

The Internet2 Vendor Alliance Committee (VAC)
Presents Informational briefings for RHCPP
awardees
The 5th webinar:

Connecting Your Rural Health Network to Internet2 and the Public Internet

Will begin at 2:00 pm EDT
UTC/GMT -5

It is our goal to maintain a vendor neutral space for these briefings.
Providing an overview of technology without preference.



Welcome to the 5th RHCPP VAC webinar

Wednesday August 26, 2009
2:00 pm EDT (UTC/GMT -5)



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Presents Informational briefings...

Connecting Your Rural Health Network to Internet2 and the Public Internet

August 26, 2009

It is our goal to maintain a vendor neutral space for these briefings.
Providing an overview of technology without preference.



Our speakers today are affiliated with:

Internet2

Regional Optical Networks:

LEARN

MOREnet



Steven Wallace

Consultant to Internet2

Steven is the director of the Advanced Network Management Lab at Indiana University and a consultant to Internet2. Steven's experience includes network design, cybersecurity research, security policy development, programming, and project management.



Akbar Kara

Chief Technologist (LEARN)

Akbar Kara is a seasoned professional with fifteen years of experience in Internetworking. After serving and building networks in healthcare and academic environments, he joined LEARN in Spring of 2006 and has focused on technical as well as strategic issues in building and operating a statewide high speed network in Texas. At the M.D. Anderson Cancer Center in Houston, he was invited to advise the CIO's team and tasked to develop and deliver a comprehensive IT infrastructure strategy. He has also served as a technical director to Columbia University Medical Center (CUMC) and New York Presbyterian Hospital (NYPH), a major healthcare provider serving the greater New York area. He broke the cycle of escalating transport cost by developing and implementing a state-of-the-art, 14-node optical network for the enterprise, which continues to pay dividends today. List of credentials include the highly coveted CCIE certification from Cisco Systems and Bachelor of Electrical Engineering from City College of New York.

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Hank Niederhelm

Director of Infrastructure, MOREnet

Hank Niederhelm is the Director of Infrastructure for the Missouri Research and Education Network (MOREnet), a division of the University of Missouri. He is responsible for the Network Services, Systems & Programming, and Database Services teams. His teams are responsible for providing all NOC, server administration, and application development functions for MOREnet.

He has been with MOREnet for 13 years filling many management roles and holds a Bachelor of Science degree in Business Administration from Columbia College.



AGENDA

Conneting HIEs to Internet2 and the Public Internet
Steven Wallace, Internet2

Proposed Texas Healthcare Intranet
Akbar Kara, LEARN

Missouri Telehealth Network (MTN)
Hank Niederhelm, MOREnet

Discussion / Q&A

Conneting HIEs to Internet2 and the Public Internet

Steven Wallace

Internet2



Modes for Telehealth Networking

- Real-time (e.g., video conferencing, telesurgery, etc.)
- Asynchronous aka store-and-forward (e.g, image transfer, clinical messaging, etc.)

The Public Internet and Internet2

- All organizations connected to Internet2 also connect to the public Internet
- Special engineering required at the intersection of the connections to Internet2 and public Internet
 - May be addressed by upstream provider (i.e., regional network)
 - If not, Internet2 staff are a resource for assisting in understanding this issue (please e-mail me)



Connecting to Internet2

- The Internet2 backbone inter-connects regional networks (aka “Internet2 Connectors”)
- RHCPP Networks will attach to Internet2 Connectors
- Internet2 can assist in identifying an appropriate Internet2 Connector

Network Topologies

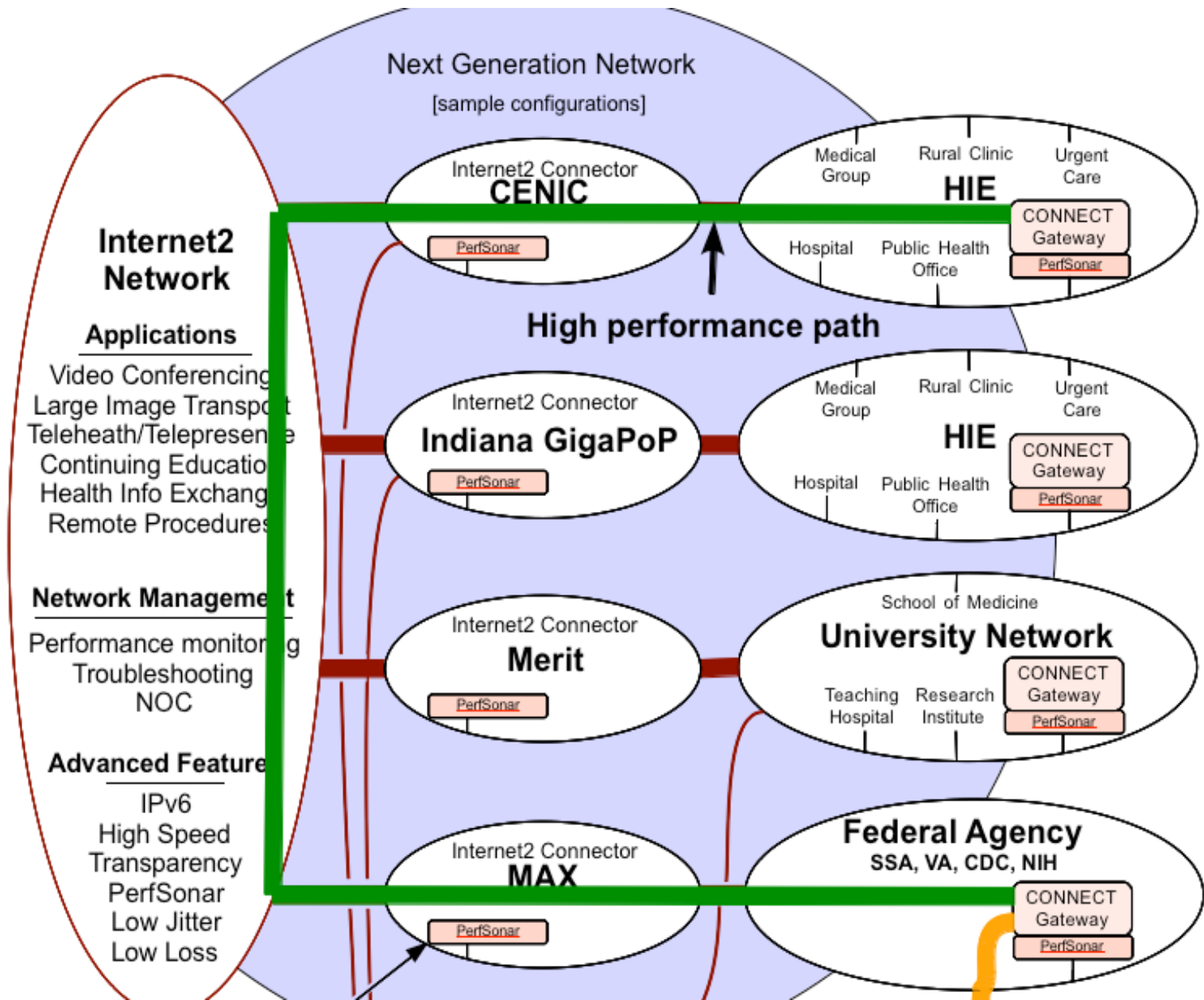
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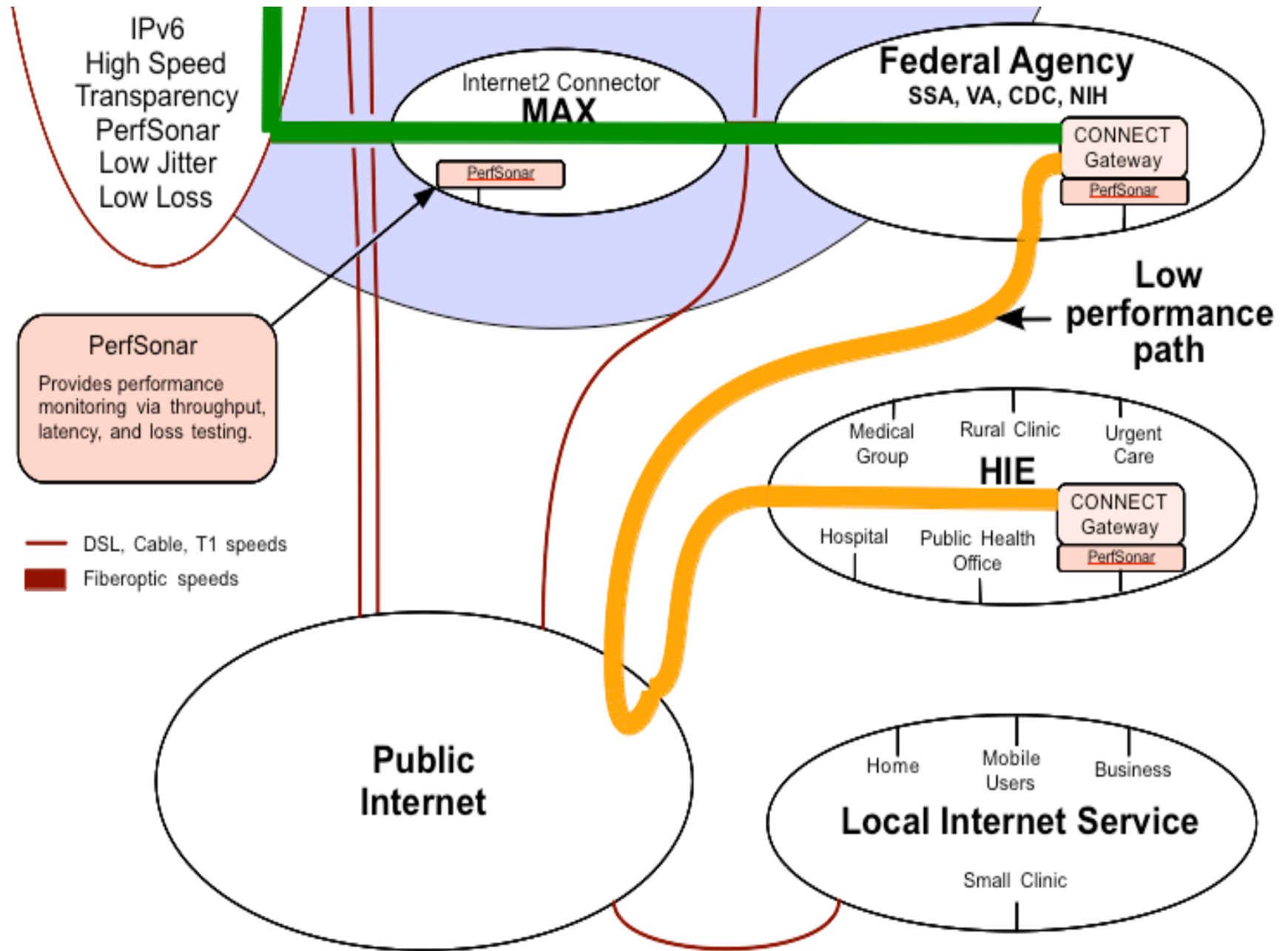
Internet2 and Security

- The same security practices that apply to the public Internet apply to Internet2.

Benefit of using Internet2

- Suitable for real-time telehealth applications
- Faster for asynchronous telehealth applications
- Community understands and shares expectations for performance network
- Advanced services such as IPv6 and IP multicast





Health and Human Services

“Nationwide Health Information Network”

- The NHIN is not a new or separate IP network, rather it represents a set of interconnected servers that employ common protocols to exchange health information
- NHIN servers are known as “NHIN Gateways”
- The federal agency version of the NHIN Gateway is known as “NHIN CONNECT Gateway”
- NHIN Connect Gateways will benefit



LEARN

Lonestar Education And Research Network

Potential Architecture for Texas Healthcare Intranet over LEARN August 26, 2009

by

Akbar Kara

Chief Technologist

akara@tx-learn.net



LEARN Mission

Lonestar Education And Research Network is a 501(c)(3) non-profit collaboration of Texas higher education institutions that supports their research, education, health care, and public service missions through the innovative development, operation, and utilization of advanced statewide networking, access to global resources, and related services.

Who: Non-Profit; Collaboration of Higher Education

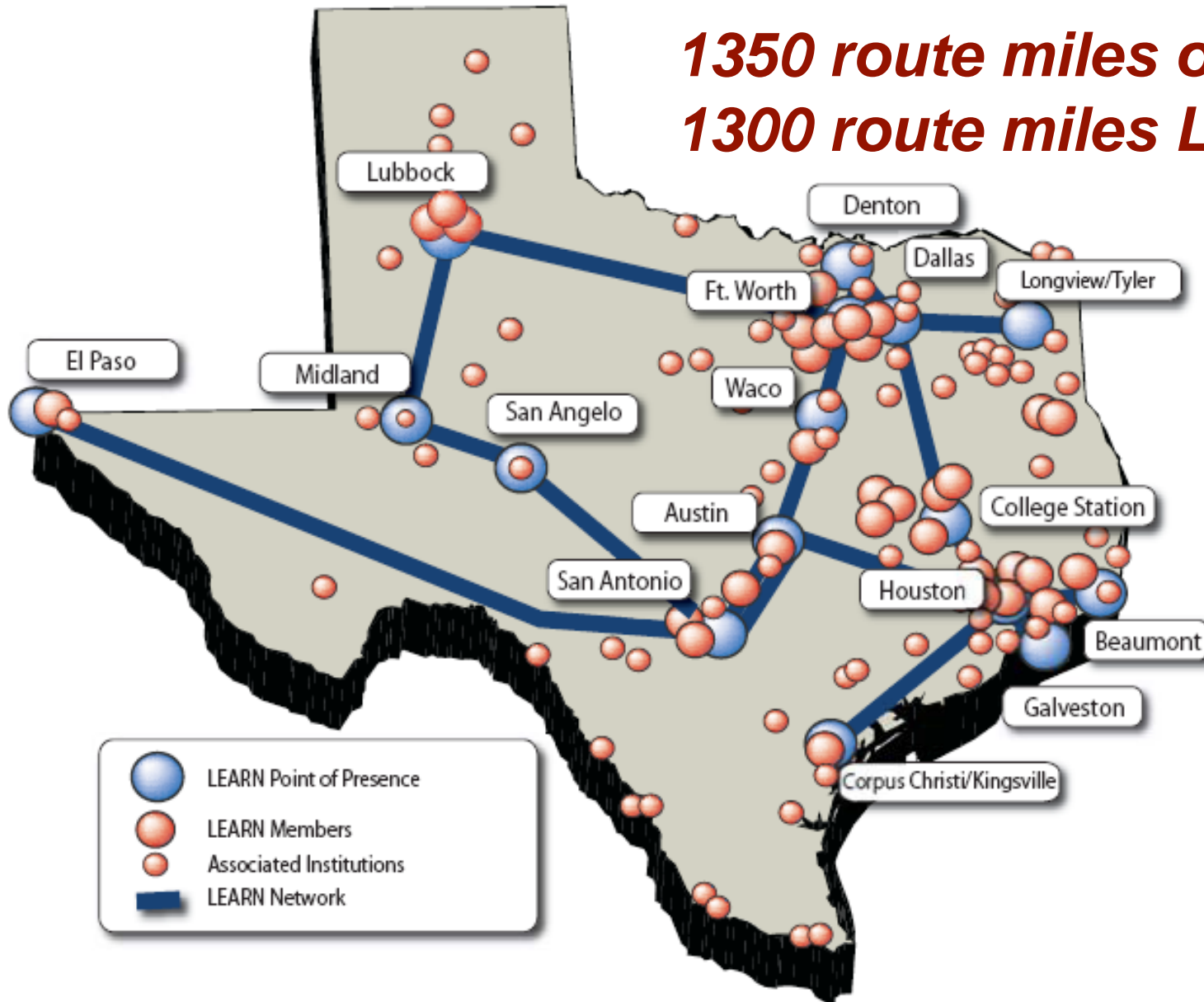
What: Advance Networking

How: Owned Infrastructure and Joint-builds

Where: Texas

The State of Texas and LEARN

***1350 route miles of IRU +
1300 route miles LEASED***

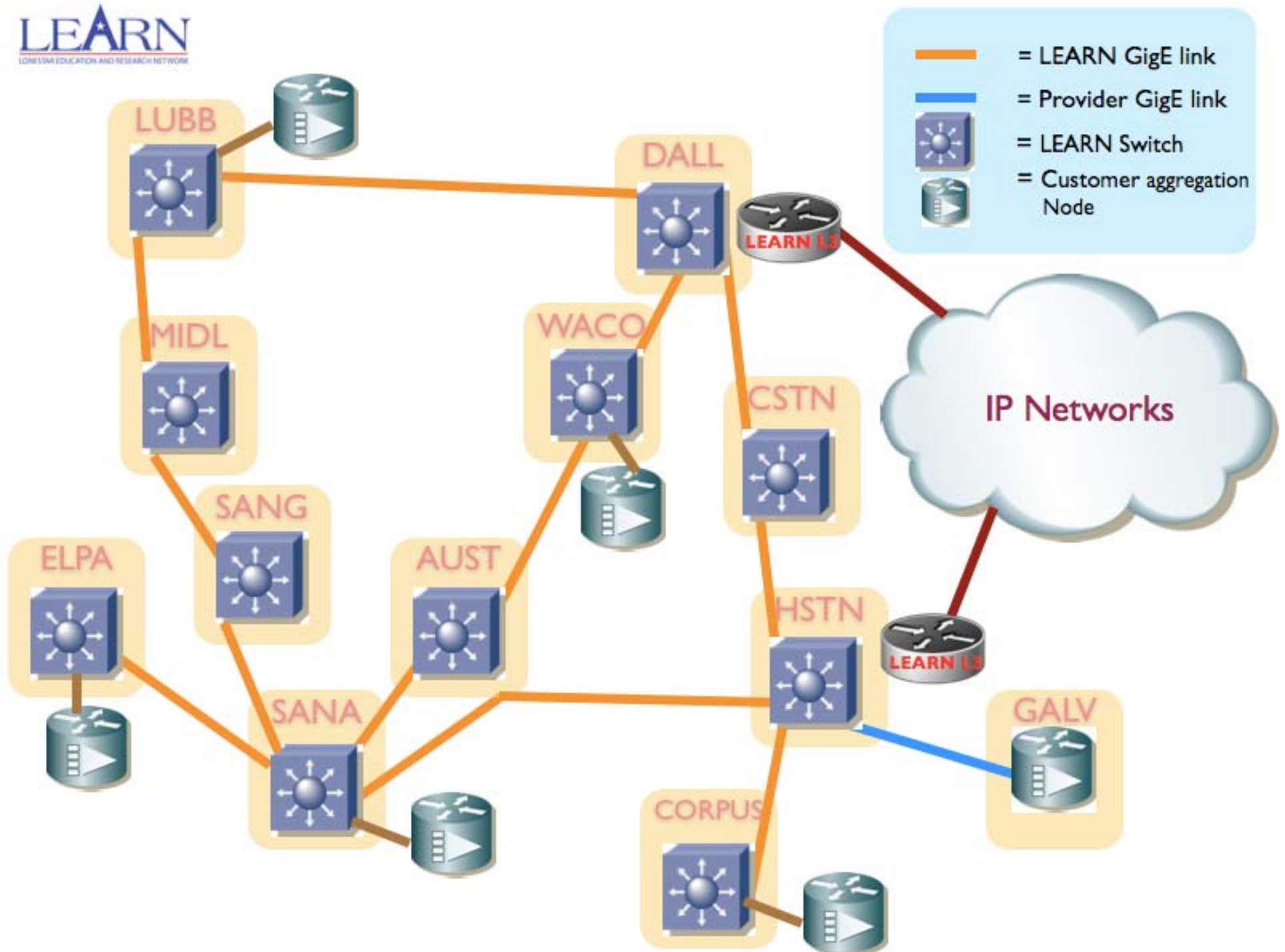


FCC Pilot Program

- FCC approved merging of 2 Texas awards
- Pilot Program rules mandate use of procurement process for network services
 - Awardees to select service provider(s) using program's procurement process
- Texas RFP is pending...
 - LEARN intends to participate

Network

- Gigabit backbone links over LEARN's optical network
- Internet Protocol (IP) as the foundation
 - One-One
 - Any-Any
 - One-Many
 - Virtual Private Network (VPN)
- On ramps to national backbones and state-wide networks
- Capable of supporting delay sensitive and data intensive applications



Missouri Telehealth Network (MTN)

Hank Niederhelm
Director of Infrastructure, MOREnet



MTN – The Beginning

- Established in 1994 to increase access to health care to Missourians
- One of first public-private partnerships
- Originally started with 9 sites
- Provide health services for citizens and continuing education for health care providers

MTN - Today

- 150 sites connected
- Coverage in 48 counties
- Provides services in 40 different medical specialties
- 240 interactive Telehealth video events & 1,100 teleradiology exams / month

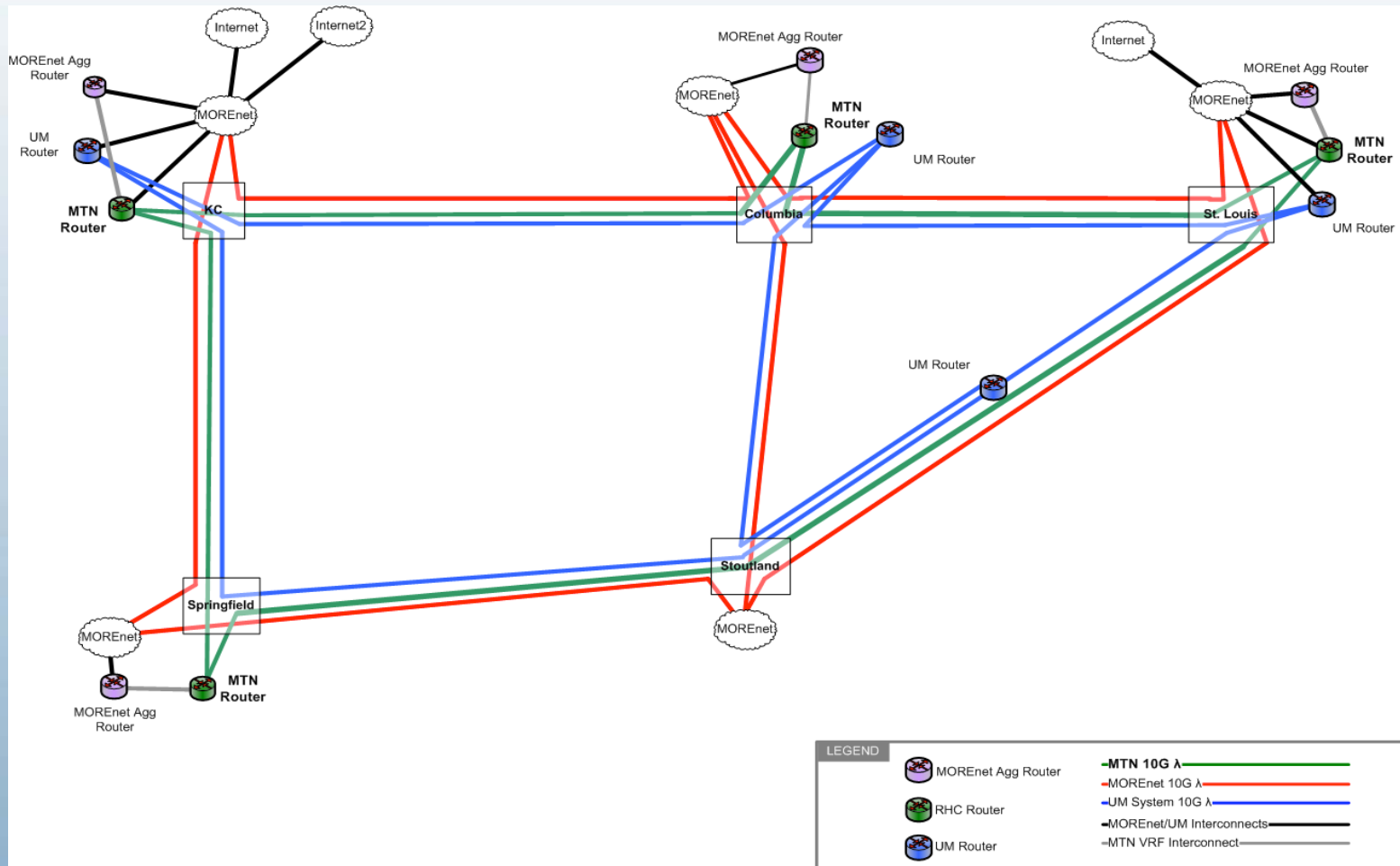
MTN – The Future

- Received FCC RHCPP grant in FY08
- Will build 2G dedicated IP backbone
- Will add ~30 additional telehealth sites
- Procurement activities are underway
- MOREnet will provide NOC services
- Target implementation – Fall 2009

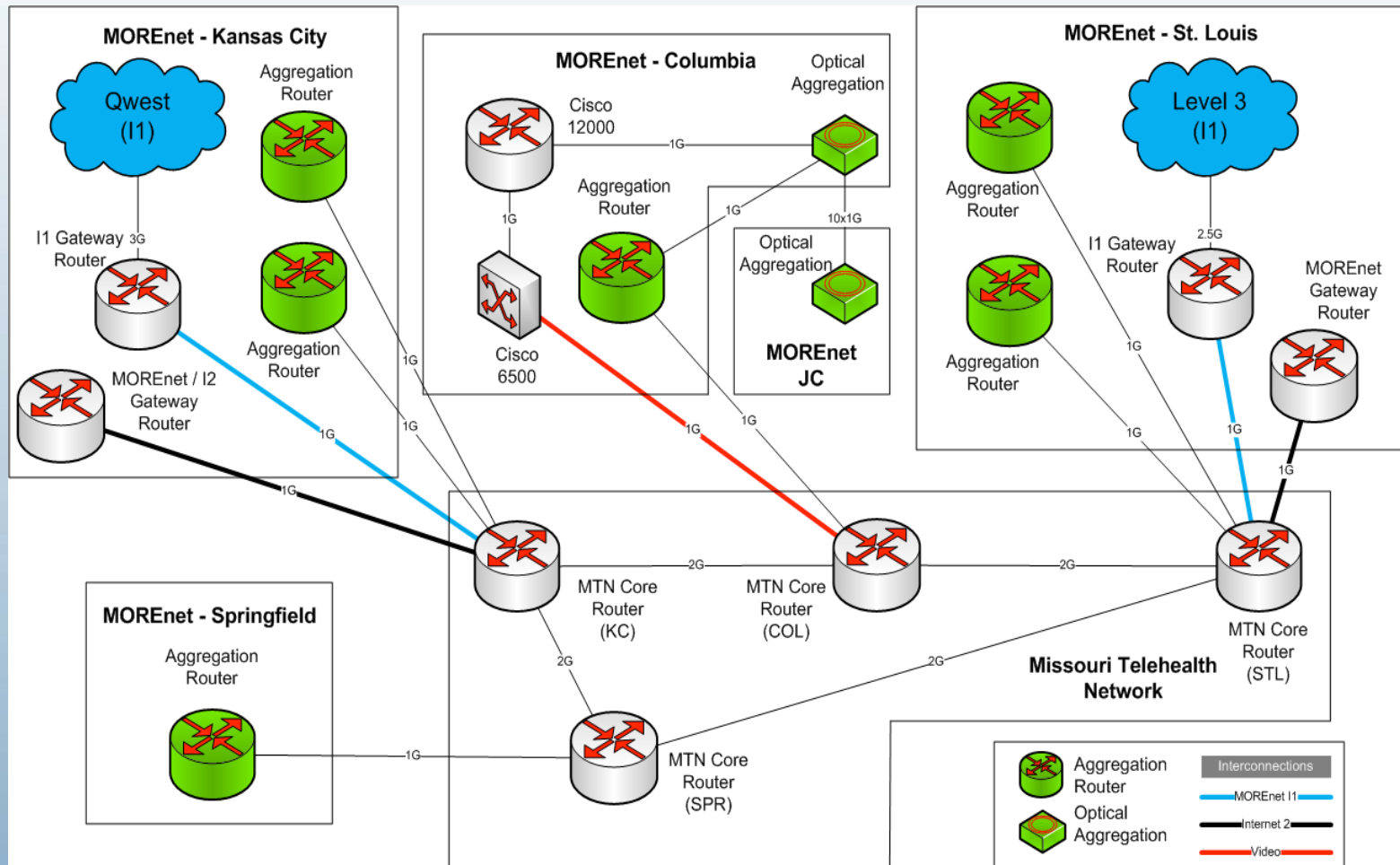
MTN Network - Overview

- T1s connect each site
- Site connectivity aggregated
- Interconnections to MOREnet I1 and I2 gateway devices (SEGP)
- Leverages the University of Missouri's fiber network
 - 10G wave
 - 2x1G bonded dedicated backbone

MTN – Optical Network



MTN- Routed Network



Discussion and Q&A

We invite and encourage you to complete the survey for this webinar.

http://www.surveymonkey.com/s.aspx?sm=De8B_2f2WBJkWJDpiVUrBJPw_3d_3d

www.internet2.edu

