# Infrastructure Technologies Advisory Group

Notes

# August 1, 2019

# **Present:** MeiMei, Debbie, Joe, Chris A, Keith, Kevin, Chris E, Billy, Josh J, Greg S, David, Tony, Dan, Ed, Greg J, Josh G, Doug, Eric, Gary

# **Welcome**

Reminder: Google group… [group-intag@ncsu.edu](mailto:group-intag@ncsu.edu)

**Staffing Update**

* New NOC Analyst - Jeevitha Mahankali

**Campus Network**

* Next firewall project is the site to site hardware upgrade - Hardware on-site, working on migration plans and new configuration
* Cisco VPN upgrade - Completed 2/20
  + Lab environment set up and now ready for 2FA testing
    - Testing released to names below on July 29.
    - SBL and SAML do not appear to work well together
    - Test group provided by CITD
      * Dan Green
      * Billy Beaudoin
      * ITECS - Ryan Hoekstra
      * Tih-Yuan Wang, twang2 (Design)
      * Nathan Snodgrass (Extension)
      * Libraries - Adit Burkule
      * HPC/VCL (Eric/Andy K./Lisa Lowe/Josh T.)
      * OIT S&C: Darren Fallis
      * Help Desk/OITMD - Nik Davlantis
      * Brian Fields - CALS/CAAT
      * Chris Bettini - CVM
      * CHASS - Zack Dean,Daniel Henninger
    - Concerns raised about the impact this will have for international travelers - ie, making sure they have a second factor with them
    - Current 2FA testing is focused on DUO LDAP implementation
    - Potential issue in that some linux users are using open source
  + Full tunnel testing is now available for individuals identified above.
    - [full tunnel testing](https://docs.google.com/document/d/1qvaOtTOdkBvI-l7NYvBqWBR5UdMcoukY0r6K_em87pw/edit#heading=h.m3qa5syidf5b)
    - Could IT staff request on behalf of end user and then have form route to user to accept policies? Good news: Users or admins can submit form. Bad news: mappings aren’t there to reliably implement notifications to admins when users submit. Will take a cursory look to see if there are alternate data sources to map users to depts/admins
    - Please help temper expectations within your community--Full Tunnel VPN will not necessarily solve everyone’s international access problems
    - Exploring whether session limits for VPN/full tunnel VPN connections might be appropriate. Will consult with S&C for a recommendation. Will gather some metrics to identify frequency of long-running sessions on current infrastructure.
      * At this time there will be no session limits set for Full Tunnel connections.
* Life Safety Centrex Replacement
  + NMDF - planning for cutover underway
  + SMDF - cable testing to be completed in August
  + CMDF - design complete
* Backbone updates - Investigating requirements and implementation standards
* Redundant fiber entrances - SMDF zone - design in progress
* I-440 Widening: phase 1 - 512 Brickhaven - Sept 2019
* Hillsborough St. crossings

**Access Layer**

* Big Layer Two (BLT) project designs - 2 buildings remain
* TUNAMELT project - 3560x switches - 3 year project - 3Q materials received

**Data Center**

* DC1 Decommissioning
  + First round of equipment for testing is operational
  + Expecting production ready environment this month
  + Target date for completion is currently March/April 2020
* EDC - almost go-live
* Intake processes being refined starting in August
* Cost model for rack space being refined

**CATV**

* Housing/ComTech working together on RFP for streaming/CATV combo for 20/21 academic year.

**MDFs**

* NMDF - design started for elec/mec upgrade.
* Poe. No date yet to remove non-ComTech equipment but will be after processes are in place for hosting non-OIT equipment in DC2/EDC
* Lake Wheeler MDF - Design study complete.

**Infrastructure Records**

* Fiber inventory - inside cables (74%)
* New PLA ground wireless maps 1058/3100 AP’s done (34%).

**Building Infrastructure Projects**

* Design – Partners 2, West Dunn, Creamery
* Construction – Dabney, Lambda Chi Alpha, Polk, DH Hill Academic Success, Research 3, V4-Visual Narrative, Biological Resources Facility
* Completed: Weaver Labs, Fountain, Patterson, V4-GTI, Partners 1 - 1650

**Cellular/mobile**

* Indoor - Spidercloud - construction in progress in 6 buildings, next group in negotiation
  + List: [SpiderCloud](https://docs.google.com/spreadsheets/d/16ZpdmpP7JNH1_P2tvzCISjmNXMzE-VyaEY1KrZv3uPc/edit?usp=sharing)

**IT Strategic Planning**

* Implementation team is meeting in August and then moving to quarterly meetings
* Matrix of initiatives is fleshed out and needs a last polishing before publishing later this summer
* Service Planning
  + CMDB - discovery process is ramping up
  + Change Management - team has submitted plan and will begin as soon as we recruit new change mgmt position

**Unified Communications**

* Partner Updates: UNCG, App State, NC A&T, Pembroke
* New Partner Development: NC DIT -- Tools, Training, Support
* Life Safety rollout -- VOIP equipment ordered for 3 MDFs
* Centrex to VOIP conversion
* Centrex rates post December 2020

**Systems & Development**

* Tools Updates
  + Eduroam with AD Certificates / Radius
  + Automation for switch provisioning
* Thresholds and Alerts
* New version of the PLA ground
  + Real time reporting
  + Mobile
  + More granular access levels
* Mobile management tool for Life Safety lines

## Wireless

* LAN Admins raised a use case for non-enterprise APs - how prevalent/legit is this need?
* Classroom wireless
  + [Classroom Coverage](https://docs.google.com/spreadsheets/d/1EM_YfPCHXV7BNHRdlUaj0_x6E75tMZblSppfhlmfJgQ/edit#gid=2136708155) - current list
  + Future: need to begin discussion on [210 classrooms](https://docs.google.com/spreadsheets/d/1yVdsyNn6NCxZP0-EqBjrgDTIbVt40nwf_-fps2aLG1I/edit#gid=1005195878) funding
* Outdoor Wireless (Stafford Commons, Arboretum, Plant Sciences) working on Wi-Fi pole model
* Beacon focus group - met 2/27/19 - pace of needs and technology appears to be aligning well - will meet again roughly same time 2020
* EDUROAM (secure SSID) -
  + [Wifi.ncsu.edu](http://wifi.ncsu.edu) is now live with links to SecureW2 for eduroam
  + William/Billy/Michael met regarding AD certs - Now doing testing on machine certificates.
  + Need to determine best plan for migrating Cloudpath customers over to SecureW2.
* Now tracking wireless metrics as part of overall [monthly metrics](https://oit.ncsu.edu/campus-it/campus-data-network/communication-technologies-metrics/)
* In process of purchasing CAPE sensors for wireless troubleshooting.
  + Sensors ordered, looking at creating a troubleshooting kit with CAPE sensor and spectrum analyzer. Also need to look into handheld analyzer.
  + Look at practicality of loaning out to departmental staff

**Storage Infrastructure**

* Tony Copeland and Aaron Peeler meet with various groups (every 2 weeks until the end of the year) to discuss storage. Here are the current top 3 topics from the discussion.
  + Tools for Data Management
  + Cloud based storage
  + Data growth
* NAS Migration(DC2 Isilon) - NAS migration continues
* NetApp encryption testing in the lab was successful. Will add license to DC2 NetApp and run some additional testing.
* AFS to AuriStor - Working on migrating BP cell to Unity cell, resolving conflicts.
* Proposal to not automatically create NCSU drive directories for students has been tabled - hoping that currently queued account deletes will resolve the issue with number of available q-trees
* Research storage allocation methodology is changing:
  + 1TB per faculty researcher
  + Allocations for awarded grants based on grant requirement and retention based on data management plan - so far as practicable will not charge.. however, beyond some amount there will have to be some cost recovery - hopefully will be clear ‘unlike circumstance’ and be able to pay from direct grant funds
* Proposal being forwarded to ORI for some additional research storage resources; increased curation support from Libraries, additional security analyst, additional systems position for storage refresh in 2021 (would also provide backup to HPC systems position)

**Server Infrastructure**

* Upgrading prior HCI deployment cluster, working with EMC in addressing some issues.
* Coordinating with Dell to setup the new HCI equipment once physical layer is ready.

**Software Infrastructure**

* Legacy Realm Linux infrastructure retirement [has been announced](https://sysnews.ncsu.edu/news/5d408295) for 12/31/2019
  + Reports of existing systems still contacting the legacy configuration management will be sent to [realmlinux-service@lists.ncsu.edu](mailto:realmlinux-service@lists.ncsu.edu) on the first day of every month.
  + We will work with individual colleges to make sure owners of every system is identified. Here is [a summary with counts](https://docs.google.com/spreadsheets/d/1xrizqMOE0iRKa5RxBSivO2zkCtIolrp9e4mnpeLzbK8/edit?usp=sharing). We will work with colleges with details. Please insert the names that you would like us to contact.
* VCL - Azure Windows Virtual Desktop (WVD) proof of concept.
  + Work will resume on 08/13 after Microsoft resolves encountered issues.
  + It is technically possible for VCL to move away from VDA dependency
* VDA dependency outside of VCL - Student RDP into research or lab machines.
  + Will campus units purchase and manage specific VDA licenses?

### Governance Revamp

### Still need to figure out future of ITSAC-I and any relationship to this group

* + Quarterly?? More of a ComEx?

**Budget**

* Reminder: Centrex lines are now being billed to departments at actual cost - have shared list of lines with CITD. Current contract ends December 2020 and prices are expected to raise to at least $40/line/month. Working to migrate lines ahead of that unless technical/compliance constraints.

### Parking Lot Items

* Routing licenses at the BDF level – when and how much should occupants pay? Interim solution is 50/50 when “desired”, ComTech funds when required
* “virtual data center” – 4/5/18 conversation confirms there’s still some need for “flat” networks (even outside the data center)

## Upcoming Meeting Dates

* Next InTAG Meeting – September 5, 2019