renew any material contract or agreement except in the ordinary course of business, and each Party shall maintain in good standing all contracts.

Section 5.8 Compensation. Between the Execution Date and the Closing Date, neither Party will materially increase the annual level of compensation of any employee or grant any unusual or extraordinary bonuses, benefits, or other forms of direct or indirect compensation to any employee, officer, director, or agent, except in amounts in keeping with past practices of the Party, including increasing, terminating, amending or otherwise modifying any Plan.

Section 5.9 Borrowing. Between the Execution Date and the Closing Date, neither Party will borrow any funds under existing credit lines or otherwise, except as reasonably necessary for the ordinary operation of the Party's business and in a manner, and in amounts, consistent with those needs.

Section 5.10 Access to Information. Upon reasonable notice, each Party shall afford to the officers, employees, accountants, counsel, advisors, agents and other representatives of the other Party reasonable access, during normal business hours during the period prior to the Effective Time, to all its properties, books, contracts, commitments and records and all other information concerning its business, properties and personnel as the other Party may reasonably request; provided, however, that such access may be limited, in any manner appropriate in such Party's sole discretion, as required to honor any obligation of confidentiality or non-disclosure that such Party may have to any third party or under any Legal Requirements. Each Party shall notify the other Party if it is unable to disclose any information by reason of obligations to third parties or under any Legal Requirements, and shall use commercially reasonable efforts to cause the third parties with which it contracts to waive any such requirements for the purpose of providing any requested information to the other Party. All information and materials provided pursuant to this Agreement shall be subject to the provisions of the confidentiality agreement entered into between the Parties dated June 22, 2007 (the "Confidentiality Agreement").

Section 5.11 Consents. Between the Execution Date and the Closing Date, each Party shall use commercially reasonable efforts to obtain, at its expense, all waivers, consents or approvals from third Persons, including Governmental Bodies, necessary for the consummation by such Party of the transactions contemplated by this Agreement, and each Party shall provide reasonable assistance to the other Party with respect to any waivers, consents or approvals such

other Party is required to obtain. Between the Execution Date and the Closing Date, each Party shall use commercially reasonable efforts to cause the conditions to the obligations of the Parties to close the transactions contemplated by this Agreement to be satisfied.

Section 5.12 Internet2 Disclosure Schedule. The parties acknowledge and agree that the Internet2 Disclosure Schedule may need to be updated to reflect changes in the ordinary course of the business from the Execution Date to the Closing. Internet2 shall prepare and deliver to NLR any required updated Internet2 Disclosure Schedule no later than five (5) days prior to the Closing. Internet2 shall not be permitted to update the Internet2 Disclosure Schedule to reflect any matter that should have been disclosed in the Internet2 Disclosure Schedule as originally delivered. If such updated Internet2 Disclosure Schedule reflect changes that were not in the ordinary course of the business and would have a Material Adverse Effect on the Combined Corporation, NLR shall have the right to terminate this Agreement; provided, that NLR must notify Internet2 of NLR's decision to terminate this Agreement pursuant to this Section no later than two (2) days after being provided said updated Internet2 Disclosure Schedule. If NLR does not timely provide such notice of termination in accordance with the preceding sentence, the updated Internet2 Disclosure Schedule shall be the Internet2 Disclosure Schedule to this Agreement (replacing the Schedule previously attached hereto) and NLR shall not have the right to terminate this Agreement pursuant to this Section.

Section 5.13 NLR Disclosure Schedule. The parties acknowledge and agree that the NLR Disclosure Schedule may need to be updated to reflect changes in the ordinary course of the business from the Execution Date to the Closing. NLR shall prepare and deliver to Internet2 any required updated NLR Disclosure Schedule no later than five (5) days prior to the Closing. NLR shall not be permitted to update the NLR Disclosure Schedule to reflect any matter that should have been disclosed in the NLR Disclosure Schedule as originally delivered. If such updated NLR Disclosure Schedule reflect changes that were not in the ordinary course of the business and would have a Material Adverse Effect on the Combined Corporation, Internet2 shall have the right to terminate this Agreement; provided, that Internet2 must notify NLR of Internet2's decision to terminate this Agreement pursuant to this Section no later than two (2) days after being provided said updated NLR Disclosure Schedule. If Internet2 does not timely provide such notice of termination in accordance with the preceding sentence, the updated NLR Disclosure Schedule shall be the NLR Disclosure Schedule to this Agreement (replacing the Schedule previously attached hereto) and Internet2 shall not have the right to terminate this Agreement pursuant to this Section.

Section 5.14 Notices of Breach. Each Party shall give prompt written notice to the other Party of (a) the occurrence or non-occurrence of any event causing or reasonably likely to cause any representation or warranty of such Party contained in this Agreement to be untrue or inaccurate in any material respect on or prior to the Closing Date, and (b) any failure of such Party to comply or satisfy in any material respect any covenant, condition or agreement to be complied with or satisfied by it hereunder, (c) the occurrence of any event that would reasonably be expected to prevent the satisfaction of any of the conditions set forth in Article VI. Subject to the provisions of Section 5.12 or 5.13, as applicable, the delivery of any such notice shall not serve to cure such breach or non-compliance or limit or otherwise affect the remedies available hereunder to the Party receiving the notice.

Section 5.15 Executive Management Search. Promptly following the date of this Agreement, the Parties shall constitute a CEO search committee (the “CEO Search Committee”) to recruit a new chief executive officer for the Combined Corporation. The members of the CEO Search Committee shall be Jeffrey Lehman, Tracy Futhey, James Bruce and Wayne Clough. The CEO Search Committee shall hire, on behalf of Internet2, a professional search consultant to assist with the recruiting effort. If a new chief executive officer is successfully recruited, he or she shall be appointed as the CEO as of the Effective Time. If a new CEO has not been selected or cannot begin service at the Effective Time, the Board of Trustees of the Combined Corporation shall, promptly following the Effective Time, appoint an interim CEO who is neither the CEO of Internet2 or the CEO of NLR prior to the Merger.

Section 5.16 Employee Matters. From and after the Effective Time, the Combined Corporation shall honor in accordance with their terms as in effect immediately before the Effective Time (a) all employee benefit or compensation obligations to current and former employees of NLR accrued as of the Effective Time, as set forth in Section 5.16 of the NLR Disclosure Schedule, and (b) all employment or severance agreements entered into prior to the date hereof, as set forth in Section 5.16 of the NLR Disclosure Schedule, provided that such benefits and agreements shall be subject to any amendment or termination thereof that may be permitted by their terms. After the Effective Time, the Combined Corporation will either continue the NLR employee benefit plans in effect at the Effective Time (provided that at renewal dates, copayments, employee contributions, deductible limits and other cost-sharing arrangements may be modified to reflect any increase in the costs of such benefits), modify the NLR employee benefits plans to provide for benefits that would, in the aggregate, be no less favorable than those provided to NLR employees at the Effective Time, or may shift NLR employees to the benefit plans and programs then made available to Internet2 employees (the “Benefits Integration”) with credit for service with NLR accrued (or otherwise credited by NLR) prior to the Benefits Integration deemed service with the Combined Corporation for eligibility and vesting purposes (and levels of benefits). For purposes of vacation benefits, service accrued with NLR shall be credited for determining an employee’s eligibility and length of vacation under the Combined Corporation’s vacation plan, and any vacation taken prior to the Benefits Integration will be subtracted under the Combined Corporation’s plan from the employee’s vacation entitlement for the calendar year in which the Benefits Integration occurs. The Combined Corporation shall waive all pre-existing conditions, exclusions and waiting periods with respect to participation and coverage requirements applicable to employees of NLR under any Internet2 health and welfare plans in which such employees may be eligible to participate after the Effective Time. Deductibles, coinsurance or maximum out-of-pocket payments made by such employees during the applicable plan year under NLR’s health and welfare plans but prior to the date such employee first participates in the applicable Internet2 plan, shall reduce the amount of deductibles, coinsurance and out-of-pocket payments under the applicable Internet2 plan.

ARTICLE VI. CONDITIONS TO CLOSING

Section 6.1 Conditions to NLR’s Obligation to Close. The obligation of NLR to consummate the transactions to be performed by it in connection with the Closing is subject to satisfaction of the following conditions, any of which conditions may be waived by NLR, in whole or in part, in writing so stating at or prior to the Closing:

(a) On the Closing Date, the representations and warranties of Internet2 that are qualified as to materiality or that contain statements relating to “Material Adverse Change” or “Material Adverse Effect” shall be true and correct in all respects; and all other representations and warranties of Internet2 shall be true and correct in all material respects, each as though made as of the Closing (or, with respect to representations and warranties that are specifically made as of a particular date, as of such date); and Internet2 shall have delivered to NLR certificates of its President or other duly authorized officer to that effect.

(b) Internet2 shall have performed all obligations and complied with the covenants required to be performed or complied with by it under this Agreement on or prior to the Closing Date; and Internet2 shall have delivered to NLR certificates of its President or other duly authorized officer to that effect.

(c) There shall have been no Material Adverse Change with respect to Internet2 between the Execution Date and the Closing Date; and Internet2 shall have delivered to NLR certificates of its President or other duly authorized officer to that effect.

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(f) Internet2 shall have delivered to NLR, or its counsel, copies of all corporate documents, including resolutions, of Internet2 as NLR shall reasonably request, and all corporate and other proceedings in connection with the transactions contemplated at the Closing hereby and all documents and instruments incident to such transactions shall be reasonably satisfactory in substance and form to NLR and its counsel, and such counsel shall have received all such counterpart originals or certified or other copies of such documents as such counsel may reasonably request.

Section 6.2 Conditions to Internet2’s Obligation to Close. The obligation of Internet2 to consummate the transactions to be performed by it in connection with the Closing is subject to the following conditions, any of which conditions may be waived by Internet2, in whole or in part, in a writing so stating at or prior to the Closing:

(a) On the Closing Date, the representations and warranties of NLR that are qualified as to materiality or that contain statements relating to “Material Adverse Change” or “Material Adverse Effect” shall be true and correct in all respects; and all other representations and warranties of NLR shall be true and correct in all material respects, each as though made as of the Closing (or, with respect to representations and warranties that are specifically made as of a particular date, as of such date); and NLR shall have delivered to Internet2 certificates of its President or other duly authorized officer to that effect.

(b) NLR shall have performed all obligations and complied with the covenants required to be performed or complied with by it under this Agreement on or prior to the Closing Date; and NLR shall have delivered to Internet2 certificates of its President or other duly authorized officer to that effect.

(c) There shall have been no Material Adverse Change with respect to NLR between the Execution Date and the Closing Date; and NLR shall have delivered to Internet2 certificates of its President or other duly authorized officer to that effect.

(d) NLR shall have obtained from each of its Members written agreements, in form and substance satisfactory to Internet2 in its sole discretion, to the effect that the Membership Agreement between NLR and each such Member is void and without further force or effect.

(e) NLR shall have obtained from each other party to any NLR Extended Contract a written agreement, in form and substance satisfactory to Internet2 in its sole discretion, permitting the Combined Corporation to terminate such NLR Extended Contract without liability if there is a material change or decommissioning of the optical infrastructure acquired by the Combined Corporation from NLR.

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(h) NLR shall have delivered to Internet2, or its counsel, copies of all corporate documents, including resolutions, of NLR as Internet2 shall reasonably request, and all corporate and other proceedings in connection with the transactions contemplated at the Closing hereby and all documents and instruments incident to such transactions shall be reasonably satisfactory in substance and form to Internet2 and its counsel, and such counsel shall have received all such counterpart originals or certified or other copies of such documents as such counsel may reasonably request.

Section 6.3 Additional Conditions to Closing. The obligation of the Parties to consummate the transactions contemplated by this Agreement is subject to satisfaction of the following additional conditions, any of which conditions may be waived by both Parties in writing so stating at or prior to the Closing:

(a) Both Parties shall have given any and all notices and shall have obtained any and all consents, permits, and waivers necessary or appropriate for consummation of the Merger, including without limitation any necessary notices to or consents of any state attorneys general (except for such as may be properly obtained subsequent to the Closing).

(b) No action, suit, or proceeding shall be pending or threatened wherein an unfavorable Order would (i) prevent consummation of any of the transactions contemplated by this Agreement or (ii) cause any of the transactions contemplated by this Agreement to be rescinded following consummation.

(c) This Agreement shall have been duly and validly approved by the Members of each of the Parties, in accordance with all applicable Requirements of Law.

ARTICLE VII. SURVIVAL; TERMINATION

Section 7.1 Survival. The representations and warranties of each Party provided for in this Agreement shall not survive the Closing.

Section 7.2 Termination. Notwithstanding anything herein to the contrary, this Agreement may be terminated at any time without liability:

- (a) by written consent of the Parties;
- (b) by either Party if such Party determines, in its reasonable discretion, that the Merger will have a Material Adverse Effect on the status of the Combined Corporation as an organization described in Section 501(c)(3) of the Code;
- (c) by either Party if the Merger shall not have been consummated on or before _____, unless the failure of the Closing to occur by such date shall be due to the failure of the party seeking to terminate this Agreement to perform or observe the covenants and agreements of such party set forth in this Agreement;
- (d) by NLR (provided that NLR is not then in material breach of any representation, warranty, covenant or other agreement of NLR contained herein), if there shall have been a breach of any of the covenants or agreements or any of the representations or warranties set forth in this Agreement on the part of Internet2, and which is not cured within 45 days following written notice to Internet2 or by its nature or timing cannot be cured within such time period;
- (e) by Internet2 (provided that Internet2 is not then in material breach of any representation, warranty, covenant or other agreement of Internet2 contained herein), if there shall have been a breach of any of the covenants or agreements or any of the representations or warranties set forth in this Agreement on the part of NLR, and which is not cured within 45 days following written notice to NLR or by its nature or timing cannot be cured within such time period;
- (f) by either Party if any approval of the Members of either Party shall not have been obtained by _____.
- (g) By NLR pursuant to Section 5.12.
- (h) By Internet2 pursuant to Section 5.13.

The Party desiring to terminate this Agreement pursuant to any clause of this Section 7.2 (other than clause (a)) shall give written notice of such termination to the other Party, specifying the provision or provisions hereof pursuant to which such termination is effected.

Section 7.3 Effect of Termination. In the event of termination of this Agreement by either Party as provided in Section 7.2, this Agreement shall forthwith become void and have no effect, and none of the Parties shall have any liability of any nature whatsoever under this Agreement, or in connection with the transactions contemplated by this Agreement (except for

any liability of any Party for a material breach of this Agreement); provided however that the provisions of Sections 8.1 and the Confidentiality Agreement shall survive such termination.

ARTICLE VIII. GENERAL PROVISIONS

Section 8.1 Fees and Expenses. If any Party to this Agreement finds it necessary to bring suit to enforce any covenants or agreement hereunder, the losing Party shall pay all reasonable costs and expenses of the prevailing Party in connection with the suit, including court costs and reasonable attorneys' fees, which costs and expenses shall be included in any judgment or decree entered in such suit. Except as set forth herein, each Party shall bear its own legal and accounting expenses associated with the Merger.

Section 8.2 Entire Agreement; Waivers. The exhibits and schedules to which reference is made herein are deemed incorporated into this Agreement in their entirety by reference thereto. This Agreement is the entire agreement between the Parties with respect to the subject matter hereof, and it supersedes any correspondence, memoranda, agreements, warranties, or representations, whether written or oral. No waiver of any of the provisions of this Agreement will be deemed, or will constitute, a waiver of any other provision, whether or not similar, nor will any waiver constitute a continuing waiver.

Section 8.3 Amendment. This Agreement may only be amended by agreement of the Parties evidenced in a formally executed written addendum to this Agreement. Any amendment of this Agreement will require approval of the boards of directors or trustees of each Party.

Section 8.4 Counterparts. This Agreement may be executed in one or more counterparts and, when so executed, each counterpart will be deemed to be an original; said counterparts together will constitute one and the same instrument.

Section 8.5 Assignment. This Agreement will be binding upon and inure to the benefit of the Parties hereto. No Party may assign or transfer any rights under this Agreement, but the obligations hereof will be binding upon all successors and assigns of the Parties.

Section 8.6 Good Faith. Each of the Parties agrees that it will act in good faith to cause all the conditions precedent to its respective obligations to be satisfied and to consummate the transactions contemplated by this Agreement.

Section 8.7 Applicable Law. This Agreement is governed by and shall be construed in accordance with the laws of the State of Delaware but not its conflicts laws. Each Party agrees that no action or other legal proceeding between or among the Parties relating to this Agreement will be commenced or maintained in, or removed to, any court or other forum other than a state or federal court of competent jurisdiction located in the State of Delaware, and each Party waives any substantive or procedural jurisdiction, convenient forum, venue, and other rights to the contrary.

Section 8.8 Severability. Should any provision of this Agreement be determined to be invalid, it will be severed from this Agreement, and the remaining provisions of this Agreement will remain in full force and effect provided that such severance does not have a Material Adverse Effect.

Section 8.9 Announcements and Press Releases. The Parties will cooperate in preparing and distributing any announcements or press releases regarding the Merger and neither Party will issue any such announcement or press release without the prior, written consent of the other Party.

[Signature page follows.]

DRAFT

This Agreement and Plan of Merger is executed as of the Execution Date.

NLR:

INTERNET2

NATIONAL LAMBDARAIL, INC.

UNIVERSITY CORPORATION FOR
ADVANCED INTERNET
DEVELOPMENT, INC.

By _____
President and Chief Executive Officer

By _____
President and Chief Executive Officer

DRAFT

INTERNET2-NLR

(a District of Columbia Nonprofit Corporation)

AMENDED AND RESTATED BYLAWS

ARTICLE I

MISSION

The mission of the Corporation is to ensure that the American research and education community can access and exploit advanced network capabilities adequate to its needs. In so doing, the Corporation advances the state of the art in network and its application. The Corporation represents a merger of equals between the University Corporation for Advance Internet Development and National LambdaRail, Inc., designed to capture the best of both organizations and approach. The Corporation is committed to supporting network research that advances the development and evolution of the general Internet as well as to supporting the general research community's exploitation of advanced networking to improve human understanding and well-being. This requires flexibility in the Corporation's network architecture, technologies, protocols and services, which must be driven in partnership with researchers and controlled by the community the Corporation serves. The Corporation achieves this ambitious mission in partnership with regional networks, which have primary responsibility for developing regional infrastructure and connecting higher education institutions to the national network, as well as with the federal government, corporations and like-minded international networking organizations. The Corporation is committed to dynamism and risk-taking driven by and open, transparent and participatory governance processes.

ARTICLE II

OFFICES; SEAL

1. Offices. The principal office of the Corporation and such other offices as it may establish from time to time shall be located at such place or places, either within or without the District of Columbia, as may be designated by the Board of Trustees or by the officers pursuant to authority from the Board of Trustees.
2. Seal. The seal of the Corporation, if any, shall be in such form as the Board of Trustees prescribes.

ARTICLE III

MEMBERSHIP

1. Membership; Classes: The Corporation shall have four classes of membership: University, Network, Affiliate and Industry, with such rights and privileges as provided in these Bylaws. The University, Network, Affiliate and Industry members are Regular members, as that term is used in the Articles of Incorporation. The Board of Trustees may create additional

classes of membership (“Additional Members”) with such rights and privileges as determined by the Board of Trustees. Absent specific amendment to the Articles of Incorporation and these Bylaws providing such Additional Members with voting rights, Additional Members shall not be entitled to vote in any manner.

(a) *University Membership; Qualification.* University membership in the Corporation is open to United States institutions of higher education and such other organizations as permitted from time to time by the Board of Trustees, that lead Internet2's effort to develop new networking capabilities and advanced applications. They are required to establish advanced network connectivity on an end-to-end basis between and among member institutions and other related development sites, and to pay annual dues, assessments, and/or fees to the Corporation as determined by the Board of Trustees, and who meet any additional requirements for membership imposed by the Board of Trustees from time to time.

(b) *Research and Education Network Membership; Qualification.* Research and Education Network (“Network”) membership is open to any non-profit or not-for-profit organization that is sub-state, state or multi-state in scope and that has a principal mission to provide network infrastructure and services primarily to the research and education community in the relevant geographic area, including, but not limited to, access to the Corporation’s national network infrastructure regardless of whether it serves as a direct connector to the Corporation’s network and who pay annual dues, assessments, and/or fees to the Corporation as determined by the Board of Trustees, and who meet any additional requirements for membership imposed by the Board of Trustees from time to time.

(c) *Industry Membership; Qualification.* Industry membership in the Corporation is open to private organizations and institutions and such other organizations as permitted from time to time by the Board of Trustees who pay annual dues, assessments, and/or fees to the Corporation as determined by the Board of Trustees, and who meet any additional requirements for membership imposed by the Board of Trustees from time to time.

(d) *Affiliate Membership; Qualification.* Affiliate membership in the Corporation is open to nonprofit organizations and government agencies that are research- or education-oriented with a strong interest in the Corporation’s mission and goals. They are committed to promoting the development and deployment of advanced Internet applications and network services in the conduct of research and education and who pay annual dues, assessments, and/or fees to the Corporation as determined by the Board of Trustees, and who meet any additional requirements for membership imposed by the Board of Trustees from time to time.

2. Investors. Certain University and Research members identified on Schedule 1 attached hereto (each, an “Investor” and collectively, the “Investors”) have been admitted as Network members of the Corporation pursuant to a merger (the “Merger”) between the Corporation and National LambdaRail, Inc., a Delaware nonstock corporation (“NLR”), which was consummated pursuant to an Agreement and Plan of Merger (the “Merger Agreement”) between the Corporation and NLR. The Investors shall have all the rights of Network members, and the other rights, privileges and powers (but only such other rights, privileges and powers in

connection with their status as Investors) described in Article XII, Article XIII and Article XVIII of these Bylaws.

3. Admission; Termination. Members shall be admitted to their respective class of membership based upon the prospective member's membership application, successful review, and acceptance of the application by the Corporation. The Corporation may admit existing members of the Corporation to the above-mentioned respective classes of membership upon approval and acceptance of such membership by the Corporation. Membership shall be continuing, provided the member maintains itself in good standing with respect to the requirements for membership as set forth in this Article III, Section 1 and the policies and procedures established by the Board of Trustees from time to time. Notwithstanding any provision to the contrary in these Bylaws, the rights, privileges and powers of membership, including the right to vote, shall terminate immediately upon the resignation from the Corporation of such member or two-thirds (2/3) vote of the Board of Trustees to expel such member; provided that the Board of Trustees shall have no right to expel any member that is an Investor and that is maintaining itself in good standing with respect to the requirements for membership prior to June 30, 2008.

4. Transfer of Membership. Membership in the Corporation is not transferable or assignable.

5. Member Representative. The Chief Executive Officer, or, if a member does not have a Chief Executive Officer, the President ("CEO") of each member (or such other person as may be authorized pursuant to the Corporation's policies and procedures as adopted from time to time) shall be the individual who shall have the right to vote for the member on all matters as set forth in these Bylaws, absent written instructions to the contrary by the CEO notifying the Corporation that another individual is entitled to vote on all matters for which the member is entitled to vote. Such written notice shall state the period of time for which the other individual is entitled to vote for the member.

6. Voting Privileges. Only University, Network, Affiliate and Industry members in good standing shall have the right to vote. University, Network, Affiliate and Industry members shall be entitled to vote for the election of trustees and nominations of members of committees (including committees and councils as described in Article VI) of the Board of Trustees as provided for in these Bylaws, and on no other matters. Such members are sometimes individually referred to as "Voting Member" and collectively as "Voting Members". Each Voting Member is entitled to one vote (voting is not cumulative) on all matters for which a member is entitled to vote, and voting on all matters may be conducted by mail, telephone call, telegram, cablegram, electronic mail, or any other means of electronic or telephonic transmission.

7. Place of Meetings. Meetings of the Voting Members may be held either within or without the District of Columbia.

8. Annual Meeting. The Corporation may hold a regular annual meeting of the Voting Members as determined by the Board of Trustees. Notice of such meeting shall be given to the Voting Members at least twenty (20) days prior to the date of the meeting. Regardless of whether an annual meeting of the Voting Members is held, the Corporation shall conduct an

election for trustees and members of committees and councils not later than April 30, 2009, with respect to trustees and committee/council members to be elected to serve as trustees or committee or council members after the end of the Initial Period, and thereafter at least annually on such date as may be specified by the Board of Trustees. Such elections shall be conducted in accordance with such procedures as may be established by the Board of Trustees from time to time; provided that Voting Members may vote in any such election by mail, telephone call, telegram, cablegram, electronic mail, online voting system or any other means of electronic or telephonic transmission. The date on which the results of any such election are tallied and the results announced, whether it occurs at a meeting of the Voting Members or pursuant to an election/nomination conducted pursuant to this Section is referred to herein as the "Annual Vote."

9. Special Meetings. The Corporation shall hold a special meeting of the Voting Members on call of the Chairperson, the President/Chief Executive Officer, the Board of Trustees or members holding one-twentieth (1/20) of the votes entitled to be cast at the meeting. Notice of such a meeting shall be given to the Voting Members at least ten (10) days prior to the date of the meeting. The notice of a special meeting shall state the purpose or purposes for which the meeting is called.

10. Proxies. Except as provided for in this Article III, Section 6, there shall be no proxy voting by the Voting Members.

11. Quorum. Unless otherwise provided for in these Bylaws, one-tenth (1/10) of the Voting Members shall constitute a meeting of the Voting Members (or the respective class of Voting Members if so provided by these Bylaws). Voting Members who vote by mail, telephone call, telegram, cablegram, electronic mail, online voting system or any other means of electronic or telephonic transmission shall be deemed present in person for the purpose of these Bylaws.

12. Action at Meeting. Except as otherwise provided for in these Bylaws, whenever any corporate action is to be taken by vote of the Voting Members (or respective membership class of Voting Members if so provided by these Bylaws), it shall be authorized by a majority votes cast at a meeting of the Voting Members (or respective class of Voting Members, if applicable) by members entitled to vote thereon.

ARTICLE IV

BOARD OF TRUSTEES

1. Powers. The affairs of the Corporation shall be managed by the Board of Trustees. The Board of Trustees shall possess, and may exercise, any and all powers granted to the Corporation under the Act, the Articles of Incorporation, and these Bylaws.

2. Composition During Initial Period. During the period commencing at the effective time of the merger contemplated by the Merger Agreement (the "Effective Time") and continuing until June 30, 2009 (such period being referred to herein as the "Initial Period"), the number of trustees constituting the entire Board of Trustees shall be twenty-one (21) and the persons named on Schedule 2 attached hereto shall be the members of the Board of Trustees.

3. Composition Following Initial Period. Following the end of the Initial Period, the number of trustees constituting the entire Board of Trustees shall not be less than fifteen (15) nor more than seventeen (17). The number of trustees may be increased or decreased by amendment of the Bylaws provided that no reduction in the number of trustees shall have the effect of shortening the term of any trustee in office at the time such amendment becomes effective.

4. Board of Trustees; Composition; Election. After the end of the Initial Period, the Board of Trustees shall be selected as follows:

(a) The Chairperson of each of the Corporation's four (4) advisory councils established pursuant to Article VI, Section 2 shall serve as an *ex-officio* voting member of the Board of Trustees. These seats on the Board of Trustees are referred to as Board Seats 1 through 4.

(b) The Corporation's President/Chief Executive Officer shall serve as an *ex-officio* voting member of the Board of Trustees. This seat on the Board of Trustees is referred to as Board Seat 5.

(c) Ten voting members of the Board of Trustees shall be elected by the Voting Members in accordance with the nomination/election procedures set forth in Article IX. These seats on the Board of Trustees are referred to in these Bylaws as Board Seats 6 through 15.

(d) Up to two (2) additional members of the Board of Trustees may be elected by the Board of Trustees in order to satisfy minimum board composition requirements pursuant to Section 5 of this Article IV. These seats on the Board of Trustees shall be referred to as Board Seats 16 and 17.

5. Criteria for Nomination to Board of Trustees. After the end of the Initial Period, in carrying out the responsibilities to nominate candidates for Seats 6 through 15, the Governance and Nominations Committee (the "GNC"), and the Board of Trustees in filling any vacancy as provided for in this Article IV, Section 9, shall seek to ensure that Corporation's Board of Trustees, as a whole, is representative of its members and will (a) further support the Corporation's mission to support higher education and (b) in aggregate display diversity in geography, demography, culture, skills, disciplines, and perspective, as well as the location and character of the institution with which the prospective trustee may be affiliated. Subject to the foregoing, the composition of the Board of Trustees shall reflect members from the following backgrounds, with minimum and target levels. The minimum requirements are absolute. If for some unforeseen and unexpected reason the composition of the Board of Trustees does not satisfy the minimum requirements within a 15-member Board, an additional one or two Board positions (Board Seats 16 and 17 as described in this Article IV, Section 4(d)) may be utilized to meet such minimum Board composition requirements. At no time shall the GNC nominate a trustee to fill any vacancy or expired term whose election would cause the total number of trustees (not including the President/CEO) to go below the minimum requirements set forth in this Article IV, Section 5.

Background
Financial Executive

Minimum/Target
1/1

University CEO (current or former)	5/7
University CIO (current or former)	3/3
Network Researcher	1/1
Disciplined Based Researcher	1/1
Regional/State Network Leader	1/1
The Corporation's CEO	1/1
Industry/Leader	<u>1/1</u>
Total	14/16

6. Qualifications. Trustees need not be residents of the District of Columbia. Subject to the provision of these Bylaws, a trustee may succeed himself or herself in the office.

7. Terms of Office.

(a) The persons who are members of the Board of Trustees at the Effective Time shall serve a term commencing at the Effective Time and ending at the end of the Initial Period.

(b) At the first meeting of the newly elected Board of Trustees following the end of the Initial Period, Seats 6 through 15 shall, by lot, be divided into three groups of nearly equal size as possible. The trustees in the first group shall serve a term of one year, the trustees in the second group shall serve a term of two years, and the trustees in the third group shall serve a term of three years. Thereafter each group of trustees shall serve three year terms, with the term of each group of the trustees ending in each successive year. The term of office for Seats 1 through 5 of the newly elected Board of Trustees following the Initial Period shall expire when the respective trustee's term of office allowing the trustee to be an *ex-officio* member of the Board of Trustees expires, and trustees from Seats 16 and 17 shall be elected to serve office until the next Annual Vote. Trustees, with the exception of the trustee from Board Seat 5, shall serve no more than six consecutive years.

8. Resignation. Any trustee may resign at any time by giving written notice of his or her resignation to the Chairperson of the Board of Trustees, the President/CEO, or the Secretary. Unless otherwise specified in such notice, the resignation shall be effective upon delivery.

9. Vacancy. During the Initial Period, a vacancy in the Board of Trustee shall be filled by a person nominated by agreement of the Chairperson and the Vice Chairperson and elected by a vote of the Board of Trustees at a special meeting of the Board of Trustees called for such purpose. After the end of the Initial Period, a vacancy in the Board of Trustees existing between Annual Votes shall be filled by the vote of the Board of Trustees at a special meeting of the Board of Trustees called for such purpose. A trustee so elected to fill a vacancy shall serve the remainder of the unexpired term. After the end of the Initial Period, the Board of Trustees shall use the same criteria as set forth in this Article IV, Section 5, in electing a trustee to fill a vacancy.

10. Officers of the Board of Trustees.

(a) There shall be a Chairperson of the Board of Trustees, who shall preside over all meetings of the Board if present. The Chairperson during the Initial Period shall be Jeffrey Lehman. The Chairperson shall be elected by the Board of Trustees, and the term of office of the Chairperson shall be from the date of his or her election until the remainder of the trustee's unexpired term of office. A Chairperson may succeed himself or herself as Chairperson. Following the end of the Initial Period, the Chairperson shall be a current or former university CEO.

(b) There shall be a Vice Chairperson of the Board of Trustees. During the Initial Period, the Vice Chairperson shall be Tracy Futhey. At the request of the Chairperson, or in the Chairperson's absence or disability, the Vice Chairperson shall perform all the duties of the Chairperson, and when so acting shall have all the powers of, and be subject to all the restrictions upon, the Chairperson, and shall perform such other duties as the Board may from time to time assign. The Vice Chairperson shall be elected by the vote of the Board of Trustees, and the term of office of the Vice Chairperson shall be from the date of his or her election until remainder of the trustee's unexpired term of office. A Vice Chairperson may succeed himself or herself as Vice Chairperson.

11. Removal. Any trustee other than a trustee from Board Seats 1 through 5 may be removed from office with cause by the supermajority (seventy-five percent (75%)) vote of the Board of Trustees. Cause includes failure by a trustee to attend two or more consecutive Board of Trustee meetings.

ARTICLE V

MEETINGS OF TRUSTEES

1. Place of Meetings. The Board of Trustees may hold meetings, annual, regular, or special, either within or without the District of Columbia.

2. Annual Meeting. The Board of Trustees shall hold a regular annual meeting, on such date as they may designate following the Annual Vote, at a time and place set by the Board of Trustees. Notice of such meeting shall be given to each trustee at least ten (10) days prior to the date of the meeting.

3. Regular Meetings. Additional regular meetings of the Board of Trustees may be held, at such times and places as may be determined by the Board of Trustees. Notice of such a meeting shall be given to each trustee at least two (2) days prior to the date of the meeting.

4. Special Meetings. Special meetings of the Board of Trustees may be called by the Chairperson of the Board of Trustees, and shall be called by the Chairperson of the Board of Trustees upon the written request of 4 trustees, at such times and places as may be determined by the Chairperson.

5. Quorum; Vote. At all meetings of the Board of Trustees, the presence of a majority of the trustees in office, shall constitute a quorum for the transaction of business. The

affirmative vote of a majority of the trustees present at any meeting at which there is a quorum shall be the act of the Board of Trustees, unless the affirmative vote of a greater number of trustees is specifically required by law, the Articles of Incorporation, or these Bylaws.

6. Adjournment. Whether or not a quorum is present, a majority of trustees present at a meeting of the Board of Trustees may adjourn the meeting to another place, date, or time. When a meeting is adjourned to another place, date, or time, and the place, date, and time of the adjourned meeting are announced at the meeting at which adjournment is taken, written notice need not be given of the adjourned meeting unless the date thereof is more than thirty (30) days after the date for which the meeting was originally noticed. At any such adjourned meeting at which a quorum is present, any business may be transacted that might have been transacted at the meeting as originally noticed.

7. Action By Consent. Any action required or permitted to be taken at a meeting of the Board of Trustees or of any committee may be taken without a meeting if written consents setting forth the action taken are signed and dated by all of the members of the Board of Trustees or of such committee, as the case may be. Such consents (which may be in one instrument or several instruments) shall be filed with the minutes of the proceedings of the Board of Trustees or of the committee. Unless otherwise specified in such consents, the effective date of any action so taken is the date on which the last trustee signs the consents. Any action so taken shall have the effect of a vote taken at a meeting of the Board of Trustees.

8. Meetings by Telephone. The members of the Board of Trustees or of any committee may participate in a meeting by means of a conference telephone or similar communications equipment by which all trustees participating in the meeting can hear each other at the same time. Participation by such means shall constitute presence in person at such meeting.

ARTICLE VI

COMMITTEES – GENERAL

1. Committees of the Board. The Board of Trustees may, by resolution adopted by a majority of all trustees in office, establish such committees having and exercising the authority of the Board of Trustees as it deems necessary or proper. Each committee must be composed of at least three (3) members of the Board of Trustees. The Board of Trustees may make such provisions for appointment of the members and chairpersons of such committees, and delegate to the committees such authority as may be necessary or desirable for the efficient management of the property, affairs, business, and activities of the Corporation; provided, that the Board of Trustees shall not delegate to any committee authority to (a) adopt or approve a plan of merger or consolidation; (b) authorize the voluntary dissolution of the Corporation; (c) elect, appoint, or remove any trustee or officer; (d) amend, adopt, or repeal the Articles of Incorporation or these Bylaws; or (e) approve any specific matter requiring a majority or supermajority vote of the trustees under these Bylaws. Unless otherwise specified in the resolution establishing a committee, a committee's authority shall continue until terminated by the Board of Trustees, and a vacancy in a committee shall occur when a member thereof ceases to be a trustee or is removed by the affirmative vote of a majority of all trustees in office.

The designation and appointment of any such committee and the delegation thereto of authority shall not operate to relieve the Board of Trustees, or any individual trustee of any responsibilities imposed upon it or him by law. The Corporation shall have the following committees of the Board:

(a) *Executive Committee.* The Board shall designate an Executive Committee consisting of the Chairperson of the Board of Trustees, the President/Chief Executive Officer of the Corporation and at least two (2) but no more than four (4) additional trustees as the Board may determine. The Executive Committee may exercise the powers of the Board when the Board is not in session, except to those matters enumerated in this Article VI, Section 1, reporting to the Board at its succeeding meeting any action taken. Meetings of the Executive Committee may be called by one or more Executive Committee members.

(b) *Audit Committee.* The Audit Committee shall consist of such number of Trustees, not less than three, as shall be fixed from time to time by the Board of Trustees (other than the Corporation's CEO) and shall include a trustee member familiar with financial statements and accounting issues. The Audit Committee shall assist the Board of Trustees in fulfilling its fiduciary responsibilities relating to the accounting and financial reporting practices of the Corporation. It shall recommend annually to the Board the selection of independent public accountants to audit the books and accounts of the Corporation. It shall also act as a liaison between the Board of Trustees and the independent accountants; shall review with the independent accountants the audited financial statements of the Corporation prior to recommending their approval by the Board of Trustees; shall monitor the effectiveness of independent financial audits; shall inquire into the effectiveness of the Corporation's management of financial and accounting functions, including its internal auditing methods; shall review the independent accountant's recommendations to management relating to organization, internal control and financial operations; and shall have such other duties as may from time to time be directed by the Board of Trustees.

2. Advisory Committees/Councils. Other committees/councils not having and exercising the authority of the Board of Trustees may be constituted and members thereof appointed as provided for in these Bylaws. The Corporation shall have the following advisory committees/councils.

(a) *Governance and Nominations Committee.* During the Initial Period, the GNC shall consist of seventeen (17) members. Until the end of the Initial Period, the persons identified on Schedule 3 attached hereto shall be the members of the GNC. Thereafter, the GNC shall consist of fifteen (15) members or such number of members as shall be fixed from time to time by the Board of Trustees. The members shall be nominated and elected in accordance with the procedures set forth in Article VII. The GNC shall advise and assist the Board in: (i) developing and overseeing the Corporation's policies and procedures regarding Board of Trustee composition and recommendations of candidates for nomination to the Board and committees; helping to determine qualifications and characteristics needed by Board members; identifying, screening and reviewing individuals qualified to serve as trustees and committee members and recommending to the Board and committees as provided for in these Bylaws candidates for nomination and election to fill Board and committee vacancies; and (ii) developing and implementing the Corporation's corporate governance guidelines and principles, reviewing on a

regular basis the overall corporate governance of the Corporation and recommending improvements when necessary. The GNC will also be responsible for conducting, in consultation with members, RCs and others in the research community, a comprehensive governance review, including a review of the lessons learned from the Council election process and changes in circumstances resulting from the Merger, and preparing and submitting a public report with recommendations prior to April 30, 2009. The GNC will also make recommendations with respect to the creation of a network researcher caucus (the “NWR Caucus”), an disciplinary researcher caucus (the “DR Caucus”), an executive liaison caucus (“EL Caucus”) and a regional connector caucus (the “RC Caucus” and collectively with the NWR Caucus, the EL Caucus and the DR Caucus, the “Caucuses”), as special resources to the Board of Trustees and Councils. The GNC’s recommendations with respect to Caucuses shall be delivered to the Board of Trustees, the Caucuses created and members appointed thereto within _____ days after the Effective Time.

(b) *Architecture and Operations Advisory Council (“AOAC”).* During the Initial Period, the AOAC shall consist of eighteen (18) members. Until the end of the Initial Period, the persons identified on Schedule 4 attached hereto shall be the members of the AOAC. Thereafter, the AOAC shall consist of fifteen (15) members or such number of members as shall be fixed from time to time by the Board of Trustees. The members shall be nominated and elected in accordance with the procedures set forth in Article VIII. The AOAC will advise and assist the Board and management on matters relating to the architecture, operations, and policies of the Corporation’s network, including regional and international connectivity. The AOAC is responsible for interacting directly with other network advisory committees on operational and technical matters. The AOAC will also take up issues related to network security, the development of future infrastructure and services, provide advice on network financial matters and such other matters as the Board shall designate from time to time. The AOAC will be the primary source of advice and guidance to the Board of Trustees on the development of network infrastructure and services over time.

(c) *The Applications, Middleware, and Services Advisory Council (“AMSAC”).* During the Initial Period, the AMSAC shall consist of eighteen (18) members. Until the end of the Initial Period, the persons identified on Schedule 6 attached hereto shall be the members of the AMSAC. Thereafter, the AMSAC shall consist of fifteen (15) members or such number of members as shall be fixed from time to time by the Board of Trustees. The members shall be nominated and elected in accordance with the procedures set forth in Article VIII. The AMSAC will advise and assist the Board and management on matters relating to the support and adoption of applications, middleware, security and other capabilities across the Corporation’s membership and its collaborators around the globe. The AMSAC is responsible for interacting directly with other key advisory committees on technical and service issues. It will also provide advice on the Corporation’s efforts to support applications and middleware for teaching and learning as well as for research, and for advice on the investment of resources for current and future initiatives and such other matters as the Board shall designate from time to time.

(d) *Research Advisory Council (“RAC”).* During the Initial Period, the RAC shall consist of eighteen (18) members. Until the end of the Initial Period, the persons identified on Schedule 7 attached hereto shall be the members of the RAC. Thereafter, the RAC shall

consist of fifteen (15) members or such number of members as shall be fixed from time to time by the Board of Trustees. The members shall be nominated and elected in accordance with the procedures set forth in Article VIII. The RAC will assist and advise the Board and management on matters relating to the Corporation's support for research, both network-focused research and disciplinary research that makes use of the network as a tool. The RAC will provide a forum for strategic questions about how best to support the development of resources for scientific, humanities, clinical, computational, and other research communities domestically and internationally. The RAC will also provide advice on the nature and extent of research undertaken by the Corporation's staff, to support the development of such research by others and such other matters as the Board shall designate from time to time.

(e) *Industry, Government, International, and External Relations Advisory Council ("ERAC")*. During the Initial Period, the ERAC shall consist of eighteen (18) members. Until the end of the Initial Period, the persons identified on Schedule 8 attached hereto shall be the members of the ERAC. Thereafter, the ERAC shall consist of fifteen (15) members or such number of members as shall be fixed from time to time by the Board of Trustees. The members shall be nominated and elected in accordance with the procedures set forth in Article VIII. The ERAC will assist and advise the Board and management on matters of policy, standards, and strategies in the context of industry, government, and international relations. These include, but are not limited to, issues of technology transfer and engagement strategies between the Corporation and industry; the role of national-scale networks as a vital resource for the nation's economic, scientific, and cultural development; and maintenance of strong bilateral partnerships with international networking organizations and the Corporation's leadership role in international collaborations. ERAC will also provide advice on membership growth and strategy and such other matters as the Board shall designate from time to time.

3. No Campaigns. No campaign shall be conducted for any office, inasmuch as the action is for position of service in professional organization. No candidate shall request the vote of any Voting Member or committee member nor the efforts of any Voting Member or committee in the promotion of candidacy. Except for the efforts which may be involved in obtaining the petition to qualify for nomination, no member shall seek in any organized way to promote the election of any candidate.

4. Meetings; Voting and Quorum Requirements. Meetings of any committee (whether advisory or committees of the Board), voting and quorum requirements, and any notice provisions shall, to the extent not otherwise specified in resolutions of the Board of Trustees, be conducted in accordance with the foregoing provisions applicable to the Board of Trustees.

ARTICLE VII

GOVERNANCE AND NOMINATIONS COMMITTEE; NOMINATIONS, ELECTION

1. General. The composition of the Governance and Nominations Committee should reflect the cross constituencies and geographic representation and areas reflecting its membership, in general, to ensure a balanced representation.

2. Election and Composition of GNC. Until the end of the Initial Period, the persons identified on Schedule 9 attached hereto, and two additional persons named by agreement of the Chairperson and the Vice Chairperson who have had leadership roles in the Investor community, shall be the members of the GNC, and the terms of all such persons on the GNC shall end at the end of the Initial Period, unless such individuals are re-elected to the GNC in accordance with this Section 2. With respect to the period following the end of the Initial Period, the members of the GNC shall be nominated and elected as follows:

(a) Six (6) individuals shall be nominated from a pool of individuals nominated for candidacy by the Voting Members (and such other persons as determined from time to time by the Board of Trustees) and elected by the GNC. These seats on the GNC are referred to as Seats 1 through 6.

(b) The Chairperson of each of the Corporation's four (4) Councils shall serve as an *ex-officio* member of the GNC. These seats on the GNC are referred to as Seats 7 through 10.

(c) The Board of Trustees shall annually elect three (3) of its University CEOs to serve as members of the GNC. These seats on the GNC are referred to as Seats 11 through 13.

(d) Two (2) additional individuals shall be elected annually by the Board of Trustees to fill out an expertise or representation gap. These seats on the GNC are referred to as Seats 14 and 15.

3. Terms of Office of Members of the GNC. At the first meeting of the GNC following the end of the Initial Period, the members of the GNC holding Seats 1 through 6 shall, by lot, divide themselves into two groups. Members in each group shall serve a term of one year, two years and three years so that one third of the positions in each group are subject to re-election annually. Thereafter each member of the GNC holding Seats 1 through 6 shall serve a three year term, with the term of one member in each group ending in each successive year. The term of office for Seats 7 through 10 shall expire when the respective member's term of office allowing the member to be an *ex-officio* member of the GNC expires. Members from Seats 11 through 15 shall be elected to serve a three-year term. GNC members shall serve no more than six consecutive years.

4. Call for Nomination of Candidates. With respect to vacancies for GNC Seats 1 through 6, the GNC shall, not later than ___ days prior to April 30, 2009, and at such other times after the end of the Initial Period as the Board of Trustees designates, issue a call for nominations to the Voting Members (and such other persons as determined from time to time by the Board of Trustees) for as many vacancies as are to be filled at the ensuing election of the GNC. In issuing a call for nominations, the GNC shall take into account the factors for the GNC composition as set forth in this Article VII. The GNC shall review the individuals nominated by the Voting Members (and such other persons as determined from time to time by the Board of Trustees) for candidacy to fill the GNC vacancies taking into account the criteria for the GNC composition. The GNC shall nominate at least two (2) candidates for as many vacancies as are to be filled at the ensuing election of the Nominating Committee and shall notify the Chairperson

of the Board of Trustees of such candidates at such time as the Board of Trustees designates prior to the annual meeting of the Board of Trustees.

5. Voting. With respect to Seats 1 through 6, the GNC shall elect one candidate each for any as many vacancies at such time as the Board of Trustees designates. The Board of Trustees shall elect Seats 11 through 15, as applicable, at the annual meeting of the Board of Trustees.

6. Chairperson. Both during the Initial Period and for all periods thereafter, there shall be a Chairperson of the GNC who shall be a member of the Board of Trustees elected annually by the Chairperson of the Board of Trustees. The Chairperson shall preside over the meetings of the GNC.

7. Removal. Any member of the GNC other than an individual from Board Seats 7 through 10 may be removed from office with or without cause by the supermajority (seventy-five percent (75%)) vote of the Board of Trustees at which a quorum is present or by the vote of the GNC.

8. Vacancies. A vacancy in the GNC existing between meetings of the GNCs shall be filled by the vote of the Board of Trustees at a special meeting of the Board of Trustees called for such purpose. The individual so elected to fill a vacancy shall serve the remainder of the unexpired term. The Board of Trustees shall use the same criteria as set forth in this Article VII in electing an individual to fill a vacancy in the GNC.

ARTICLE VIII

COUNCILS; NOMINATIONS; ELECTION

1. Nomination of Council Members. Until the end of the Initial Period, the persons identified on Schedule 10 attached hereto shall be the members of the Councils, and with respect to each Council, three additional persons named prior to the effective date of these Bylaws by NLR's Board of Directors (as specified in a written notice to the Corporation, which notice shall be filed with the minutes of proceedings of the Corporation). The terms of all such persons on the Councils shall end at the end of the Initial Period. With respect to the period following the end of the Initial Period, twelve (12) members of each Council shall be nominated by the GNC, pursuant to the procedures set forth in this Article VIII, for election by the Voting Members as set forth in this Article VIII, Sections 7 and 9. The remaining three (3) members of each Council shall be elected by the Board of Trustees.

2. Criteria for Selection of Councils. Among the Council members who are elected by the Voting Members, each Council shall have three members who shall have backgrounds in network-focused research and disciplinary research, three members who are present or former university Chief Information Officers, three members who shall have backgrounds in industry, and three members who shall have backgrounds with state or regional operating networks.

3. Terms. At the first meeting of each Council following the end of the Initial Period, each Council shall be divided into five groups, with equal distribution as described in this Article VIII (Section 2). Each year, the term of office of one individual in each of the groups of

each Council shall expire, so that one third of the Council positions in each Council are subject to re-election. Except as otherwise provided for in these Bylaws, members of any Council shall serve no more than six consecutive years.

4. Removal. Except for Council members during the Initial Period, Council members may be removed with or without cause by the vote of a majority vote of the respective Council members or by the supermajority vote (seventy-five percent 75%) of the Board of Trustees.

5. Vacancies. Any vacancy in a Council existing between meetings of a Council shall be filled by the vote of the Board of Trustees at a special meeting of the Board of Trustees called for such purpose. The individual so elected to fill a vacancy shall serve the remainder of the unexpired term. The Board of Trustees shall use the same criteria as set forth in this Article VIII in electing an individual to fill a vacancy in a Council.

6. Nomination by the GNC. The GNC shall, at such a time as the Board designates, and prior to each Annual Vote, issue a call for nominations to each of the Voting Members (and such other persons as determined from time to time by the Board of Trustees) for as many vacancies as are to be expected to be filled at the ensuing election of the Voting Members using the criteria set forth in Section 2 of this Article VIII. At such a time as the Board designates prior to the Annual Vote, the GNC shall identify individuals qualified to stand for re-election or to become new members of Councils, consistent with any qualifications, expertise and characteristics set forth in Article VIII, Section 2. The GNC shall nominate at least two candidates for as many vacancies as are to be filled at the ensuing election of the Voting Members. Before selecting any nominee for a position on the GNC, the GNC shall review the candidate's availability and willingness to serve.

7. Notifying Voting Members of Nominations. The Secretary of the Corporation shall, at such a time as the Board designates, announce the list of such nominations for each Council to the Chairperson of each Council and the Chairperson of the Board of Trustees.

8. Voting. Voting for Council vacancies shall be held by secret ballot or such other method as the Board of Trustees determines. The Secretary shall prepare a formal ballot containing the names of nominees for each position to be voted on by the respective class of Voting Members. The Board shall fix a time for the Board of Trustees or a committee thereof to review the votes prior to the Annual Vote. At such a time as the Board designates, prior to the time set for reviewing the votes for Council positions, the Secretary shall distribute to the applicable class of Voting Members in good standing a ballot, voting instructions and notification of the time set for reviewing the vote. The Secretary shall comply with such other rules as the Board may have adopted, including provisions to ensure secrecy of the votes and to prevent use of the ballots by persons ineligible to vote. For votes to be valid, they must be received within the time set by the Board for reviewing the votes and must comply with the procedures set forth in the written instructions. All questions regarding the voting and the validity of the votes shall be decided by the Board of Trustees, whose decision shall be final.

9. Counting the Votes. The votes shall be reviewed at the time fixed by the Board. The results of the voting shall be formally announced by the Chairperson of the Board of

Trustees and the candidates receiving the highest number of votes for their respective Council position shall be declared duly elected.

10. Election of Council Members by Voting Members. Each of the three members of each Council who are to have backgrounds with state or regional networks shall be elected by the majority vote of the Network members (one vote per member); each of the three members of each Council who are to have backgrounds with industry will be elected by the majority vote of the Industry members (one vote per member); each of the three members of each Council who are to have backgrounds in research will be elected by the majority vote of University members (one vote per member), in a manner whereby the individual with authority to cast the vote for the majority vote of University member is encouraged to consult with one or more individuals at the university in a position to evaluate the different candidates for office; and the three members of each Council who are to have backgrounds as university CIOs will be elected by the University members (one vote per member), in a manner whereby the individual with authority to cast the vote for a University member is encouraged to consult with one or more individuals at the university in a position to evaluate the different candidates for office.

11. Council Chairpersons. At such time as the Board designates, each Council will annually elect from its membership a Chairperson. Following the end of the Initial Period, each Council Chairperson shall serve *ex officio* as a voting member of the Board of Trustees. Councils may also choose to elect Vice-Chairpersons from their membership, however, the Vice-Chairperson shall not represent the Council as a voting member of the Board of Trustees. During the Initial Period, each Council may choose to select a member of the Board as its Chairperson, even if that person is not a member of that Council; should it select as its Chairperson someone who is not a member of the Board, that Council shall select a member of the Board to serve *ex officio* as its nonvoting Vice-Chairperson.

ARTICLE IX

TRUSTEE NOMINATION; NOMINATIONS; ELECTION

1. Trustee Nomination; Election. At such time the Board designates following determination by the Board of the number of trustees to be elected at the Annual Vote in accordance with the provisions set forth in these Bylaws, the GNC shall issue a call to the Voting Members (and such other persons as determined from time to time by the Board of Trustees) for nomination for as many vacancies as are to be filled at the ensuing election of the Voting Members. At such time as the Board designates, the GNC shall identify individuals qualified to stand for re-election or to become new members of the Board of Trustees, consistent with any qualifications, expertise and characteristics set forth in Article IV, Section 5; the GNC shall evaluate incumbent trustees whose terms are expiring at the meeting and consider their qualifications to stand for re-election; and the Committee shall evaluate nominees for election to the Board submitted by Voting Members in accordance with procedures set forth in these Bylaws. Before selecting any nominee for trustees, the Committee shall review the candidate's availability and willingness to serve.

2. Report to Board Chairperson. The GNC shall report its nominations for Board positions for the next election to the Chairperson of the Board of Trustees no later than the time

the Board so designates. The GNC shall be given substantial discretion about how to present the candidates to the Voting Members for election. In some years, it may present to the Voting Members a single slate of candidates for election, and in other years it may present more than one candidate for each Board vacancy.

3. Notifying Voting Members of Nominations. The Secretary of the Corporation shall, at the time the Board so designates, announce the list of such nominations for vacancy on the Board of Trustees.

4. Voting. Voting for Board of Trustee vacancies shall be held by secret ballot. The Secretary shall prepare a formal ballot containing the names of nominees for each position to be voted on by the Voting Members. The Board shall fix a time for the Board of Trustees or a committee thereof to review the votes prior to the Board of Trustee's annual meeting. Prior to the time set for reviewing the votes for Board of Trustee vacancies the Secretary shall distribute to each active Voting Member in good standing a ballot, voting instructions and notification of the time set for reviewing the vote. The Secretary shall comply with such other rules as the Board may have adopted, including provisions to ensure secrecy of the votes and to prevent use of the ballots by persons ineligible to vote. For votes to be valid, they must be received within the time set by the Board for reviewing the votes and must comply with the procedures set forth in the written instructions. All questions regarding the voting and the validity of the votes shall be decided by the Board, whose decision shall be final.

5. Counting the Votes. The votes shall be reviewed at the time fixed by the Board. The results of the voting shall be formally announced by the Chairperson and the candidates receiving the majority vote of the Voting Members for their respective position shall be declared duly elected.

ARTICLE X

NOTICE

1. Form; Delivery. Whenever, under the provisions of the Act, the Articles of Incorporation, or these Bylaws, notice is required to be given to any trustee or member, such notice may be given in writing, by mail, addressed to such trustee or member at his, her or its post office address as it appears on the current records of the Corporation. Such notice shall be deemed to be given at the time it is deposited in the United States mail. Notice may also be communicated orally in person or by telephone; or given by telegraph, teletype, other form of wire or wireless communication, or private carrier.

2. Waiver. Whenever any notice is required to be given under the provisions of the Act, the Articles of Incorporation, or these Bylaws, a written waiver thereof, signed by the person or persons entitled to such notice and delivered to the Secretary for inclusion with the records of the meeting, whether before or after the time stated therein, shall be deemed to be the equivalent of such notice. In addition, any representative of a member, trustee or member of a committee who attends a meeting without objecting at the beginning of the meeting or promptly upon his or her arrival to holding the meeting or transacting business at the meeting (and does

not thereafter vote for or assent to action taken at the meeting), shall be conclusively deemed to have waived notice of such meeting.

ARTICLE XI

OFFICERS

1. Officers. The officers of the Corporation shall be a President/Chief Executive Officer, a Secretary, a Treasurer, and such other officers as the Board of Trustees may determine are necessary or desirable. Any two (2) or more offices may be held by the same person, except the offices of President and Secretary.

2. Election. The officers shall be elected by the Board of Trustees.

3. Qualification. Officers need not be residents of the District of Columbia and shall be eligible for re-election.

4. Tenure. An officer shall serve from the date of his or her election until his or her successor has been elected or until the effective date of his or her resignation submitted in writing to the Chairperson, his or her death, or his or her removal with or without cause by a vote of the Board of Trustees.

5. Resignation. An officer may resign at any time by giving written notice of his or her resignation to the Chairperson of the Board of Trustees. Unless otherwise specified in such notice, the resignation shall be effective upon delivery.

6. Compensation. The compensation of officers shall be fixed from time to time by the Board of Trustees.

7. Duties of Officers. Except as otherwise provided by the Board of Trustees, the officers shall have such powers and perform such duties as typically pertain to their offices, as well as such additional powers and duties as are prescribed from time to time by the Board of Trustees or (in the case of officers other than the President) by the President, and that are not inconsistent with law, the Certificate of Incorporation, or these Bylaws.

8. President/Chief Executive Officer. The President/Chief Executive Officer shall be the chief executive officer of the Corporation. The President/Chief Executive Officer is accountable for the development and execution of the various plans, programs and budgets adopted by the Board. The President/Chief Executive Officer must submit a budget annually to the Board for approval. The President/Chief Executive Officer may enter into and shall execute all contracts relating to or in furtherance of the business and other affairs of the corporation. The President/Chief Executive Officer has the authority and responsibility for recruiting, engaging and discharging all employees of the corporation including, but not limited to all executive and professional staff on an at will basis only. In exercising such authority and responsibility, the President/Chief Executive Officer shall give reasonable consideration to the appropriate balance between hiring professional staff and utilizing the services of staff from University and Network members.

The President/Chief Executive Officer shall be the official point of contact and official channel of communication between the Board and all Corporation staff members, and, in addition, shall be the official point of contact and channel of communication between the Corporation and any and all outside persons, agencies, organizations or associations. He\she shall publish whatever reports, commentaries, resolutions, position papers, or other materials the Board may from time to time dictate and shall assume such other duties or offices as the Board may from time to time delegate.

9. Secretary. The Secretary shall keep or cause to be kept the minutes of the meetings of the Board and any committees of the Board; shall be responsible for the timely preparation and delivery of all notices to be given in accordance with the provisions of these Bylaws and the Articles of Incorporation; shall be custodian of the corporate records and the seal of the Corporation (if any) and shall be responsible for authenticating the records of the Corporation; and shall perform such other duties as may be prescribed from time to time by the Board or the President.

10. Treasurer. The Treasurer shall be the legal custodian of all the corporate funds and securities; shall deposit all funds in the name of the Corporation in such bank or banks as the Board shall by resolution specify; shall keep proper account books and perform such other duties as may be prescribed from time to time by the Board or the President.

ARTICLE XII

RIGHTS OF INVESTORS

1. Connector Fees. For the portion of the year commencing at the Effective Time and continuing through June 30, 2008, there will be no fees to Investors associated with connections to the NLR Network. For the year commencing July 1, 2008, and ending June 30, 2009, there will be no fees to Investors identified in Schedule I as “Group A Investors” associated with connections to the NLR Network. For the year commencing July 1, 2008, and ending June 30, 2009, the connection fees associated with connections to the NLR Network for each Investor identified in Schedule I as a “Group B Investor” shall be \$500,000. For the portion of the year commencing at the Effective Time and continuing through December 31, 2007, the connection fees associated with connections to the optical infrastructure operated by the Corporation prior to the Effective time (the “Internet2 Network”) for each Investor will be 50 percent of the connection fees generally charged to RCs. For the period commencing January 1, 2008, and continuing through the end of the Initial Period, there will be no fees to Investors associated with connections to the Internet2 Network. Moreover, until the end of the Initial Period, Investors will receive unlimited access to all services provided by the Corporation at the maximum level including access to both optical infrastructures. If, as of the Effective Time, any Investor has prepaid connection fees associated with connections to the Internet2 Network under any contracts with the Corporation, it will receive a credit that may be applied to any connection fees (including connection fees associated with connections to the NLR Network) payable in calendar year 2008 or calendar year 2009. In exchange for those fees, Investors will receive unlimited access to all services provided by the Corporation at the maximum level including access to both optical infrastructures. Investors shall have the right during the Initial Period to enter into contracts with terms of up to five years to provision static waves on the NLR Network

at the prices charged by NLR immediately prior to the Effective Time. For the avoidance of doubt, participant fees applicable at the Effective Time to existing Internet2 members that connect through Investors, including SEGP fees, will still apply.

2. Use. Investors shall have the right to acquire from the Corporation the use of wavelengths or gigabit Ethernet “circuits,” including Ten Gigabit Wavelengths, on any of the Corporation’s network segment or segments, and on terms and conditions no less favorable than those then being offered by the Corporation to RCs or any of its similarly situated customers or end users. During the Initial Period, Investors shall have the right to acquire from the Corporation waves on the optical infrastructure acquired from NLR up to a five-year term, under the pricing structure offered by NLR immediately prior to the Effective Time, subject to the Corporation’s right of termination without breach if there is a material change or decommissioning of the optical infrastructure acquired from NLR.

3. Commitment to Full Use of IRUs. In connection with the Merger, the Corporation succeeded to the rights of NLR under the Indefeasible Right to Use agreements identified on Schedule 11. Over time, circumstances may dictate that evolution of the Corporation’s national infrastructure includes changes to the operation of given fiber segment(s) and related equipment. In the event that the Corporation ceases to operate and/or maintain a given fiber segment, with respect to the Indefeasible Right to Use agreements identified on Schedule 12, the Corporation will give written notice to all Investors promptly following its decision to cease operation and/or maintenance. Within ___ days following receipt of such notice, any Investor may, by written notice to the Corporation, request that it be permitted to use such segment. If the request for such a segment is from an Investor that is now or was within the last ninety (90) days prior to the request actively using a segment that is within or directly contiguous to its area of geographical responsibility, or if that geographical responsibility is not specified and that segment is clearly recognized as a regional network hub for such Investor, then, as determined by and in accordance with terms, conditions and procedures to be established by the Board of Trustees, that Investor has the right to keep lit or relight that segment so long as it pays any ongoing fiber maintenance, co-location, and optronics maintenance costs beyond the capital costs which the Corporation has already paid and assumes all liability relating to such segments. If the request is from an Investor or RC that is currently using the segment and the contract term for that segment is about to expire but it is not within or contiguous to the geographical responsibility area of the Investor then, as determined by and in accordance with terms, conditions and procedures to be established by the Corporation’s Board of Trustees, the RC or the Investor will be entitled to keep that segment lit or to relight it. In other cases, any Investor may appeal to the Board of Trustees for the use of any segment that the Corporation decides not to keep lit. The Board of Trustees will develop procedures for adjudicating such appeals and will not unreasonably decline such requests, granting appropriate preference to requests from Investor in the immediate vicinity of the segment in question. In the event that the Corporation assigns use of given fiber segment(s) to an Investor, that Investor will be responsible for paying all associated fiber maintenance and collocation costs for the duration of that Investor’s use of the segment(s) and shall assume all liability relating to such segments. Except as set forth in this Section, the Corporation shall not sell or otherwise divest or assign its fiber or associated equipment, or provide it under right to use agreements to other parties, without authorization by a supermajority (seventy-five percent (75%)) vote of the Board of Trustees. The rights of the Investors to use segment(s) of fiber under this Article XII, Section 3, may be

limited to the extent necessary (but solely to such extent), as determined by the Board of Trustees, to preserve the status of the Corporation as a tax-exempt charitable entity under Section 501(c)(3) of the Internal Revenue Code, as amended.

ARTICLE XIII

PRINCIPLES OF OPERATION

1. Acceptable Use Policies. The Corporation shall not implement any Acceptable Use Policy (“AUP”) for its network infrastructure and services, other than a policy that is required under applicable state or federal law such as that which is necessary to preserve the status of the Corporation as a tax-exempt charitable entity under section 501(c)(3) of the Internal Revenue Code or to fulfill the Corporation’s existing contractual obligations. End users of the Corporation’s network transport services, including but not limited to research groups and members of the Corporation may independently implement AUPs appropriate for the characteristics of their respective programs and participants.

2. Geographic Responsibility. During the Initial Period, Investors that operate regional networks will have special rights and responsibilities within the Corporation, covering their areas of geographical responsibilities as specified in Schedule 13. The Corporation shall rely upon these Investors as the primary and preferred means for connecting the Corporation’s members within regions to the Corporation’s networks and services (subject to the rights of certain other existing RCs as set forth in Schedule 14). During the Initial Period, any material change to the geographic responsibilities of Investors and other RC’s shall require a supermajority (seventy-five percent (75%)) vote of the Board of Trustees, after consultation with the affected parties and the RC Caucus.

3. Operation of Two Networks.

(a) *General.* The Corporation and NLR constituted a network planning team (the “NPT”) in connection with the Merger. As recommended by the NPT, during the first several years after the Merger, the Corporation will deploy and operate two Layer 1 infrastructures that will deliver optical waves and a range of layered services for use by members and their constituents. The optical infrastructure of NLR acquired by the Corporation in connection with the Merger will be used to provide the waves provided by NLR immediately prior to the Merger and will be used to provide future wave services. Similarly, the optical infrastructure of the Corporation will be used provide the services provided by Corporation immediately prior to the Merger and will be used to provide future wave services. Each service will be provided at fees and charges as may be determined by the Board of Trustees, after consultation with the Councils and Caucuses, consistent with an approach that sets wave prices on each network to recover the cost of providing waves on each network. The Corporation will promptly consolidate the two national IP backbone networks of NLR and the Corporation – the NLR PacketNet network and the Internet2 IP Network - into a single national IP backbone, peering network. Consistent with the recommendations of the NPT, the Corporation will also examine and optimize the provision of various services that the final report of the NPT describes as “complementary and overlapping”; in particular, Internet2 CoreDirector and HOPI services and NLR FrameNet service, as well as the various peering services currently provided by the

Corporation and NLR. The AOAC will be the primary source of advice and guidance to the Board of Trustees on the development of network infrastructure and services over time.

(b) *Discontinuation of Services.* Notwithstanding the foregoing, if the Board of Trustees determines, after consultation with the Councils and the Caucuses, that any of the services is no longer of substantial benefit to the members or their constituents, or can be provided in an equivalent or enhanced form and at no greater cost via another mechanism, the Board may authorize the discontinuance or transition of any such service provided that it will provide no less than 6 months' notice of such discontinuance and transition to all of the members. In connection with any such assessment of alternatives, the Board of Trustees shall consider not only the financial implications for the Corporation, but also the associated costs to RCs, universities and researchers.

(c) *Reporting.* As part of its annual reporting, the Corporation will produce public reports detailing the costs to operate each of the two optical infrastructures, as well as each service provided by the Corporation. The Corporation will give at least one-year's notice prior to the decommissioning of, or material change to, either optical infrastructure, at which time a full evaluation of such decommissioning or material change will be shared with the members. Moreover, in the event of any such decommissioning or material change, the Corporation will continue to honor all contracts for the use of the infrastructures, including all reasonable efforts to provide equivalent service to any contracting party displaced as a result of such decommissioning or material change.

(d) *RC Caucus.* Representatives of Investors shall be eligible to serve on the RC Caucus.

4. Partnership with Regional Connectors.

(a) *Statement of Intent.* The Corporation views RCs as the primary and preferred means for connecting the Corporation's members within regions to the Corporation's networks and services. RCs are also the primary and preferred means through which interconnection and collocation are provided in a region, as well as collaboration with and connections to other regional, national, and international networks. It is recognized that, through the approach set forth in this Section 4, strong regional networks will be forged, and all members of the Corporation accessing the Corporation's network infrastructure through an RC will benefit from economies of scale.

(b) *Access Rights.* In furtherance of the Corporation's charitable purposes, all RCs will have equitable rights of access to the Corporation's resources and services, including the resources and services offered through FiberCo. During the Initial Period, fees to RCs that are not Investors shall include a connection fee, a participation fee for each participating institution, *i.e.*, institutions passing traffic via the connection, and, optionally, a SEGP fee. During the Initial Period, persons who are not Investors shall be eligible to acquire static waves on the network acquired by the Corporation from NLR via Investors only through an Investor RC connected to such network. After the end of the Initial Period, all RCs will have access to the same service offerings at the same prices, subject to the RC's willingness and ability to make

connections to the national backbones as determined to be appropriate by the Board of Trustees of the Corporation.

(c) *No Exclusive Rights.* Subject to the rights of Investors as set forth in Section 2 of this Article, the Corporation's policy will be to seek, to the degree practical, to minimize agreements providing organizations with exclusive rights to provide connections to, or services across, the Corporation's network, and to minimize the geographic area(s) of those rights.

(d) *Adjustment of Areas of Geographic Responsibility.* Because existing RCs may choose to discontinue operating and because new RCs may emerge, the Board of Trustees will establish a process to adjust areas of geographic responsibility. During the Initial Period, any change to the geographic responsibilities of RCs shall require a supermajority (seventy-five percent (75%)) vote of the Board of Trustees. After the end of the Initial Period, proposals for adjustment of geographic responsibilities shall be presented to the Board of Trustees with the recommendations of the affected parties, the RC Caucus and the AOAC. If the Board agrees by a majority vote that such an adjustment is appropriate, then the Corporation's management will work with the concerned parties to arrive at a mutually agreeable solution. Before becoming effective, the final terms of any adjustment must receive approval from the Board of Trustees by a majority vote. The RC Caucus and the EL Caucus shall be consulted on all matters relating to relationships between and conflicts among the Corporation, an RC and members.

(e) *Connections.* In all cases, regardless of whether or not the Corporation designates an RC to be responsible for providing connections to the Corporation's network within a specified geographic area, it is a fundamental policy of the Corporation that universities, gigapops, research laboratories, organizations, networks and all other persons may choose to connect to any RC through any point of presence on the Corporation's network. Subject to the provisions of Section 2 of this Article, each RC may provide connection to the Corporation's networks and access to the Corporation's associated services on terms and conditions as shall be established by the Board of Trustees, and any member may elect to connect to the Corporation's networks through any RC.

(f) *Suspension.* Service to any RC may be suspended if (i) a majority of the Board of Trustees determines, after consultation with the affected parties and the RC Caucus that the RC's level or manner of performance impedes the Corporation's ability to fulfill its mission, or (ii) a third party that is (a) a United States-based institution of higher education or (b) a United States-based tax-exempt or governmental research laboratory (or a tax-exempt parent organization of such a research laboratory) challenges the RC's decision to not provide network services to the third party, and the Board of Trustees, by a supermajority (seventy-five percent (75%)) vote (excluding any member of the Board of Trustees that may be a representative of the RC, its affiliate or a related party) directs the RC, in furtherance of the Corporation's purpose and goals, to provide such network services to the third party, and the RC fails to connect or provide such network services to the third party within sixty (60) days after being directed to do so, provided that the network services requested by the third party and associated terms and conditions are consistent with network services provided by the RC to other third parties.

5. Scope of Services and Services Review. During the Initial Period, the Board of Trustees will conduct, with the assistance of the Corporation's executive officers and staff, a comprehensive review of the services offered by the Corporation (the "Service Review"). The goal of the Service Review will be (a) to validate the relevance of importance of all services offered, (b) to ensure the financial capability of the Corporation to deliver such services in a high quality manner, (c) to support alignment of the Corporation's staffing with its mission and direction, and (d) to provide input into any changes in the financial and membership model of the Corporation to ensure transparency of financing and member acceptance of any cross-subsidies. The Service Review will also examine and recommend processes for insuring transparency in prioritization and funding of projects, annual reviews of programs, priorities and funding by the Councils and Caucuses, and financial reporting to members (including RCs).

ARTICLE XIV FINANCIAL ADMINISTRATION; BOOKS AND RECORDS

1. Documents. All disbursements of monies or incurrence of debts on behalf of the Corporation may be undertaken by such officer(s) or agent(s) of the Corporation, and in such manner, as shall from time to time be determined by resolution of the Board of Trustees or of any committee to which such authority has been delegated by the Board of Trustees.

2. Deposits and Accounts. All funds of the Corporation not otherwise employed shall be deposited from time to time in general or special accounts in such banks, trust companies, or other depositories as the Board of Trustees or any committee to which such authority has been delegated by the Board of Trustees may select, or as may be selected by any officer(s) or agent(s) of the Corporation to whom such power may from time to time be delegated by the Board of Trustees. For the purpose of deposit and for the purpose of collection for the account of the Corporation, checks, drafts, and other orders of the Corporation may be endorsed, assigned, and delivered on behalf of the Corporation by such officer(s) or agent(s) of the Corporation as shall be determined by the Board of Trustees.

3. Corporate Books and Records. The Corporation shall keep at its principal place of business (a) the original or a duplicate record of the proceedings of the Board of Trustees and Committees, (b) the original or a copy of these Bylaws, including all amendments hereto to date, certified by the Secretary, and (c) appropriate, correct, and complete books and records of account. Promptly following the Merger, the Board of Trustees will direct the officers of the Corporation to cause the financial books and records of the Corporation to be reconciled with the books and records of NLR, and all appropriate filings with taxing authorities made.

ARTICLE XV INSURANCE AND INDEMNIFICATION

1. Insurance. The Corporation may purchase and maintain insurance on behalf of an individual who is or was a trustee, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a trustee, officer, employee or agent of another foreign or domestic corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against any liability asserted against or incurred by him or her in that capacity or

arising out of his or her status as such, whether or not the Corporation would have power to indemnify him or her against such liability pursuant to applicable law, the Articles of Incorporation, or these Bylaws.

2. Right to Indemnification. The Corporation shall, to the fullest extent required or permitted by applicable law, indemnify any person who is or was made, or is threatened to be made, a party to any actual or threatened proceeding because he or she (or his or her testator or intestate) is or was a trustee, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a trustee, officer, partner, trustee, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against judgments, fines, amounts paid in settlement, and expenses (including attorney fees) actually and reasonably incurred in connection with such proceeding if:

- (a) he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interest of the Corporation;
- (b) in the case of a criminal proceeding, he or she had no reasonable cause to believe that his or her conduct was unlawful; and
- (c) indemnification is authorized pursuant to the terms of these Bylaws.

In the case of a proceeding brought by or in the right of the Corporation, indemnification shall be limited to amounts paid in settlement and reasonable expenses (including attorneys' fees) incurred in connection with the proceeding; except that the Corporation shall not indemnify any individual under such circumstances with respect to any claim, issue, or matter as to which he or she is adjudged liable to the Corporation, unless, and only to the extent that, the court in which such proceeding is brought (or, if no proceeding is brought, any court of competent jurisdiction) shall determine upon application that, despite the adjudication of liability and in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnification for such portion of the settlement amount and expenses as the court shall deem proper.

3. Authorization of Indemnification. The Corporation shall not indemnify any individual unless and until a determination has been made that indemnification is permissible under the circumstances because the individual has met the standard of conduct set forth above in section 2 of this Article, and indemnification is authorized for the specific proceeding for which indemnification is sought. The determination that indemnification is permissible shall be made:

- (a) by the Board of Trustees by a majority vote of a quorum consisting of trustees not at the time parties to the proceeding;
- (b) if such a quorum is not obtainable, or, even if obtainable, a quorum of disinterested trustees so directs, by independent legal counsel in a written opinion.

The termination of a proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not of itself create a presumption that an individual did not meet the standard of conduct set forth above in section 2 of this Article.

Authorization that indemnification should be made for the specific proceeding for which it is sought, and an evaluation as to the reasonableness of expenses, shall also be made in the manner prescribed by subsections (a) and (b) of this section, except that, if the determination that indemnification is permissible is made by special legal counsel under subsection (b), the authorization and evaluation of the reasonableness of expenses shall be made by those persons entitled under subsection (b) to select the counsel.

4. Mandatory Indemnification. The Corporation shall indemnify any trustee, officer, employee or agent of the Corporation against expenses (including attorneys' fees) actually and reasonably incurred by him or her in defense of a proceeding referred to in section 2 of this Article, or of any claim, issue, or matter therein, to the extent such individual has been successful on the merits or otherwise.

5. Non-exclusivity of Rights. The right to indemnification and advancement of expenses conferred in this Article shall not be exclusive of any other right which any individual may have or hereafter acquire under law, the Articles of Incorporation, these Bylaws, or vote of disinterested trustees.

6. Exception. Notwithstanding anything to the contrary as set forth in these Bylaws, the Corporation shall not indemnify any person if such indemnification would otherwise result in the imposition of an excise tax under Chapter 42 of the Internal Revenue Code of 1986, as amended.

7. Repeal or Amendment. No repeal or amendment of this Article shall adversely affect any right or protection of an individual with respect to any act or omission occurring prior to such repeal or amendment.

ARTICLE XVI

ACCOUNTING PERIOD

The annual accounting period of the Corporation shall be the calendar year or such other period as fixed from time to time by the Board.

ARTICLE XVII

PROHIBITION ON LOANS

No loans shall be made by the Corporation to its trustees and officers.

ARTICLE XVIII

AMENDMENTS

The Corporation's Articles of Incorporation and these bylaws may be amended by the vote of at least two-thirds (2/3) of the trustees in office at meeting of the Board of Trustees at which a quorum is present. Notwithstanding the foregoing, the provisions of Article III - Section 2 (but only with respect to the time period beginning at the Effective Time and ending at the end

of the Initial Period), Article IV - Sections 2 and 7(a) (but only with respect to the time period beginning at the Effective Time and ending at the end of the Initial Period), Article VI - Section 2 (but only with respect to the time period beginning at the Effective Time and ending at the end of the Initial Period), Article VII - Section 2 (but only with respect to the time period beginning at the Effective Time and ending at the end of the Initial Period), Article VIII – Section 1 (but only with respect to the time period beginning at the Effective Time and ending at the end of the Initial Period), Article XII and Article XIII may not be amended without the prior written consent of a majority of the Investors.

DRAFT

**Merger Planning Team
Final Report
Appendix D: Scenarios Illuminating Financial Viability Analysis**

2008-2013	Base Case	2: Difference from Base	2: More Wave Sales - Balanced	3: Difference from Base	3: More Wave Sales - Carrier-Provid'd	4: Difference from Base	4: More Wave Sales - Comm-Provid'd	5: Difference from Base	5: More Wave Sales + New Anchor Tenants
Revenues									
Membership/core revenue	93,004	0	93,004	0	93,004	0	93,004	0	93,004
Network connections	139,017	0	139,017	0	139,017	0	139,017	(9,892)	129,125
I2 existing capacity contracts	30,000	0	30,000	0	30,000	0	30,000	0	30,000
NLR existing cap. contracts	9,925	0	9,925	0	9,925	0	9,925	0	9,925
New contracts: carrier-prov'd	16,106	21,791	37,897	44,529	60,635	(947)	16,106	25,236	41,342
New capacity, comm-provided	18,090	(3,902)	14,188	(12,415)	5,675	4,611	18,090	(3,902)	14,188
Total Rev (K)	306,142	17,889	324,031	32,114	338,257	3,664	306,142	11,442	317,585
Expenses									
Membership/core expenses	90,706	0	90,706	0	90,706	0	90,706	0	90,706
I2 Network Pgms	12,000	0	12,000	0	12,000	0	12,000	0	12,000
I2 layer-1 base	76,800	0	76,800	0	76,800	0	76,800	0	76,800
NLR layer-1 existing	54,979	0	54,979	0	54,979	0	54,979	0	54,979
Owned optronics upgrades	10,205	0	10,205	0	10,205	0	10,205	0	10,205
New capacity: carrier-prov'd	2,254	10,148	12,401	22,888	25,142	(321)	2,254	10,148	12,401
New capacity: comm-provided	10,240	(2,208)	8,031	(8,687)	1,552	3,643	10,240	(2,208)	8,031
Layer-2 & 3 networks	26,241	0	26,241	0	26,241	0	26,241	0	26,241
Total Exp (K)	283,424	7,939	291,363	14,201	297,625	3,322	283,424	7,939	291,363
Surplus/Deficit (K)	22,719	9,949	32,668	17,913	40,632	341	22,719	3,503	26,221
NPV Net (K)	11,163	6,813	17,975	12,160	23,323	333	11,163	2,603	13,765

2008-2013	Base Case	6: Difference from Base	6: Greater Aggregatn of Regional Connects	7: Difference from Base	7: Costs Don't Fall, as Tech Advances	8: Difference from Base	8: Fewer Wave Sales
Revenues							
Membership/core revenue	93,004	0	93,004	0	93,004	0	93,004
Network connections	139,017	(9,483)	129,534	0	139,017	0	139,017
I2 existing capacity contracts	30,000	0	30,000	0	30,000	0	30,000
NLR existing cap. contracts	9,925	0	9,925	0	9,925	0	9,925
New contracts: carrier-prov'd	16,106	0	16,106	0	16,106	(8,053)	8,053
New capacity, comm-provided	18,090	0	18,090	8,254	26,344	(9,045)	9,045
Total Rev (K)	306,142	(9,483)	296,659	8,254	314,396	(17,098)	289,045
Expenses							
Membership/core expenses	90,706	0	90,706	0	90,706	0	90,706
I2 Network Pgms	12,000	0	12,000	0	12,000	0	12,000
I2 layer-1 base	76,800	0	76,800	0	76,800	0	76,800
NLR layer-1 existing	54,979	0	54,979	0	54,979	0	54,979
Owned optronics upgrades	10,205	0	10,205	0	10,205	0	10,205
New capacity: carrier-prov'd	2,254	0	2,254	0	2,254	(2,019)	235
New capacity: comm-provided	10,240	0	10,240	5,095	15,335	(7,910)	2,330
Layer-2 & 3 networks	26,241	0	26,241	0	26,241	0	26,241
Total Exp (K)	283,424	0	283,424	5,095	288,519	(9,928)	273,495
Surplus/Deficit (K)	22,719	(9,483)	13,235	3,159	25,877	(7,169)	15,549
NPV Net (K)	11,163	(6,133)	5,029	1,968	13,131	(5,100)	6,063

	Base Case	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue								
	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$139,017,079	\$19,560,000	\$20,084,720	\$24,080,000	\$24,581,600	\$25,093,832	\$25,616,927
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$16,106,099	\$596,522	\$1,193,044	\$1,789,567	\$2,982,611	\$4,175,655	\$5,368,700
	New capacity, comm-provided	\$18,089,787	\$975,686	\$1,951,372	\$2,239,247	\$3,732,078	\$4,021,239	\$5,170,165
Total Revenue	\$306,142,485	\$37,565,861	\$41,080,012	\$51,053,259	\$55,883,151	\$58,547,650	\$62,012,552	
Expenses								
	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$2,253,622	\$0	\$0	\$0	\$257,518	\$671,679	\$1,324,425
	New capacity - owned	\$10,239,620	\$0	\$2,733	\$37,374	\$3,593,247	\$3,265,364	\$3,340,903
Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257	
Total Expenses	\$283,423,842	\$42,991,840	\$47,995,970	\$48,145,693	\$48,782,852	\$47,293,847	\$48,213,640	
Surplus		\$22,718,643	(\$5,425,979)	(\$6,915,959)	\$2,907,566	\$7,100,299	\$11,253,804	\$13,798,912
Cum .	Cumulative surplus/deficit	\$7,300,000	\$1,874,021	(\$5,041,938)	(\$2,134,372)	\$4,965,927	\$16,219,731	\$30,018,643
NPV	10%	\$11,162,573	Merger Planning Team ~ August 15, 2007					

	Scenario 2	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$139,017,079	\$19,560,000	\$20,084,720	\$24,080,000	\$24,581,600	\$25,093,832	\$25,616,927
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$37,896,703	\$1,403,582	\$2,807,163	\$4,210,745	\$7,017,908	\$9,825,071	\$12,632,234
	New capacity, comm-provided	\$14,188,068	\$765,244	\$1,530,488	\$1,756,272	\$2,927,120	\$3,153,913	\$4,055,031
	Total Revenue	\$324,031,371	\$38,162,479	\$42,273,246	\$52,991,463	\$59,113,490	\$63,329,740	\$68,160,953
Expenses	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$12,401,408	\$0	\$0	\$111,567	\$2,335,503	\$4,085,906	\$5,868,432
	New capacity - owned	\$8,031,309	\$0	\$27,330	\$67,952	\$2,831,117	\$2,468,346	\$2,636,565
	Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257
Total Expenses	\$291,363,317	\$42,991,840	\$48,020,567	\$48,287,839	\$50,098,707	\$49,911,055	\$52,053,309	
Surplus		\$32,668,054	(\$4,829,362)	(\$5,747,321)	\$4,703,624	\$9,014,783	\$13,418,685	\$16,107,644
Cum.	Cumulative surplus/deficit	\$7,300,000	\$2,470,638	(\$3,276,683)	\$1,426,941	\$10,441,724	\$23,860,409	\$39,968,054
NPV	10%	\$17,975,233	More Waves Sales - Balanced					

	Scenario 3	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$139,017,079	\$19,560,000	\$20,084,720	\$24,080,000	\$24,581,600	\$25,093,832	\$25,616,927
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$60,634,725	\$2,245,731	\$4,491,461	\$6,737,192	\$11,228,653	\$15,720,114	\$20,211,575
	New capacity, comm-provided	\$5,675,227	\$306,098	\$612,195	\$702,509	\$1,170,848	\$1,261,565	\$1,622,012
	Total Revenue	\$338,256,552	\$38,545,481	\$43,039,251	\$54,464,147	\$61,567,962	\$67,332,435	\$73,307,275
Expenses	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$25,141,712	\$0	\$0	\$1,118,409	\$4,961,107	\$7,956,617	\$11,105,579
	New capacity - owned	\$1,552,193	\$0	\$27,330	\$40,771	\$67,952	\$476,097	\$940,043
	Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257
Total Expenses	\$297,624,504	\$42,991,840	\$48,020,567	\$49,267,500	\$49,961,146	\$51,789,517	\$55,593,933	
Surplus		\$40,632,049	(\$4,446,359)	(\$4,981,316)	\$5,196,647	\$11,606,817	\$15,542,918	\$17,713,342
Cum.	Cumulative surplus/deficit	\$7,300,000	\$2,853,641	(\$2,127,675)	\$3,068,972	\$14,675,788	\$30,218,707	\$47,932,049
NPV	10%	\$23,322,644	More Wave Sales - Carrier-Provisioned					

	Scenario 4	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue								
	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$139,017,079	\$19,560,000	\$20,084,720	\$24,080,000	\$24,581,600	\$25,093,832	\$25,616,927
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$15,158,681	\$561,433	\$1,122,865	\$1,684,298	\$2,807,163	\$3,930,029	\$5,052,894
	New capacity, comm-provided	\$22,700,909	\$1,224,390	\$2,448,781	\$2,810,035	\$4,683,392	\$5,046,261	\$6,488,050
Total Revenue	\$309,806,190	\$37,779,476	\$41,507,241	\$51,518,779	\$56,659,017	\$59,327,045	\$63,014,631	
Expenses								
	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$1,932,749	\$0	\$0	\$0	\$196,612	\$586,411	\$1,149,725
	New capacity - owned	\$13,882,946	\$0	\$27,330	\$67,952	\$5,461,455	\$4,092,280	\$4,233,929
Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257	
Total Expenses	\$286,746,294	\$42,991,840	\$48,020,567	\$48,176,272	\$50,590,154	\$48,035,495	\$48,931,967	
Surplus		\$23,059,895	(\$5,212,364)	(\$6,513,326)	\$3,342,507	\$6,068,863	\$11,291,551	\$14,082,665
Cum.	Cumulative surplus/deficit	\$7,300,000	\$2,087,636	(\$4,425,690)	(\$1,083,183)	\$4,985,680	\$16,277,231	\$30,359,895
NPV	10%	\$11,495,425	More Wave Sales - Community-Provisioned					

	Scenario 5	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue								
	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$129,125,219	\$19,560,000	\$20,084,720	\$21,680,000	\$22,133,600	\$22,596,872	\$23,070,027
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$41,341,858	\$1,531,180	\$3,062,360	\$4,593,540	\$7,655,900	\$10,718,260	\$13,780,619
	New capacity, comm-provided	\$14,188,068	\$765,244	\$1,530,488	\$1,756,272	\$2,927,120	\$3,153,913	\$4,055,031
Total Revenue	\$317,584,667	\$38,290,077	\$42,528,443	\$50,974,258	\$57,303,481	\$61,725,969	\$66,762,439	
Expenses								
	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$12,401,408	\$0	\$0	\$111,567	\$2,335,503	\$4,085,906	\$5,868,432
	New capacity - owned	\$8,031,309	\$0	\$27,330	\$67,952	\$2,831,117	\$2,468,346	\$2,636,565
Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257	
Total Expenses	\$291,363,317	\$42,991,840	\$48,020,567	\$48,287,839	\$50,098,707	\$49,911,055	\$52,053,309	
Surplus		\$26,221,350	(\$4,701,763)	(\$5,492,124)	\$2,686,419	\$7,204,775	\$11,814,914	\$14,709,130
Cum.	Cumulative surplus/deficit	\$7,300,000	\$2,598,237	(\$2,893,888)	(\$207,469)	\$6,997,306	\$18,812,219	\$33,521,350
NPV	10%	\$13,765,080	More Wave Sales + New Anchor Tenant					

	Scenario 6	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$129,533,789	\$19,560,000	\$20,084,720	\$22,080,000	\$22,337,600	\$22,601,034	\$22,870,435
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$16,106,099	\$596,522	\$1,193,044	\$1,789,567	\$2,982,611	\$4,175,655	\$5,368,700
	New capacity, comm-provided	\$18,089,787	\$975,686	\$1,951,372	\$2,239,247	\$3,732,078	\$4,021,239	\$5,170,165
	Total Revenue	\$296,659,196	\$37,565,861	\$41,080,012	\$49,053,259	\$53,639,151	\$56,054,852	\$59,266,061
Expenses	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$2,253,622	\$0	\$0	\$0	\$257,518	\$671,679	\$1,324,425
	New capacity - owned	\$10,239,620	\$0	\$2,733	\$37,374	\$3,593,247	\$3,265,364	\$3,340,903
	Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257
Total Expenses	\$283,423,842	\$42,991,840	\$47,995,970	\$48,145,693	\$48,782,852	\$47,293,847	\$48,213,640	
Surplus		\$13,235,353	(\$5,425,979)	(\$6,915,959)	\$907,566	\$4,856,299	\$8,761,005	\$11,052,421
Cum.	Cumulative surplus/deficit	\$7,300,000	\$1,874,021	(\$5,041,938)	(\$4,134,372)	\$721,927	\$9,482,932	\$20,535,353
NPV	10%	\$5,029,107	Greater Aggregation of Regional Connectors					

	Scenario 7	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$139,017,079	\$19,560,000	\$20,084,720	\$24,080,000	\$24,581,600	\$25,093,832	\$25,616,927
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$16,106,099	\$596,522	\$1,193,044	\$1,789,567	\$2,982,611	\$4,175,655	\$5,368,700
	New capacity, comm-provided	\$26,343,525	\$975,686	\$1,951,372	\$2,927,058	\$4,878,431	\$6,829,803	\$8,781,175
	Total Revenue	\$314,396,223	\$37,565,861	\$41,080,012	\$51,741,071	\$57,029,503	\$61,356,214	\$65,623,562
Expenses	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$2,253,622	\$0	\$0	\$0	\$257,518	\$671,679	\$1,324,425
	New capacity - owned	\$15,334,661	\$0	\$2,733	\$37,374	\$4,625,245	\$5,309,103	\$5,360,207
	Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257
Total Expenses	\$288,518,882	\$42,991,840	\$47,995,970	\$48,145,693	\$49,814,850	\$49,337,585	\$50,232,944	
Surplus		\$25,877,341	(\$5,425,979)	(\$6,915,959)	\$3,595,378	\$7,214,653	\$12,018,629	\$15,390,619
Cum.	Cumulative surplus/deficit	\$7,300,000	\$1,874,021	(\$5,041,938)	(\$1,446,560)	\$5,768,093	\$17,786,722	\$33,177,341
NPV	10%	\$13,130,815	Costs Don't Fall as Technology Advances					

	Scenario 8	Total through 2013	2008	2009	2010	2011	2012	2013
Revenue	Membership/core revenue	\$93,004,229	\$ 12,250,000	\$ 12,617,500	\$ 16,286,521	\$ 16,775,117	\$ 17,278,370	\$ 17,796,721
	Network connections	\$139,017,079	\$19,560,000	\$20,084,720	\$24,080,000	\$24,581,600	\$25,093,832	\$25,616,927
	I2 existing capacity contracts	\$30,000,000	\$3,000,000	\$4,000,000	\$5,000,000	\$6,000,000	\$6,000,000	\$6,000,000
	NLR existing cap. contracts	\$9,925,292	\$1,183,653	\$1,233,375	\$1,657,925	\$1,811,745	\$1,978,554	\$2,060,040
	New contracts: carrier-prov'd	\$8,053,049	\$298,261	\$596,522	\$894,783	\$1,491,305	\$2,087,828	\$2,684,350
	New capacity, comm-provided	\$9,044,893	\$487,843	\$975,686	\$1,119,623	\$1,866,039	\$2,010,620	\$2,585,082
	Total Revenue	\$289,044,542	\$36,779,757	\$39,507,803	\$49,038,853	\$52,525,806	\$54,449,203	\$56,743,120
Expenses	Membership/core expenses	\$90,705,768	\$ 15,500,000	\$ 15,345,000	\$ 15,191,550	\$ 15,039,635	\$ 14,889,238	\$ 14,740,346
	I2 Network Pgm expenses	\$12,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
	I2's layer-1 base	\$76,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
	NLR's layer-1 existing	\$54,979,028	\$8,683,917	\$8,850,597	\$9,021,813	\$9,243,875	\$9,472,116	\$9,706,709
	Owned optronics upgrade	\$10,204,940	\$0	\$5,102,470	\$5,102,470	\$0	\$0	\$0
	New capacity - leased	\$234,756	\$0	\$0	\$0	\$3,187	\$58,532	\$173,038
	New capacity - owned	\$2,330,001	\$0	\$0	\$0	\$66,446	\$692,081	\$1,571,474
	Layer-2 & 3 networks	\$26,240,863	\$4,007,923	\$3,895,170	\$3,992,487	\$5,848,577	\$4,195,450	\$4,301,257
Total Expenses	\$273,495,357	\$42,991,840	\$47,993,237	\$48,108,320	\$45,001,719	\$44,107,417	\$45,292,824	
Surplus		\$15,549,186	(\$6,212,083)	(\$8,485,434)	\$930,533	\$7,524,087	\$10,341,787	\$11,450,296
Cum.	Cumulative surplus/deficit	\$7,300,000	\$1,087,917	(\$7,397,517)	(\$6,466,984)	\$1,057,103	\$11,398,889	\$22,849,186
NPV	10%	\$6,062,902	Fewer Wave Sales					