Abilene Update
Joint Techs – Winter 2006
Univ. of NM
Albuquerque, NM

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Director, Network Services
Internet2
Agenda

• FiberCo Overview
• List of RONs
• New FiberCo Offering
• Additional Info
FiberCo Overview

A tool designed to support optical initiatives nationally
- Spun off from NLR governance discussions
- Internet2 took responsibility for forming the LLC
- Operates on behalf of U.S. higher education and affiliates – Internet2 & NLR members

Not an operating entity
- Will not light the fiber – only a holding company

Functions as market maker
- Assignment vehicle for both national & regional optical initiatives
- Services to assist RONs and universities to build, maintain and operate optical networking infrastructure
FiberCo Overview

Dark Fiber provider: Level3 Communications
- 3 year pricing agreement ends March ‘06
- Intercity and metro fiber, new builds at reduced rate
- Continuing discussions on plans post March ‘06

How does FiberCo work?
- FiberCo assigns both the fiber IRU asset and recurring O&M agreements through an assignment agreement
  - 3-way among FiberCo, Level3 & assignee
  - Assignee has option to waive preferred provider relationship for future fiber acquisitions
- FiberCo Transaction fee (1/yr): charged for cost recovery since we don’t mark up the fiber
FiberCo Overview

IRU and O&M Contracts

- 20-year IRU agreements
- 5-year renewable agreement for fiber O&M
  - Includes equipment co-location & power
  - 5 years terms meant to coincide with the expected life-cycle of the optronics
- Contracts are pre-negotiated with the needs of the R&E community in mind
## FiberCo Overview

<table>
<thead>
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<th>Level 3</th>
<th>Genuity</th>
<th>Metro</th>
<th>Total</th>
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<td>241</td>
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<td>NLR, Inc.</td>
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<td>Michigan</td>
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<td>Internet2</td>
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<tr>
<td>Texas</td>
<td>318</td>
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<tr>
<td>CANARIE</td>
<td>1,368</td>
<td>-</td>
<td>58</td>
<td>1,426</td>
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<td><strong>Total strand miles:</strong></td>
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<td><strong>Minus redundant</strong></td>
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<td>982</td>
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<tr>
<td><strong>Total route miles:</strong></td>
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</table>
Regional Optical Networks

- **Alabama** (Univ Alabama)
- **Arizona** (CENIC)
- **Arkansas** (AREON)*
- **California** (CALREN)
- **Colorado** (FRGP/BRAN)
- **Connecticut** (Conn. Education Network)
- **Florida** (Florida LambdaRail)
- **Georgia** (Southern Light Rail)
- **Great Plains Network** (MIDnet)
- **Indiana** (I-LIGHT)
- **Illinois** (I-WIRE)
- **Kansas** (KU, KSU)*
- **Louisiana** (LONI)
- **Massachusetts**
- **Maryland, D.C. & northern Virginia** (MAX)
- **Michigan** (MiLR)
- **Minnesota/Iowa/Wisconsin** (BOREAS)*
- **Missouri** (MOREnet/UMo)*

- **Nebraska** (UNL)*
- **New England region** (NEREN)
- **New Mexico** (NMSU, UNM)
- **New York** (NYSERNet*, Cornell)
- **North Carolina** (NC LambdaRail)
- **Ohio** (Third Frontier Network)
- **Oklahoma** (OneNet)
- **Oregon**
- **Pacific Northwest** (Lariat, PNNL)
- **Rhode Island** (OSHEAN)
- **South Eastern U.S.** (SRONs)
- **Tennessee** (OneTenn/ORNL)
- **Texas** (LEARN)
- **Virginia** (MATP)*
- **Wisconsin** (WiscNet/WiscWaves)
- **Wyoming**

**Canada**
- **CANARIE** (for partnership with Michigan/New York and others)
  (RONs in red have made dark fiber acquisitions through FiberCo)

(*RON/universities with RFx’s issued or in process of acquiring fiber)
FiberCo Professional Services

- The Research and Education community’s networking needs have grown beyond basic lit services offered by service providers - requiring many to acquire their own dark fiber.

- Providing optical services to campuses and researchers requires Carrier-Class Services and Reliability.

- As a service to the members of Internet2 and National LambdaRail, FiberCo now offers customized services to assist universities and regional networks with planning, installation, management and operations of their networking infrastructure.

- Expanding FiberCo’s longstanding relationship with Level3 beyond dark fiber to include professional services - a ‘cradle to grave’ service for our members.
FiberCo Professional Services

- Draws upon Level3’s highly-experienced team of networking professionals who have installed and managed optical networks for years.
  - Same team that installed & turned up NLR’s Phase II network
- Pre-negotiated contracts tailored to meet the unique needs of the Research and Education community
- Aggressive FiberCo pricing:
  - Negotiated rates lower than standard educational pricing market pricing and significantly under current market pricing
  - A la carte set of services (can pick and choose)
- FiberCo will provide Project Management and oversight (Audit/Quality Assurance) on professional services to ensure our members’ needs are met.
FiberCo Professional Services

Pre Installation Support:

- Level3’s optical engineers and network designers will perform network architecture and route design, transmission engineering and optronics requirements determination, conduct fiber characterizations.

Installation and Implementation Services:

- Manage build-out logistics; conduct detailed site engineering and installation prep, perform site and route staging and test and turn-up services; route commissioning and as-built documentation.
FiberCo Professional Services

Order Management and Asset Tracking:
- Order entry and asset inventory; development of processes and procedures for provisioning inventory, billing and orders.
- Level3 will work with customer to eventually migrate services to university/RON NOC as they gain necessary experience.

24 x 7 x 365 Operations Support (Shared NOC):
- Including network monitoring and maintenance management; fault isolation and troubleshooting, field services dispatching; provisioning and lifecycle engineering; service initiation, sparing requirements, equipment maintenance.
Additional Info

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