

Steve Corbató, University of Utah
EPSCoR State Committee Meeting – 18 June 2012

Utah EPSCoR RII Cyber Connectivity Project Update

Cyber Connectivity Award



- Special EPSCoR program based on ARRA funding
- Collaboration partners: UofU, USU, BYU, and UEN
- Award: \$1.17M (9/1/2010 for two years)
 - One-year no-cost extension granted through 8/31/2013
 - Better coordination with Tracks -1 and -2 outreach efforts
- Leadership
 - S. Corbató (PI) and Jim Ehleringer, U. of Utah
 - Larry Baxter and Kelly McDonald, BYU
 - Mike Petersen, UEN (left for USU/**seeking new UEN ED**)
- Key partners
 - Eric Hawley and Robert Spall, USU
 - Jim Stewart and Laura Hunter, UEN

Why build an optical network?



- Research capacity and competitiveness
 - Matching network capacity to the research data explosion and remote collaboration demands by providing greater capacity and scalability
 - 30 Gbps at outset
 - 10 Tbps maximum
 - Enhancing competitiveness for research funding and faculty hiring
 - Enhancing potential for in-state collaboration with UofU and BYU
 - Joint NSF EPSCoR proposals
 - Utah Field Station Network
 - Interconnection with new 100-Gbps U.S. UCAN network
- Economics
 - Buying vs. renting - home/condo ownership analog
 - Additional network capacity can be added at incremental cost
 - Customer (UEN & USU) control of bandwidth, provisioning, and services
 - Trend toward customer ownership & control of networks in higher education
- Technology
 - Ability to innovate in new network technologies
 - Support for new applications
 - Support for enhanced disaster recovery capabilities

RII C2 Project Components



- Regional optical network development
 - SLC metro
 - Provo (BYU)
- Network upgrades for campus HPC facilities
 - UofUtah
 - USU
 - BYU
- Outreach and engagement
- Complemented by UEN NTIA BTOP award (\$13.4M)
 - SLC metro optical network – additional funding
 - Logan (USU)
- Follow-on grants: GENI Spiral 3 and NOAA N-Wave

Regional Optical Network Development in Utah



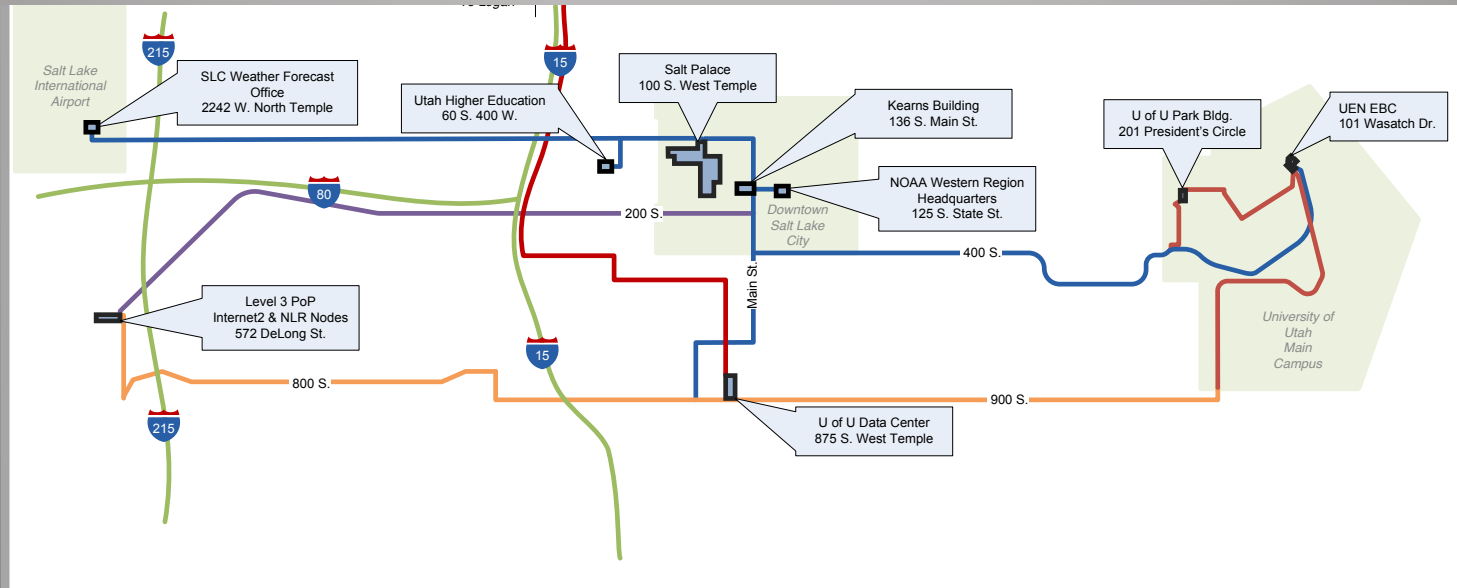
- Collaboration of Utah Education Network (UEN) , Univ. of Utah, Utah State, and Brigham Young Univ.
 - Leverage UEN operational capability & statewide reach
- Motivations
 - New University off-campus data center in downtown SLC
 - Reach national R&E networks (Internet2, ESnet, N-Wave) at SLC Level 3 PoP at 100 Gbps
 - Enhanced interconnectivity among 3 research universities in Utah – BYU, USU, and UofU
 - **Connect federal R&D partners: NOAA/NWS, USFS RSAC**

Regional Optical Network Development in Utah - II



- Leverage public sector partner assets (fiber & conduit) wherever possible
 - UDOT (Interstate/state highway RoW)
 - Utah Transit Authority (UTA/TRAX light rail)
- Work with wholesale oriented carriers (e.g., Zayo, Syringa)
- Leverage federal stimulus funding
 - NSF EPSCoR RII Cyber Connectivity award - \$1.18M (S. Corbató, U of Utah)
 - NTIA BTOP Round 1 award - \$13.4M (M. Petersen/ D. Sampson, UEN) – revised statement of work

Salt Lake City metro optical network



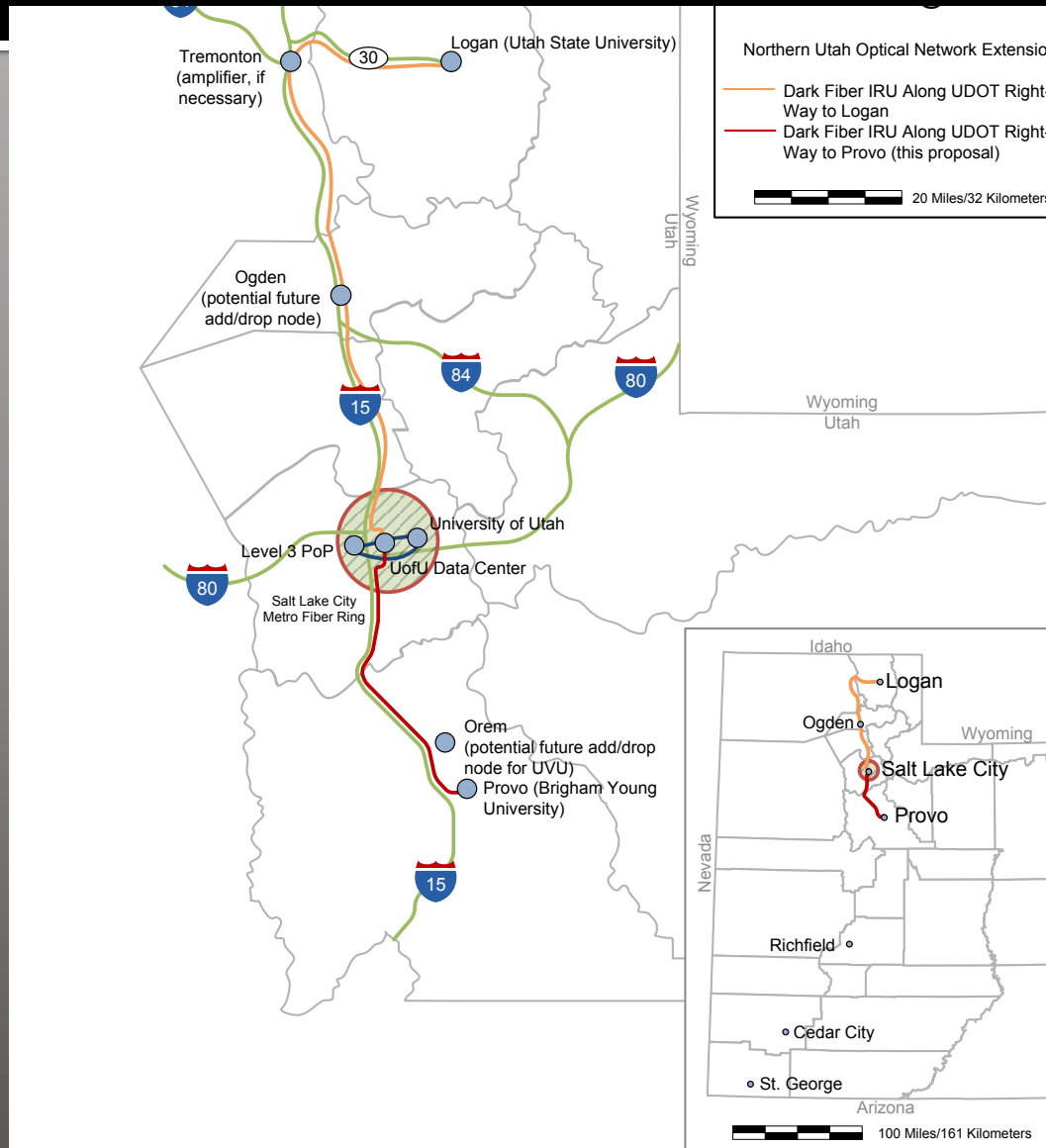
Research@UEN: Salt Lake City Metro Optical Network

- U of U Campus Fiber —
- UTA Light Rail Routes (proposed) —
- CENIC/LLC Fiber IRU (through AFS) —
- AFS Fiber IRU (proposed) —
- Northern Utah Extension (proposed) —

1 Mile

Carrier proprietary information included

Extensions for USU and BYU



Outreach and engagement



- Original plan leveraged Track-1 proposal
- Laura Hunter of UEN has taken point
- Objective is to tell the Utah networking story to general public and especially, K-12 students
- Program components
 - Web site
 - Video production
 - Internship
- Focusing on materials tied to SC12



SC12
Salt Lake City, Utah

November 10-16, 2012



- November 10-16, 2012 – Salt Palace
 - International conference and exhibition for HPC & computational science
- >10K attendees and >160K sf exhibit space
 - General chair: Jeff Hollingsworth, U Maryland
 - SCinet chair: Linda Winkler, Argonne National Lab
 - Jim Stewart & Kevin Quire, UEN
 - Exhibits: Mary Hall & Steve Corbato, Univ. of Utah

<http://sc12.supercomputing.org/>



Questions?



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