# Infrastructure Technologies Advisory Group

Notes

# November 7, 2019

# **Present:** Franklin, Ed, Kevin, Josh G., Vijay, Greg S., Greg J., Josh J., Aaron, Pat, Billy, Keith, Jill, Daniel, Chris A.

# **Welcome**

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

**Staffing Update**

**Campus Network**

* Next firewall project is the site to site hardware upgrade - Site migrations will start this month
* Now focusing on core firewall upgrade
* Next generation edge switches - Cisco is front runner, but waiting on pricing from HP/Aruba to see if worth evaluating their products
* Cisco VPN Anyconnect upgrade - Completed with full tunnel and 2FA enabled on all groups except student.
  + Concerns around lack of support for “black keys” - seems to be a low volume but high impact need, should bring up at CITD
* Life Safety Centrex Replacement
  + NMDF - planning cutover
  + SMDF - finishing up cable testing
  + CMDF - design complete
* Backbone updates - Investigating requirements and implementation standards
* Redundant fiber entrances - SMDF zone - Wolf Village construction in Dec
* I-440 Widening: working on bypass fiber for 512 Brickhaven
* Hillsborough St. crossings - design complete - Real Estate getting easements

**Access Layer**

* TUNAMELT project - 3560x switches - 29/339 switches designed (9%)

**Data Center**

* DC1 Decommissioning
  + First round of equipment for testing is operational
  + Expecting production ready environment this month
  + Target date for completion is currently April/May 2020 - slid a month from last update due to issues with optics/cables at EDC
* EDC - live-ish, working on phase 2 infrastructure
* General service offering for colo late Spring/early Summer
  + Poe tenants early access (Jan/Feb...ish)
  + Intake processes being refined
  + Cost model for rack space being finalized - [current draft](https://docs.google.com/spreadsheets/d/1MQhV3Q25NK4AuoIJWamuWuV-yl7auDlI6IqyqLAdaUg/edit#gid=826436317)
  + Special challenges of tape libraries - need to change tapes on a regular basis, etc

**CATV**

* RFP opened for streaming/CATV combo for 20/21 academic year.

**MDFs**

* NMDF - design started for elec/mech upgrade.
* Poe. Sept 2020 - tentative date to remove non-ComTech equipment

**Infrastructure Records**

* Fiber inventory - inside cables - complete, jumpers next
* New PLA ground wireless maps 2123 of 3124 APs (68%)

**Building Infrastructure Projects**

* Design – West Dunn, Materials Mgmt, Kappa Alpha Theta, 3709 Hillsborough
* Construction – Dabney, Polk, DH Hill Academic Success, Creamery, Partners 2, EH&S
* Completed: Research 3, BRF

**Cellular/mobile**

* Indoor - Spidercloud - Verizon activating 5 buildings, Talley in construction. next group in negotiation
  + List: [SpiderCloud](https://docs.google.com/spreadsheets/d/16ZpdmpP7JNH1_P2tvzCISjmNXMzE-VyaEY1KrZv3uPc/edit?usp=sharing)

**IT Strategic Planning**

* Mostly in a hold pattern awaiting next University Strategic Plan - will continue to meet 3-4 times annually to track updates on key initiatives
* Service Planning
  + CMDB - discovery process is ramping up
  + Change Management - onsite interviews for change manager position are scheduled later this month

**Unified Communications**

* Partner Updates: UNCG, App State, NC A&T, Pembroke
  + Centrex line inventory and reconciliation
* New Partner Development: NC DIT -- Tools, Training, Support
* Life Safety rollout
* Lab SIP Trunk

**Systems & Development**

* Tools Updates
  + Eduroam with AD Certificates / Radius
  + Automation for switch provisioning, configurator
  + Port disable tool, now with voice
  + Service Now Integration
    - Automated incidents for audit tracking
    - Linking incidents to equipment from CMDB
* Thresholds and Alerts
  + Monitoring remote links
  + Proactive equipment failure
* New version of the PLA ground
* Mobile management tool for Life Safety lines

## Wireless

* Wi-Fi 6 Project in planning. Will start after the first of the year.
  + Will upgrade to 8.5 code between Thanksgiving and winter break to allow us to run the AP 500 series
* 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 - Working in lab, need to change ID format for it to work outside of NC State
  + Need to determine the 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 the 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 a handheld analyzer.
  + Look at practicality of loaning out to departmental staff

**Storage Infrastructure**

* NAS Migration -
  + Project is moving along. Many departments migrating data to new storage
  + The PCI compliance requirements relaxed for SMBv1 on the Domain controllers. SMBv1 is currently needed for the legacy NAS storage arrays to function. We are targeted to be off old NAS arrays by Feb 2020.
* D@RE was enabled on backup storage system (DataDomain) successfully on 10/16
* NetApp encryption testing in the lab was successful. Will add license to DC2 NetApp as needed for HPC data.
* NCSUdrive: B-drive migration project:
  + The pretty name is \\ncsudrive.ncsu.edu\home
  + Exists today and is for testing purposes only, any data deleted pre-sync.
  + Cutover date will be Jan 4th/5th weekend
  + We will start the sync process Thurs Jan 2nd, take approx 48 hrs to copy
  + On the evening of Jan 4th we will disable the old B-drive shares
  + The aliases <unityid>.file.ncsu.edu are no longer needed and will go away
  + User home directories automatically created once user connects
  + Working on communication plan and will send out on all channels
* 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)
* AFS to AuriStor - BP cell migration into Unity is complete. Working on converting EOS to AuriStor. To speed up the conversion process, initial work is focusing on converting to AuriStor while keeping separate UNITY and EOS cells.

**Server Infrastructure**

* Coordinating with Dell to setup the new HCI equipment no that most dependencies are resolved.

**Software Infrastructure**

* Legacy Realm Linux infrastructure retirement [has been announced](https://sysnews.ncsu.edu/news/5d408295) for 12/31/2019
  + Owners of all systems still contacting the legacy configuration management have been identified. Detailed lists of systems have been provided to the owners.
  + Here is [a summary with counts](https://docs.google.com/spreadsheets/d/1xrizqMOE0iRKa5RxBSivO2zkCtIolrp9e4mnpeLzbK8/edit?usp=sharing) of remaining systems as of 11/01/2019. Please make plans to migrate the systems before the end of 2019.
* VCL - Azure Windows Virtual Desktop (WVD) proof of concept.
  + It looks technically possible for VCL to move away from VDA dependency
* VDA dependency outside of VCL - Student RDP into research or lab machines.
  + [This Google sheet was created to get an estimate on the overall VDA license need on campus](https://docs.google.com/spreadsheets/d/1bltTnkH_yUZBfRI6wJmdfXpVLPsJUItk012iGq08fPI/edit#gid=0). Please provide estimates for your area so that we can move the conversation to the next stage. At some point, we have to make a decision whether to drop campus-wise VDA license.
  + It’s not clear folks understand the scope of need given responses thus far
  + Based on the limited needs from various colleges on VDA licenses for students, VCL should work on utilizing Azure WVD so that the university can stop campus-wide VDA licenses
  + Will colleges manage individual VDA licenses on their own, or going through OIT Software Licensing to get individual VDA license (and ensure compliance) after that?

### 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 a list of lines with CITD. Current contract ends December 2020 and prices are expected to rise 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 – December 5, 2019