

2013-02-18 NTNC Exec
University of Iowa
Iowa City, IA

Present:

Mike Adelaine (SD), Amanda Dixon (SD), Steve Fleagle (IA), Bob Stovall (MI), John Krogman (WI), Kim Owen (ND), Richard Machida (AK), Marc Wallman (ND), Rob Vietzke (Internet2), Bernie Gulachek (MN), Stan Harris (MT), Dave Lois (WI), Tony Opheim (WA) by phone

1. NTNC Website update
 - a. NTNC website managed by UMT and hosted by Internet2. Expenses are paid by NTNC
 - b. New site is up at new location; not all content is posted. *Action Item*: review new content and provide feedback/edits as needed.
 - c. Information from each partner –
 - i. Add the updated contact info for each member state (administrative, technical)
 - ii. News items specific to each partner state
 - iii. *Action Item*: gather current state updates at each of the meetings for posting to the website. If gathered in person, then posted to the website - this would result in 2x/year to get updates to the website. It doesn't prevent other news from being posted in between those times, but at least dictates that we have updates posted.
 - iv. Mike encouraged all states to consider providing updates that include projects similar to the NOAA contract, currently under discussion.
 - d. NTNC map: Original idea was to have interactive consortia map so you could click on an individual state that would take you to more details on that specific state.
 - i. *Action Item*:
 1. Bernie to talk to Dave F. about getting that map built
 2. Rob (Internet2) to take to graphics folks to make it look pretty
 - e. Current Projects
 - i. NOAA contract: Marc W. provided background and status of contract; part of the agreement includes NOAA's willingness to peer with individual institutions along the route
 - ii. Rob (Internet2) is in conversation with NOAA regarding an express wave between Seattle and Chicago. It would not have any peering points along the way.
2. NTNC Scholarships
 - a. Objective: provide a \$250 stipend to any NTNC partner that wants to send a tech staff person to Joint Techs to ensure our tech staff across the partnership is current with trends, practices, apps that relate to the network. Scholarships would help institutions justify sending techs to a meeting specific to NTNC.
 - b. Accounting process with Internet2 would need to be developed to facilitate this process.
3. Northern Wave brochure
 - a. Bob S. provided background; sub-committee of NTNC member reps have developed an outreach brochure highlighting research opportunities available through the NTN/NW
 - b. Objective: to raise awareness of NTN/NW by institutions across the northern states.
 - c. Brochure text is customizable by individual partner institutions (i.e. local campus contact information, local R&E network information, etc.
 - d. Editing suggestions were provided by the group;
 - i. *Action Item*: Bob and committee will revise. Printable format; also downloadable from website.
 - ii. On back page: the term "recommended uses", instead include the word "applications"
 - iii. Now should include NOAA use case once it is completed

- iv. Include similar use cases from any of the other partners any other edits, please forward to Bob or Kim
 - v. Email contact: include an NTNC representative
 - vi. Include edits for clarifying distinction between NTN and NW, as described below.
 - e. PPT backgrounds/templates have been created, can be edited as needed
 - f. NTNC partners are encouraged to educate your University governmental relations office as soon as possible so they are aware of any political implications.
 - i. Emphasize why this is necessary; why research couldn't be done without it
 - ii. It's worth promoting this resources whenever we can and as often as we can
 - g. Discussion
 - i. How do we want to differentiate between NTN and NW?
 - ii. Do we or will we diminish either NTNC or NW in the process?
 - iii. What is our intent with the branding? Branding is critical - we don't want to confuse our community
 - h. *Action Item*: refine the statement to now read "...NW - a service of the NTN..." NTN is the headline, and NW is among the services provided by NTN
4. Internet2 updates (Rob)
- a. UCAN Build Plan B: status of Zayo agreement for Northern Tier path
 - i. Agreement is signed with Zayo and will become official when NTIA approves it (confirmed March 2013)
 - ii. Zayo path frequently touches the same cities as originally planned in the UCAN proposal, exact location of POP may change slightly (ex: Sprint instead of AT&T)
 - iii. Zayo contract details:
 - 1. 20 year IRU,
 - 2. Once NTIA signs off, work should be completed in 90 days
 - 3. Zayo is a sub-recipient on this route; INTERNET2 will not be brokering add/drops along this route
 - 4. Zayo will use the NTIA \$\$ and install new Infinera equipment along the route
 - 5. \$5.6 mil project in total; see ppt for rates paid per year post BTOP
 - 6. Internet2 traffic will be running on this path; 8-year term; No AUP restrictions; when this agreement is over Internet2 will need to have another agreement in place. Internet2 would prefer to have an owned infrastructure agreement in place across any portion of this span.
 - 7. Interest in use of NTN span so far: (Internet2 will add a 10% mgmt fee to any users to cover overhead)
 - a. PNWGP
 - b. Wiscnet
 - 8. Zayo is responsible for complying with NTIA terms of open access for 10 years.
 - iv. See map: Current 100 G Layer 2 Topology
 - 1. Internet2 does not have any obligation to put any nodes along this Zayo path; but they are open to discussion on this. Current map shows planned nodes at this time (none along NTN)
 - 2. See list of sites that could be a Layer 1 100G wave add/drop
 - 3. Internet2 intends to focus primary efforts into expanding the add/drop sites on Layer 2 services; could be a way to operate VLANs across the country
 - b. Innovation Platform Pilot Program Update
 - i. Listening Tour – What can/should Internet2 do to make this resource useable and accessible?

- ii. Develop new model options; all with focus of increasing the value proposition and increasing use on the new backbone
 - 1. Rely less on connector port fees and move more costs to R1 research institutions
 - 2. New fee model option:
 - a. All ports will be \$200k (100 Gb port)
 - b. Allows ability to offer 300Gb of capacity to 500 Tb
 - c. Highlights the value of sharing national infrastructure with other R&E networks (ESNet, etc)
 - d. Ex: New England networks - several (MIT, Internet2, CANARIE, NEREN) running their own networks at a use level of approx only 10% - how can we make better use of our network investment in the next cycle?
 - e. Seeing stronger trend where CANARIE is interested in swapping 10 waves going north and south to make more north/south paths across the continent.
- c. What is Internet2's strategic plan for future opportunities? Is NTN among them?
 - i. AK and HI are at the top of the list for projects going forward; also trans-Atlantic routes and Africa were missed in the BTOP roll out.
 - ii. Likely the remaining states not currently served are EPSCoR states - so the timing might be right to develop a plan for those.
 - iii. It will be valuable to get a sense from the community on what will be of value going forward so we're prepared if and when more funding becomes available.
 - iv. Internet2 is working to find out if there is interest in establishing an investment fund (foundation) for R&E networking. We need to get a good list together of projects that need funding. That may be a call to action in 2013 for us to prepare for that request.
 - v. Challenge: the time frames are so long that it's difficult to determine what the future needs will be. How best to determine?
 - vi. Example: the folks going after CC-NIE funds are working to chip away at these projects.
 - vii. Interesting question/discussion about all of this is that individual institutions/networks are not able to spend any more on build-outs. But they do have capital to do some upgrades - so the question becomes how can we scour the current models for efficiencies so we don't have separate networks running at 10% efficiency.
 - viii. And - what is the most efficient way to own these models? Currently the cost per segment is higher than operating as a whole.
 - ix. Internet2's perspective is that there are a relatively small percentage of cases where Internet2 actually needs higher capacity than anything a regional can provide. So Internet2 is interested in a discussion about some type of shared ownership to position us for future models and investments?
 - x. (Rob) Jim Bottum looking to develop an EPSCoR proposal for the next XSEDE round that addresses the need to expand the number of discipline-embedded computational scientists that understand how the infrastructure supports the research.
- 5. Regional Collaborations: Prairie Wave proposal
 - a. Point to discussion by legislators that discuss things that hamper economic development in their areas. (Legislators from the Dakota's, MN, Canada)
 - b. Midco is interested in partnering to expand discussion on exploration of a north/south wave
- 6. CIO Meeting Discussion
 - a. There's constant turnover and interim position terms. When do we draw the line and start to work on this?
 - b. Rob to assist in setting up a side meeting at the Internet2 SMM specifically for the NTNC CIO's
- 7. NTNC Recruiting New Members

- a. CO has dropped their membership
 - b. Eastern states have expressed interest in what NTNC is doing: Ohio, PA, NY, CANARIE
 - i. Maybe it would be good to invite them to our summer meeting and include something on the agenda that covers this topic.
 - ii. CANARIE just came through successful 3 year renewal for CANARIE (they wanted 5 years, but got 3)
 - iii. MERIT hoping to get more individual memberships from MI
 - iv. SURF - state of SD is staying engaged for support, sustainability is critical, possibly pointing to NSF and/or DoD for continued support
8. State Reports
- a. WA
 - i. PNWGP updates: agreement between PNWGP and UMN to extend NW to Starlight by midsummer.
 - ii. Within the state of WA PNWGP is working with the K20 office to bring additional capacity through AT&T to convert 10G to a 40G backbone for the K12's
 - b. ID
 - i. Univ of ID has a new CIO; IRON continues to be a key focus for Idaho. They're looking to bring up overall quality of services and the underlying business plan that supports it all. ID Nat'l Lab is included in this planning.
 - ii. NTNC membership discussion to extend to both Universities in ID. They were always staunch supporters of NTN but just couldn't afford it at the time. Both IRON and Univ of ID should be contacted. (Dan Ewert - CIO at Univ of ID)
 - c. IA
 - i. Legislature passed a bill asking that the state sell it's state network, thinking they can have someone else provide those services more cheaply. Response from local teleco's has been minimal. This move isn't perceived to impact the Universities too much.
 - ii. BOREAS upgrade 400G to 400T capacity - biggest upgrade they've done. Should be done by the start of Fall 2014 semester.
 - d. WI
 - i. Boreas upgrade: install should be completed by mid-April. Related campus upgrade to 100 G is planned for completion by fall 2014.
 - ii. Wiscnet update: planned disassociation between Wiscnet and WI higher education. An RFP is planned to find an alternative provider.
 - 1. RFP key points:
 - a. Suggest looking/reading the RFP: exceptionally well written pointing to the needs of research universities.
 - b. Peering services allows for lower costs services needed
 - c. Netflix peering review resulted in 10G peak immediately
 - 2. For NTNC - is there something we can do to better tell this story about public/private partnership?
 - 3. WI has received good feedback as they've pointed to the OH model
 - 4. MERIT – how to promote the public/private relationship since the RON can offer greater cost savings to local CAI's and provide opportunities for economic development.
 - e. MN
 - i. Boreas upgrade
 - ii. With the state, there is aggregation of regionals called the MN Learning Network - a match to all K12, state and higher ed. That learning network is planning on a state request to do

some targeted investments in some underserved areas. That aggregation of network works in partnership with K12, MNSCU (MN State Colleges and Universities) - will be looking for state services to enhance network services in outlying/underserved areas. Not sure yet what this request will look like. Argument points to "making these areas "whole" again - to the way they were before the services were cut. Should know more detail in March.

- iii. The consensus is that all entities are looking for more of a shared resource across all entities.
- f. SD
 - i. Most of the \$\$ went to investing in fiber to the home in rural areas.
 - ii. The only thing the state level got was to map out how successful this initiative was. Other than some rural, traditionally focused pockets in the western part of the state, most all have received this upgrade.
 - iii. Need to keep the communication lines open to work on improving the awareness of the value of these upgrades.
- g. AK
 - i. Terra long term vision for microwave site across the state (no fiber)
 - ii. Alaska Fiber (from Japan to London)
 - iii. Quintillion - why the flurry of activity again now? Lots of IRU contract issues in the past. Outside economic factors/players coming in from left field that was unexpected and has changed the playing field.
 - iv. More interest in research centers
 - v. More interest in the University system considering an Alaskan gigapop
 - vi. Cable on the tundra pilot project: ending it's grant term. Is embedded in a fairly dense/heavy underwater cable and so far no cuts or drops have occurred. In addition, the cable is actually beginning to sink into the tundra just like it was predicted.
- h. WY
 - i. Bison loop (Denver, Cheyenne, NWS supercomputer site, front range gigapop)
 - ii. New state CIO and Gov: attempting to put in two rings around the state. Prefer to go with lease proposal from vendors. Might potentially offer some redundancy to SD.
 - iii. State is aggressively going after data centers due to location of new NCAR center
 - iv. Microsoft is currently building a 40k square foot data center with option to build three more of the same size. Gov is offering perks to those willing to come in a build data centers
 - v. Data center powered off "bio-gas" taking the biogases and powering the power cells,
 - vi. NWSC data center is over 80% dry cooled - phenomenal data
 - vii. Trying to break into the data flows that currently run by WY and get them to stop.
 - viii. Good potential to diversify the economy of a rural state; wind farms also provide consistent source of wind energy.
 - ix. Both Microsoft and Google have located data centers in Iowa - they want to use the wind energy resources. They also get energy credits.
- i. MT
 - i. Two new CIO's on board
 - ii. History on NTNC and current implications:
 1. Fall 2012 MT Gov announced the whole state would go on NTN
 2. Internet2 came along with ZAYO as an option to allow the agreement to be worked out.
 - iii. State now has a new 10 G backbone from ZAYO. Same construct as will build out across ND to satisfy UCAN needs - roughly \$100k/year for a four-leg ring around the state.
 - iv. Wrapping up the EPSCoR grant, ends in August. Connected Tribal Colleges and community

colleges, the Miles City data center to the state network.

- v. NTN contract between MT and PNWGP is up by 2015, thus the concern now is to determine if a new contract will be in MT's best interest.
 1. PNWGP has first rights to take over ownership of MT fiber if MT doesn't renew.
 2. Is that a discussion that needs to come to this group?
 3. If the MT CIO's are going to make this decision, is there any information the NTNC can provide to them to help them make that decision?
 4. The meeting at the Internet2 SMM will be a good opportunity to discuss this.
- vi. Questions (?)
- vii. Healthnet loop (Ray?): status, connection out to initial sites as planned; no word on any redundant loops ("HEAM" connection?)
- viii. High perf computing center - located in Butte. Provides services to business side
- ix. USFS research center - status of connection? Ray is still involved with. USFS is connected and working to sort through security issues involved with their connections. Some components of this are similar to a Science DMZ.

j. ND

- i. NW and ND/SD link is completed
- ii. Annual report for NTN-ND is online (<http://www.ndsu.edu/vpit/ntn/>)
- iii. Tribal colleges are now in final stages of campus network upgrades and will be connected to state network, and then Internet2. The TC's will be added as members under the state's SEGP sponsorship.

k. MI

- i. BTOP project nearing completion
- ii. High points: scheduled to build almost 2200 miles of fiber; have completed about 1900 at this point; almost 1500 mi lit and in production; full dwdm systems from Holten, MI to Monroe, MI (northwest to southeast corners of state). Requested extension for round I. of the 1900 miles that are lit - have connected 72 anchors; now also connecting folks that are not funded as CAI's.
- iii. BIP/BTOP project: successfully completed
- iv. Grant audit required for round 1 BTOP. Tedious and intensive on scouring documentation, etc. ==> points to the need for attention to detail and planned full disclosure
- v. Gov, Dept of Ed and state CIO have put out grant opp to K12's to do additional collaborations using the network. No one grant would be more than \$1 mil. Total of \$22mil available, but broken into individual portions, it's not enough to do anything major. They had hoped it would segue nicely with the BTOP project but unfortunately it hasn't worked out that way.
- vi. MI Cyber Range: new program started with state of MI and Homeland Security. Aligns to fed cyberinfrastructure move to provide training on security issues. MI Nat'l Guard wants training facilities at the air bases in the event there is a threat to closing. Four campuses are starting new programs aligned to this initiative. Range from business security to advanced security. MERIT is hosting different courses as part of that program (IT security topics).
- vii. MERIT's role: created the cyber range, that allows teams to battle each other; working on mirror production traffic that the teams have to battle through including civilian "clutter" to work through cyber security threat. Developing the content and guidelines for schools to develop their own cyber ranges. Includes scenarios of lone attacker, military, state, national threats.

9. Internet2 Proposal

- a. Mike submitted proposal for a concurrent session at the Internet2 Spring Member Meeting in April

- b. Purpose of presentation is to provide an update on status of the NTN and recent related initiatives.
- c. Mike, Steve and Rob to prepare and deliver presentation if accepted.

10. Future Plans for the NTNC

- a. NW discussion: need to emphasize the collaboration among the various partner groups
- b. Marc to work on draft of NOAA news release and insert new language to address the "collaboration" efforts
- c. Regarding NW brochure: re-work to strengthen the promotion of NTN and include NW as a "collaboration" effort provided by partners in the various groups "...this grant was enabled through collaboration of partners across the NTN..."
- d. Other critical points to emphasize:
 - i. 3 legged stool - between RON's, INTERNET2 and the Universities
 - ii. Critically and strategically important to get this right
 - iii. Difficult to introduce a new brand at any time; also - service vs collaboration?...the user doesn't care

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 Visit to University Data Center
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11. General Updates:

- a. Budget Update: document was sent via email to all members of the exec committee for review.
 - i. No general discussion
 - ii. At any time, if conf call or other contact needs to happen among NTNC techs, the consortia can cover those costs.
- b. Dues - according to Charter, we must revisit dues on an annual basis.
 - i. Consortia account is in good shape
 - ii. Currently dues are \$1,200 / year/ member; current level has been froze for a few years now.
 - iii. Expenses for both exec and annual meeting typically runs about \$15,000 for the year
 - iv. Do we keep the dues at the same level? Lower?
 - v. Discussion
 - 1. Possibly back off with the idea of keeping this level of funds in the account
 - 2. Be cognizant of any future needs the consortia might want to purchase in the future that could come from this fund - rather than having the individual members purchase on their own. The difference between \$1200 and for example \$800 really doesn't make much of a difference.
 - 3. Action Item/Consensus: leave dues at same level for 2013. Recommendation will be taken to general membership at annual meeting in June.
- c. State Representative Elections
 - i. Charter is set up to allow for rotation in and off on a regular basis. The process of selecting that individual is left up to each state.
 - ii. Action Item: Information on new state representatives are to be sent to Mike A. MN, WY, MI, CO are up for rotation in 2013.
 - 1. Each state to notify exec committee of updates by mid-March.
 - 2. Bob Alyward to contact CO regarding their lack of interest in renewing NTNC membership
 - 3. Once the exec committee is updated, Mike will put out email call for nominations for the exec council (chair, co-chair and sec'y-treasurer)

d. Charter Updates

i. NTN Charter Goals:

1. Grand Challenges - what is the future of NTN/NTNC? The original charter only addresses east/west path; nothing about north/south path. Another initial challenge was to get the NTN on the national backbone – UCAN was an option until things fell apart in 2012.
2. Consensus - plan to take the discussion about updates to the annual meeting general membership; then make updates as determined by the membership.
3. Action Item: Exec council to develop proposals for the charter updates to bring to the general membership for discussion.

e. NTNC annual meeting in WY

i. Theme: Grand Challenges (?)

ii. Meeting topics to include: technical updates, collaborations, partnerships across the U.S. and Canada, possibly allow extra half day for special interest topics.

1. Getting connected to the national backbone, providing benefits to all member states, international collaborations possible (ex: completion of AK project)

iii. Location: Laramie, WY (typically fly into Denver then drive)

iv. Dates: June 13-14; plan for 1.5 day of general meeting

v. Tours: NCAR facility (allow for approx 2 hrs)

vi. Invites to others?

1. Front Range Gigapop out of Denver, partnerships in the west (Steve Corbato, UT; others?), OARnet, Three Rox, NYSERnet, ORANO, Wiscnet, BOREAS
2. Vendors invited? Consensus not to invite
 - a. Possibly on a specific topic that's of general interest to the membership
 - b. ZAYO might be a good one to invite at this time
 - i. Include a time slot for them; not an invite to the whole meeting
3. Confirm the date and then gauge interest of the various groups to see what they would like to include, and if they will attend

12. Action Items for all general membership by June 2013 annual meeting:

- a. Each state to provide updated contact info (*for each due-paying member*)
 - i. IT admin
 - ii. IT technical
 - iii. President's contact for general NTNC inquiries
- b. NW Brochure: get any suggested edits to Bob or Kim