# 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

**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 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