

QUARTERLY PERFORMANCE PROGRESS REPORT FOR BROADBAND INFRASTRUCTURE PROJECTS

General Information

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| 1. Federal Agency and Organizational Element to Which Report is Submitted Department of Commerce, National Telecommunications and Information Administration | 2. Award Identification Number NT10BIX5570075 | 3. DUNS Number 969524214 |
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4. Recipient Organization

 University Corporation For Advanced Internet Development 1150 18th Street, NW, #1020, Washington, DC 20036-3825

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| 5. Current Reporting Period End Date (MM/DD/YYYY) 03-31-2011 | 6. Is this the last Report of the Award Period? <input type="radio"/> Yes <input checked="" type="radio"/> No |
|--|---|

7. Certification: I certify to the best of my knowledge and belief that this report is correct and complete for performance of activities for the purposes set forth in the award documents.

| | |
|--|---|
| 7a. Typed or Printed Name and Title of Certifying Official Nili Tannenbaum | 7c. Telephone (area code, number and extension) X |
| | 7d. Email Address ntannen@internet2.edu |

| | |
|---|--|
| 7b. Signature of Certifying Official Submitted Electronically | 7e. Date Report Submitted (MM/DD/YYYY): 05-12-2011 |
|---|--|

Project Indicators (This Quarter)

1. Please describe significant project accomplishments completed during this quarter (600 words or less).

Contracts

Internet2 executed additional contracts with Level3 communications to provide additional support for optical equipment installation, remote hands, and monitoring. Internet2 also executed a purchasing agreement with Ciena Networks to provide the majority of optical equipment on the acquired dark fiber.

Dark Fiber and Optical Network Implementation

Internet2 began close collaboration with Level3, Indiana University, and Ciena networks to begin implementing the first phase of the optical build. This included:

- ordering and beginning colocation build-outs along the phase 1 footprint
- coordinating on a management network topology
- developing finalized optical network analysis and implementation details
- coordinating equipment installation and management training
- receipt and inventory of initial phase 1 optical purchases
- splicing the phase 1 optical system at various points to align with the acquired footprint
- transmission of fiber loss data to Internet2 for review
- receipt and installation of a lab environment

IP Network Implementation

In February, Internet2 began the process of installing the Juniper T-1600 routers that were purchased in the PY1Q2. At six Internet2 core nodes, these routers will replace the Juniper MX960 routers that were previously providing Internet2 backbone services. In each city, the MX960 node will be repurposed into the Internet2 TR-CPS network that provides Commodity Internet peering service to Internet2 members. In addition, Internet2 will be installing a new T-1600 in Cleveland, where no prior Internet2 node existed. Internet2 installed four T-1600 routers and redeployed four MX960 routers in PY1Q3. The remaining routers will be replaced in PYQ4.

2. Please provide the percent complete for the following key milestones in your project. Write "0" in the Percent Complete column and "N/A" in the Narrative column if your project does not include this activity. If you provided additional milestones in your baseline plan, please insert them at the bottom of the table. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the most recent reporting quarter. Please provide a narrative description if the percent complete is different from the target provided in your baseline plan (300 words or less).

| | Milestone | Percent Complete | Narrative (describe reasons for any variance from baseline plan or subsequent written updates provided to your program officer) |
|-----|--|------------------|---|
| 2a. | Overall Project | 23 | The overall project, in terms of expenditures, is lagging slightly for this particular quarter due to the length of time required to finalize major contracts, as well as the need to realign our rate of purchases so that we do not incur operations costs for facilities longer than required before they have been put in production. We are, however, making progress in improving this metric and expect to have expenditures on plan by the end of the year. |
| 2b. | Environmental Assessment | 0 | NA |
| 2c. | Network Design | 100 | NA |
| 2d. | Rights of Way | 0 | NA |
| 2e. | Construction Permits and Other Approvals | 0 | NA |
| 2f. | Site Preparation | 0 | NA |
| 2g. | Equipment Procurement | 24 | Finalizing contracts has been an issue for equipment purchase |
| 2h. | Network Build (all components - owned, leased, IRU, etc) | 5 | We're slightly ahead on this metric, due to activities related to upgrading the peering portion of the network facilities. |
| 2i. | Equipment Deployment | 10 | NA |
| 2j. | Network Testing | 0 | NA |
| 2k. | Other (please specify): | 0 | NA |

3. To the extent not covered above, please describe any challenges or issues faced during this past quarter in achieving planned progress against the project milestones listed above. In particular, please identify any areas or issues where technical assistance from the BTOP program may be useful (600 words or less).

No additional challenges or issues have been faced during this past quarter in achieving planned progress against project milestones.

4. Please report the following information regarding network build progress. Write "0" in the Total column and "N/A" in the Narrative column if your project does not include this activity. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the most recent reporting quarter. Please provide a narrative description if the total is different from the target provided in your baseline plan (600 words or less).

| Indicator | Total | Narrative (describe your reasons for any variance from the baseline plan or any other relevant information) |
|--|-------|---|
| New network miles deployed | 0 | NA |
| New network miles leased | 0 | We expect to accept approximately 4,626 miles of IRU segments during 2011 Q2. |
| Existing network miles upgraded | 0 | NA |
| Existing network miles leased | 0 | NA |
| Number of miles of new fiber (aerial or underground) | 0 | NA |
| Number of new wireless links | 0 | NA |
| Number of new towers | 0 | NA |
| Number of new and/or upgraded interconnection points | 0 | NA |

For questions 5 and 6 please include information relating to agreements that you are negotiating or have entered into, or that your sub recipient, contractor or subcontractor is negotiating or entered into.

5a. If applicable, please provide the following information with regard to agreements with broadband wholesalers and/or last mile providers as a result of your project.

| Indicators | |
|---|---|
| Number of signed agreements with broadband wholesalers or last mile providers | 0 |
| Number of agreements currently being negotiated with broadband wholesalers or last mile providers | 0 |
| Average term of signed agreements (in quarters) | 0 |

5b. Please list the names of the wholesale and last mile providers with whom you have signed agreements (100 words or less). Providers:
NA

5c. What wholesale services are being provided by this project? Please describe below. As an attachment to this report, please provide pricing plans (in \$ per month) associated with each wholesale service provided by your product (100 words or less). Wholesale services description:

Two 5 gigabit network connections \$32,500/mo
One 10 gigabit network connection \$41,600/mo
Two 10 gigabit network connections \$45,500/mo

5d. If you have designated a third party to operate all or a portion of your network, please provide the name and contact information for this third party, indicate if this entity is a sub recipient, contractor, and/or subcontractor, and describe with specificity the portion of your network this third party operates (600 words or less).

The Indiana University Global Research Network Operations Center, sub recipient of the project, operates the network on the behalf of Internet2. Their contact information follows:
Dave Jent
Associate Vice President for Networks

Global Research Network Operations Center
 535 W. Michigan St
 Indianapolis, IN 46202
 USA
 Phone: (317) 274-7788
 Email: globalnoc@iu.edu

6. Please provide the data according to the type of subscriber. Write "0" in the Total column and "N/A" in the Narrative column if your project does not pass or serve a particular subscriber type. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the most recent reporting quarter. Please provide a narrative description if the total is different from the target provided in your baseline plan (300 words or less).

| Subscriber Type | Access Type | Total | Narrative (describe your reasons for any variance from the baseline plan or any other relevant information) |
|---|---|-------|--|
| Broadband Wholesalers or Last Mile Providers | Providers with signed agreements receiving new access | 0 | NA |
| | Providers with signed agreements receiving improved access | 20 | The project had anticipated one of the providers splitting into two providers, resulting in an increase in the number. This did not occur. |
| | Providers with signed agreements receiving access to dark fiber | 0 | NA |
| | Please identify the speed tiers that are available and the number of subscribers for each | 3 | 5 subscribers of two 5 gigabit network connections 6 subscribers of one 10 gigabit network connections 9 subscribers of two 10 gigabit network connections |
| Community Anchor Institutions (including Government institutions) | Total subscribers served | 0 | NA |
| | Subscribers receiving new access | 0 | NA |
| | Subscribers receiving improved access | 0 | NA |
| | Please identify the speed tiers that are available and the number or subscribers for each | 0 | NA |
| Residential / Households | Entities passed | 0 | NA |
| | Total subscribers served | 0 | NA |
| | Subscribers receiving new access | 0 | NA |
| | Subscribers receiving improved access | 0 | NA |
| | Please identify the speed tiers that are available and the number of subscribers for each | 0 | NA |
| Businesses | Entities passed | 0 | NA |
| | Total subscribers served | 0 | NA |
| | Subscribers receiving new access | 0 | NA |
| | Subscribers receiving improved access | 0 | NA |
| | Please identify the speed tiers that are available and the number of subscribers for each | 0 | NA |

7. Please describe any special offerings you may provide (600 words or less).

The project offers native IPv6 and IP multicast access in addition to the normal IPv4 connectivity.

8a. Have your network management practices changed over the last quarter? Yes No

8b. If so, please describe the changes (300 words or less).

NA

9. Community Anchor Institutions:

Using the table below, please provide a list by service area of the community anchor institutions (including Government institutions) connected to your network as a result of BTOP funds. Figures should be reported for the most recent reporting quarter only (NOT cumulatively). Also indicate whether your organization is currently providing broadband service to the anchor institution. Finally, provide a short narrative description with examples of how institutions are using BTOP-funded infrastructure (300 words or less).

| Institution Name | Service Area (town or county) | Type of Anchor Institution (as defined in your baseline) | Are you also the broadband service provider for this institution? (Yes / No) | Narrative description of how anchor institutions are using BTOP-funded infrastructure |
|------------------|-------------------------------|--|--|---|
| NA | NA | NA | NA | NA |

Project Indicators (Next Quarter)

1. Please describe significant project accomplishments planned for completion during the next quarter (600 words or less).

Dark Fiber and Optical Network Implementation

Internet2 anticipates receipt of all remaining fiber test data on the Phase 1 optical footprint. Level3 will begin installation of the Ciena ActiveFlex 6500 optical network beginning on the east coast. From there, they will move westward along the Phase 1 optical footprint. System installation will include physical installation of the nodes, cabling, system configuration, external reachability, documentation and system testing.

Systems engineers from Internet2 and the Internet2 NOC at Indiana University will be working closely to develop backoffice systems that will provide management and monitoring of the optical network build once it's complete. This includes the final engineering of a management IP network that will provide a data communications path between the Internet2 and Level3 network operations centers, as well as systems development to integrate device alarms with each organization's existing monitoring systems. Ciena and Internet2 engineers will also be participating in Ciena installation and management training classes prior to network installation and turnup.

IP Network Implementation

Internet2 will continue the process of installing the Juniper T-1600 routers in the remaining three colocation facilities: Atlanta, New York and Cleveland. This will position Internet2's IP network to provide 100GigE IP backbone circuits when the Phase I optical build is complete. Because of the shorter reach of the initial 100G cards from Ciena, Internet2 intends to light only the path from New York to Chicago via Washington DC and Cleveland in PY1Q4. Internet2 will also complete the transition to the MX960 platform on its TR-CPS network.

2. Please provide the percent complete for the following key milestones in your project. Write "0" in the Planned Percent Complete column and "N/A" in the Narrative column if your project does not include this activity. If you provided additional milestones in your baseline plan, please insert them at the bottom of the table. Unless otherwise indicated in the instructions, figures should be reported cumulatively from award inception to the end of the next reporting quarter. Please provide a narrative description if the percent complete is different from the target provided in your baseline plan (300 words or less).

| | Milestone | Planned Percent Complete | Narrative (describe reasons for any variance from baseline plan or any other relevant information) |
|-----|--|--------------------------|---|
| 2a. | Overall Project | 43 | The overall project, in terms of funds spent, is lagging slightly for this particular quarter due to the length of time required to finalize major contracts, as well as the need to realign our rate of purchases so that we do not incur operations costs for facilities longer than required before they have been put in production. We are, however, making progress on improving this metric and expect to have expenditures be on plan by the end of the year. |
| 2b. | Environmental Assessment | 0 | NA |
| 2c. | Network Design | 100 | NA |
| 2d. | Rights of Way | 0 | NA |
| 2e. | Construction Permits and Other Approvals | 0 | NA |

| | Milestone | Planned Percent Complete | Narrative (describe reasons for any variance from baseline plan or any other relevant information) |
|-----|---|--------------------------|--|
| 2f. | Site Preparation | 0 | NA |
| 2g. | Equipment Procurement | 46 | We expect to bring this on plan by end of the year. |
| 2h. | Network Build (all components - owned, leased, IRU, etc.) | 70 | We expect to bring this on plan by end of the year. |
| 2i. | Equipment Deployment | 30 | We expect to bring this on plan by end of the year. |
| 2j. | Network Testing | 0 | NA |
| 2k. | Other (please specify): | 0 | NA |

3. Please describe any challenges or issues anticipated during the next quarter that may impact planned progress against the project milestones listed above. In particular, please identify any areas or issues where technical assistance from the BTOP program may be useful (600 words or less).

No challenges or issues are anticipated during the next quarter that may impact planned progress against the project milestones.

