



Advanced Engineering Task Force Meeting Agenda

October 9, 2015
10:00 a.m.



- 1 Community Commons Building (CCB)**
 - Academic Advising
 - Admissions
 - Career Services
 - Cashier
 - Executive Offices
 - Financial Aid
 - Human Resources
 - Next Step
 - Student Records
- 2 Student Commons Building (SCB)**
 - Adult Education
 - Assessment Center
 - Bookstore
 - Café
 - Career Link
 - Library
 - Disability Support
 - HALO
 - Tutoring Services
 - Security
- 3 Instructional Commons Building (ICB)**
 - Academic Offices:
 - Health & Human Services
 - Liberal Arts & Social Sciences
 - Math, Science & Engineering
 - McCaughey Gallery
 - The Writing Center

- 4 Instructional Commons North (ICN)**
- 5 Physical Plant Building (PPB)**
- 6 Receiving and Storage Building (RSB)**
- 7 Workforce Development Center (WDC)**
 - Academic Offices:
 - Business & Technology
 - Community Education
 - Customized Training
 - Green Institute
 - Pregracke Center
 - Math Success Center
 - Traffic Safety School
- 8 Child Development Lab (CDL)**
- 9 Fitness and Recreation Center (FRC)**
- 10 Astroth Community Education Center (ACEC)**
 - Auditorium
 - Challenger Learning Center
- 11 Normal Readiness Center (IL National Guard)**
- 12 Corn Crib Stadium**

Main Campus

1500 W. Raab Road • Normal, Illinois 61761
 (309) 268-8000 • www.heartland.edu





EMERGENCY INSTRUCTIONS

Welcome to Heartland Community College! We value the safety and security of everyone on the College campus. Therefore, we are glad to provide you with the following guidelines in the unlikely event of an emergency.

1. Immediately upon arriving to your room make a mental note of the building evacuation routes. Provide participants with the evacuation routes from your room. Let them know where you will gather outside the building so you can account for everyone should an evacuation be ordered.
2. We encourage you to take time to review the **Immediate Action Guide** in your room. This guide provides you with the first steps in several potential emergencies or incidents that may occur on the campus. Note the location of the emergency phone numbers on the wall in your classroom.
3. All classrooms are equipped with a telephone with several speed dial options. Please take a brief look at the phone to familiar yourself with the location and operation of the phone.
4. In the event of a medical, fire, or police emergency, call **“911”** from the phone inside your classroom; this will also trigger notification to our Safety and Security Services team. You may also contact Safety and Security Services directly using the speed dial option on the classroom phone. If the emergency is life threatening call **“911”** immediately.
5. The campus is equipped with a public address system which may alert you to an emergency or give you specific instructions based on the nature of the emergency. There are also several display areas (monolith boards and message boards outside of some classrooms) which may provide you additional information in the event of an emergency.
6. You may also sign-up for the **emergency text notification** to get text messages sent to your cellular phone. To opt-in for this messaging simply text **“hccalerts”** to **“292929”**. You will receive a confirmation message soon after opting in.
7. If you hear the building fire alarm sounding, immediately evacuate the building following the evacuation routes you identified when you entered the room. Go to the gathering location you selected and account for everyone in your group. If anyone is missing, notify Safety and Security Services at 268-8300.
8. If student misconduct includes a threat to self or others, call **“911”** as soon as possible; this will also trigger notification to our Safety and Security Services team. Keep in mind that safety is the number one concern. Therefore, address any immediate threats as needed before contacting Security or 911.
9. For other concerns or needs, contact the Scheduling Office at 268-8205 (between the hours of 8am-4:00pm, Monday-Friday) or Safety and Security Services at 268-8300 and we will be glad to assist you.

EMERGENCY PHONE NUMBERS

	From Campus Phone	From Other Phone
Campus Security	8300	268-8300
Scheduling	8205	268-8205

Revised July 22, 2014



Advanced Engineering Task Force Meeting Agenda

Meeting Name: Advanced Engineering Task Force (AET) Quarterly Meeting
Meeting Date, Time, Location: October 9, 2015 - 10:00 a.m.
 Heartland Community College, Normal, IL - Room ACEC - 2210

AET Members

	Jim Flanagan		Robert Dulski		Anita Nikolich		Tracy Smith
	Scott Armstrong		Brandon Gant		Jim Peterson		Brian Tobin
	Andrew Bullen		Rich Kulig		Alan Pfiefer		Glenn Trommels
	Troy Brown		Herb Kuryliw		Rob Zschernitz		Ed Wagoner
	Alex Cline		Joe Mambretti		Michael Shelton		
	Mike Dickson		Brian Murphy		Raj Siddaraju		

AET Staff & Guests

	Lori Sorenson		John Leonard		Robin Woodsome		Frank Walters
	Adam Ford		Essam El-Beik		Michelle Medley		Valerie Bolinger

“X” for Attendee “A” for Audio Attendee “V” for Video Conference

Topic	Presenter
1. Introductions/Roll Call	Jim Flanagan
2. Review Agenda, Approval of Minutes [Action] <ul style="list-style-type: none"> • May 15, 2015 Minutes 	Jim Flanagan
3. Old Business [Informational] <ul style="list-style-type: none"> • Software Defined Network (SDN) Working Group • DWDM Ethernet Pricing 	ICN Staff
4. New Business <ul style="list-style-type: none"> • ICN Proposed Rates & Services <ul style="list-style-type: none"> ○ Multi-Year Contracts [Action] ○ End to End Services [Action] ○ Membership [Informational] • E-rate Update [Informational] • Network Update [Informational] • Illini Cloud Update [Informational] • 2016 Meeting Schedule [Action] 	ICN Staff Jim Flanagan
5. Other Items	Jim Flanagan

ILLINOIS CENTURY NETWORK

May 15, 2015 ADVANCED ENGINEERING TASK FORCE (AET) MINUTES

Submitted for: Action

Summary: Distribution of the May 15, 2015 minutes for review by the AET

Action Requested: Adoption of the May 15, 2015 minutes

Recommended Motion: *The AET adopts the May 15, 2015 minutes with any edits as noted*

Advanced Engineering Task Force Meeting Minutes May 15, 2015

Introductions/Roll Call

At 10:08 a.m. the Advanced Engineering Task Force meeting was convened by Jim Flanagan, AET Chairman who welcomed everyone. Jim proceeded with roll call.

Members present Heartland Community College:

Jim Flanagan-Chair, Illini Cloud	Scott Armstrong, Kishwaukee Community College
Mike Dickson, Western Illinois University	Robert Dulski, Brookfield Zoo
Brandon Gant, CARLI	Rich Kulig, College of DuPage

Members, Staff & Guests via audio bridge:

Troy Brown, IL Heartland Library System	Alex Cline, President's Technical Counsel
Kevin Findley, Northern Illinois University	Joe Mambretti, Northwestern University
Brian Murphy, Eastern Illinois University	Raj Siddaraju, President's Technical Counsel
Tracy Smith, University of Illinois	Lori Sorenson, Central Management Services

Members absent:

Andrew Bullen, Illinois State Library	Anita Nikolich, National Science Foundation
Jim Peterson, Bloomington S.D./Illini Cloud	Alan Pfeifer, Sauk Valley Community College
Michael Shelton, Southern Illinois University	Brian Tobin, DeKalb CUSD 428
Glen Trommels, City of Rockford	Ed Wagner, Chicago Public Schools
Rob Zschernitz, The Field Museum	

Staff & Guests:

Robin Woodsome, Central Management Services	Frank Walters, Central Management Services
Adam Ford, Central Management Services	Essam El-Beik, Central Management Services
John Leonard, Central Management Services	Michelle Medley, Central Management Services
Valerie Bolinger, Central Management Services	

Meeting Minutes - Jim Flanagan, AET Chairman

Jim Flanagan reported that we have a few new items to add to the agenda, under Other Items add Rate Discussion.

Jim called for approval of the March 20, 2015 meeting minutes. A motion was made by Rich Kulig to approve the minutes. The motion was seconded by Brandon Gant. The minutes were approved.

Old Business

On-Net vs Off-Net Testing – Adam Ford, Central Management Services

Adam reported that testing has been successful. Approximately 16% of Wabauensee traffic was On-Net and 84% Off-Net. The College of DuPage consumption included 30% On-Net and approximately 70% Off-Net. Additional discussion held regarding traffic flow and the type of traffic that would be considered On-Net.

Software Defined Network (SDN), Frank Walters, Central Management Services

Frank Walters reported that the recently formed SDN committee met. Committee members include; Anita Nikolich, Tracy Smith, Joel Mambretti, Brandon Gant, Jim Flanagan and Frank Walters. The steps necessary for future SDN implementation were discussed by the committee.

Frank commented that staff at the University of Illinois at Urbana-Champaign (UIUC) use SDN methodology and would be a good source of information. Tracy Smith will contact UIUC to arrange a meeting with staff to discuss architecture and implementation. The committee will reach out to various vendors about setting up a test environment. Long term implementation could possibly include configuration of switches at a select number of POP sites, testing with Starlight and/or incorporating into a Cloud environment.

Joe Mambretti remarked that SDN technology is used to resolve multiple problems in various organizations. Starlight implemented SDN approximately six years ago and SDN has now become the practical solution to resolve infrastructure complications. Frank reported that Google implemented SDN architecture and AT&T as well as Verizon are transitioning to SDN. Various organizations have taken steps to adopt SDN in their data centers and are realizing significant savings for wide area network optimization. Joe commented that Google saves millions of dollars each year in their data centers along with Facebook, Amazon and Microsoft.

New Business

Customer Service Orders – Valerie Bolinger, Central Management Services

Valerie Bolinger reported for Robin Woodsome. ICN staff are processing and sending a detailed communication along with broadband service orders to all ICN customers. Customers are expected to sign, date and return the service order. All service orders will be completed and mailed prior to July 1st. Lori Sorenson commented that this has been a big effort to process with the free bandwidth going away and a significant number of customers that have never received a monthly invoice in the past. Based on the recent E-rate window closure, numbers are much higher than anticipated. By applying for E-rate and the discounted rates, many of our customers have found that they can keep the same amount of bandwidth and/or increase their bandwidth with less of a financial impact than expected.

10GE Pricing – Essam El-Beik, Central Management Services

Essam El-Beik reported that we are looking at adjusting the 10GE point to point pricing to be more in line with current market trends and rates. Page 8 of the meeting packet provides an outline of the proposed pricing. Jim Flanagan asked for a motion to approve the new 10GE pricing. A motion was made by Bob Dulski and seconded by Rich Kulig. The motion passed.

E-rate Update - Essam El-Beik, Central Management Services

Essam El-Beik reported the Federal Communications Commission (FCC) directed Universal Service Administrative Company (USAC) to fully fund all Category 1 and Category 2 requests for the 2015 funding year. After reviewing the latest figures for Illinois, it appears there is a total of \$132M recurring funding requests and 190M for one time Category 2 requests.

A public workshop on E-rate funded fiber build projects is scheduled for May 20, 2015. The workshop will include information about the December 2014 second E-rate modernization order which provides schools and libraries with additional flexibility and options for purchasing affordable high-speed broadband connectivity and fiber builds. The workshop will serve as a

mechanism for feedback from participants and the public. Essam plans to attend the workshop and will provide an update at the next meeting.

Essam commented that work for the Statewide Master Contract/Request for Proposal for Category 2 Internal Connections continues. Category 2 allows schools and libraries to receive equipment such as routers, switches, access points and equipment they may need in a school or library to support broadband. The contract will make it easier for schools and libraries to order their equipment via the E-rate process. Customers will have the ability to select a vendor from the Master Contract and submit their E-rate 471 form to receive Category 2 Internal Connections equipment. Target date for completion is July 1st.

Network Update – Frank Walters, Central Management Services

Frank Walters asked AET members to review the Network update provided on page 10 of the meeting packet. Frank reported that most of the items on the report progressing and moving forward.

Egress – Frank stated that we are proceeding with procurement for internal DDoS protection which covers all providers. We are working with providers to establish path to 40G and 100G burstable transport. Discussion held referencing 10G, 40G, 100G link options and path variants.

Backbone – Frank commented that outside of the planned maintenance window, the network backbone has been 100% operational.

Macomb to Moline via Galesburg – Frank reported that bids have been issued, received and we are currently reviewing. No additional news to report regarding builds.

DLM Testing – Jim Flanagan, AET Chairman

Jim Flanagan reported that most of the Illinois School Districts opted for the pen and paper route which is an alternative to the online testing. Most of school districts are very reluctant to use the online testing system since it is bandwidth extensive because of the visual and audio element. Jim stated that only small school districts (10 to 20 students) used the online test.

Illini Cloud – Jim Flanagan, AET Chairman

Jim Flanagan reported that they are working on new pricing that takes into account smaller school districts. They are piloting Identity Management in Bloomington and will expand testing to several other districts.

AET Membership Reappointments – Jim Flanagan, AET Chairman

Jim Flanagan reported on this item. Page 12 of the meeting packet contains a listing of AET members whose term will expire June 30, 2015. Jim recommended that we reappointment the following members for another three year term: Jim Flanagan, IL Chief Technology Officer, Scott Armstrong with Kishwaukee College, Rich Kulig with College of DuPage, Joe Mambretti with Northwestern University, Herb Kuryliw with Northern Illinois University, Brandon Gant with CARLI, Michael Shelton with Southern Illinois University Carbondale, Rob Zschernitz with Field Museum of Natural History and Glen Trommels with the City of Rockford. A motion was made by Mike Dickson. The motion was seconded by Bob Dulski. The motion carried.

Jim stated that we have one member on the board who has not attended meetings for a couple of years. We will reach out to this person and request that another designee be appointed from their organization.

Other Items – ICN Rates

Lori Sorenson requested feedback from the AET members regarding comments received from customers regarding elimination of the free bandwidth. Several customers stated that they will be purchasing bandwidth with another service provider and will most likely drop business with the ICN; however, the customers do not want to give up their IP addresses/DNS hosting.

Currently, IP addressing and DNS hosting is a value-add service. Additional inquiries received regarding minimal bandwidth purchase (1Mb= \$14/month). By purchasing a minimal amount, it places the ICN in a position to provide supplemental services such as IP addresses, DNS hosting and managing BGP. Purchase options were discussed at the last Policy Committee meeting and the committee decided not to require a minimal purchase at this time. The Policy Committee recommended that minimal purchase options be handled in a phased approach.

Lori stated that the ICN collaborated with the Illinois Office of Management & Budget (GOMB) last spring. The minimal purchase option was tabled since we have small library and school customers who connect via T1. It would be difficult for these customers to purchase a 10Mb minimum due to budget restraints. We would like to allow a one year time frame to allow customers time to migrate to Metro Ethernet prior to increasing to a 10Mb minimum purchase.

Jim Flanagan stated that we should consider implementing a T1 line support option for 1.5Mb of bandwidth purchase for our T1 customers, and require a 10Mb minimum purchase for Metro Ethernet connected customers. Lori stated that was a good idea. Frank Walters commented that we should add an automatic waiver for non-broadband connections (10Mb minimum).

Troy Brown commented that he does not anticipate that T1 connections will go away in the near future. Some of our small library/school customers do not have many options available. The only other possible option would be bonded DSL. We need to try and keep these customers on the ICN since we provide the best service connection.

Other Items – AET Membership

Lori Sorenson stated that Raj Siddaraju has expressed an interest to remain on the AET Committee as a representative from Spoon River College. A motion was made by Scott Armstrong to approve Raj Siddaraju as an AET member. Mike Dickson seconded the motion. The motion carried.

Other Items - Adjournment

The next AET meeting is scheduled for October 16, 2015. Jim Flanagan called for a motion to adjourn the meeting. Scott Armstrong made a motion for adjournment. Alan Pfeifer seconded the motion. The meeting was adjourned at 11:08 a.m. The motion carried.

ILLINOIS CENTURY NETWORK

SOFTWARE DEFINED NETWORK WORKING GROUP

Submitted for: Information

Summary: This item provides an update on the Software Defined Network (SDN) working group consisting of Anita Nikolich, Tracy Smith, Joel Mambretti, Brandon Gant, Jim Flanagan, Frank Walters and Adam Ford

Action Requested: None

Recommended Motion: *None*

SDN Working Group Update

The SDN Working Group had a very productive face to face meeting on Sept 24th. SDN Stakeholders from Department of Energy, UIUC Networking and even faculty were present and each had a unique perspective on possible futures and initial implementations that might be practical for ICN to work towards.

Here is a short list of some of the items that were discussed as possibly benefiting from an SDN infrastructure.

Examples of use:	Value Proposition
1. In Band Management	1
2. PBR (Policy Based Routing) replacement	1
3. Bandwidth Management ICN	1
4. Virtual Tap	1
5. Centralized configuration.	1
6. Filtering	2
7. Bandwidth Management Customers	2
8. Cheap PE/Distribution equipment	2
9. Extend I2 'Fabric' for Research Institutions	2
10. DDOS	3
11. Encryption	3
12. Data Center Virtualization	3
13. Oscar (provisioning)	4

On the right of the chart, there is a value proposition field that is a first thought on the value of the type of software approach to the ICN. For instance, DDOS is low since we currently have a good handle on that. The idea of having a single configuration across the entire network, virtual taps, in band management solution, PDR replacement for I2 and Bandwidth Management for Backbone (but mostly Egress) are very attractive. Things listed as 2 are ones that might be good for our customers.

Some of the comments/caveats mentioned.

- Can be configured to work on PE but not P routers. (this lessens the concern of a catastrophic failure.)
- Requires Development Staff
- Re-Education of Engineers

The first direction on this was as a technology platform for ICN customer to use, not necessarily ICN.

ICN has engineering staff but not SDN developers. Other organizations have thousands of unoccupied students. A statewide SDN testbed would prove very helpful for both research institution staff as well as ICN staff.

One of the big thoughts at the meeting was that the ICN might be able to provide dark fiber or alien wave access for research institutions to interconnect labs at different universities or other research/training facilities. This was very exciting to the SDN research folks at the meeting. The ability to work with other organizations throughout Illinois was very attractive and there was a willingness to tailor their labs to work on the above listed items that ICN is interested in but cannot develop in house.

ICN Recap:

We can look at a cost to do this, but I'm expecting that it would be quite low on our part, donating some 10G cards temporarily to connect SIUC, UIUC and Starlight with a 10G ring. I personally like the idea, it allows us to take the service to the edge of what we're comfortable managing and hand it off for development with hopes of receiving a product that we can use for many purposes over many years.

ILLINOIS CENTURY NETWORK

DWDM ETHERNET PRICING

Submitted for: Information

Summary: This item provides an update on the pricing for DWDM Ethernet point-to-point services for anchor institutions and commercial service providers

Action Requested: None

Recommended Motion: *None*



Community Anchor Institutions

Services & Rates

Broadband with Internet Egress			
Service Level Mbps	Pricing per Mbps	Monthly Recurring Cost with Port Fee Included	Installation
10	\$14.00	\$140.00	Waived
20	\$12.00	\$240.00	Waived
50	\$9.00	\$450.00	Waived
100	\$6.00	\$600.00	Waived
200	\$5.50	\$1,100.00	Waived
500	\$5.00	\$2,500.00	Waived
1,000	\$4.50	\$4,500.00	Waived

Note: The port fee for T1 circuits is \$55.00 per month. No additional cost for Layer 2 and VRF services.

Point to Point & Multi-Point Ethernet				
Service Level Mbps	Pricing per Mbps per End-Point	Monthly Port Fee per End-Point	Monthly Pricing per End-Point	Installation
10	\$6.00	\$1.67	\$61.67	Waived
20	\$4.88	\$3.33	\$100.93	Waived
50	\$3.45	\$8.33	\$180.83	Waived
100	\$2.48	\$16.67	\$264.67	Waived
200	\$2.18	\$33.33	\$496.33	Waived
500	\$2.00	\$83.33	\$1,083.33	Waived

Note: The port fee for T1 circuits is \$55.00 per month.

Lit Fiber			
DWDM Point to Point	Monthly Pricing	Description of Term	Installation
1 Gbps Ethernet Circuit	\$1,020.00	12, 24, 36, 48 Month Term	\$5,000.00
		Contract/Term 60 Months	Waived
10 Gbps Ethernet Circuit	\$3,100.00	12, 24, 36, 48 Month Term	\$30,000.00
		Contract/Term 60 Months	Waived

Dark Fiber				
Fiber	Pricing (one-time fee)	Description of Term	Annual Maintenance	Installation
Dark Fiber	\$1,000.00 per strand per mile	20 Years	\$300.00 Maintenance	Installation based on internal make ready required. Splicing should be estimated at \$4,500.00 per splice location.

Note: Dark fiber pricing is based on IRU/Lease of full path between ICN Point of Presence facilities. Additional charges apply to shorter distances and within the Chicago metropolitan area. 3 and 5 year dark fiber lease terms available.



Contact Us Today!

For more information about the ICN, contact your local Regional Technology Center or visit our website at www.illinois.net.
General Inquiries: 800-366-8768 Option 2 | cms.bccs.icn@illinois.gov





Service Providers

Services & Rates

Broadband with Internet Egress			
Service Level Mbps	Pricing per Mbps	Monthly Recurring Cost with Port Fee Included	Installation
10	\$18.00	\$180.00	Waived
20	\$15.50	\$310.00	Waived
50	\$11.50	\$575.00	Waived
100	\$8.00	\$800.00	Waived
200	\$7.00	\$1,400.00	Waived
500	\$6.50	\$3,250.00	Waived
1,000	\$6.00	\$6,000.00	Waived

Point to Point & Multi-Point Ethernet			
Service Level Mbps	Pricing per Mbps per End-Point	Monthly Pricing per End Point	Installation
10	\$9.00	\$90.00	Waived
20	\$8.00	\$160.00	Waived
50	\$6.00	\$300.00	Waived
100	\$4.00	\$400.00	Waived
200	\$3.50	\$700.00	Waived
500	\$3.00	\$1,500.00	Waived

Note: ICB available for added route protection.

Lit Fiber			
DWDM Point to Point	Monthly Pricing	Description of Term	Installation
1 Gbps Ethernet Circuit	\$1,177.00	12, 24, 36, 48 Month Term	\$5,000.00
		Contract/Term 60 Months	Waived
10 Gbps Ethernet Circuit	\$3,500.00	12, 24, 36, 48 Month Term	\$30,000.00
		Contract/Term 60 Months	Waived

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Contact Us Today!

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General Inquiries: 800-366-8768 Option 2 | cms.bccs.icn@illinois.gov



ILLINOIS CENTURY NETWORK

ICN PROPOSED RATES & SERVICES

Submitted for: Action

Summary: This item proposes updated ICN Services for anchor institutions - Multi-Year Contracts [Action], End to End Services [Action], Membership [Informational]

Action Requested: That the Advanced Engineering Task Force approve the adoption and implementation of *Multi-Year Contracts and End to End Services*

Recommended Motion: *The Advanced Engineering Task Force approves the adoption and implementation of Multi-Year Contracts and End to End Services*



Illinois Century Network

ICN Recommendations for Advanced Engineering Task Force Meeting

v1.0



Table of Contents

- Multi-Year Contracts
- End to End Service
- Membership



Multi Year Contracts

❖ Multi Year Contracts

- In addition to month to month contracts, ICN will offer contracts with terms of 1, 3 and 5 years
- 3 and 5 year term contracts will result in an up front price discount. 1 year term contracts have no price discount
 - 1 year – 0%
 - 3 years – 5%
 - 5 years – 10%
- Customer is locked into the contract for both the contracted price and the term. Customer does not benefit from any ICN price reductions during the term since customer already had a price reduction upfront
 - This will be explicitly disclosed in the service order for the term
- Customer termination of 3 and 5 year contract mid term results in early termination penalties
 - Equal to (1/2 of remaining term) x monthly fee

❖ Benefits

- Multi year contracts mean schools and libraries do not have to rebid their required service each year via form 470.
 - Significantly reduces administrative burden on both schools and ICN
 - Locks customer with ICN for the contract period
 - During E-rate season allows ICN to focus on other customers for new revenue opportunities

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Multi Year Contracts

❖ Pricing

- Pricing with discounts for 3 and 5 year terms is shown below

3 Year Term Discount	5 Year Term Discount
5%	10%

Illinois Century Network Internet Service Pricing					
Service Level	Rate Per Mbps	Monthly Recurring	12 Month Term	36 Month Term	60 Month Term
10 Mb	\$ 14.00	\$ 140.00	\$ 140.00	\$ 133.00	\$ 126.00
20 Mb	\$ 12.00	\$ 240.00	\$ 240.00	\$ 228.00	\$ 216.00
50 Mb	\$ 9.00	\$ 450.00	\$ 450.00	\$ 428.00	\$ 405.00
100 Mb	\$ 6.00	\$ 600.00	\$ 600.00	\$ 570.00	\$ 540.00
200 Mb	\$ 5.50	\$ 1,100.00	\$ 1,100.00	\$ 1,045.00	\$ 990.00
500 Mb	\$ 5.00	\$ 2,500.00	\$ 2,500.00	\$ 2,375.00	\$ 2,250.00
1,000 Mb	\$ 4.50	\$ 4,500.00	\$ 4,500.00	\$ 4,275.00	\$ 4,050.00

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End to End Service

- ❖ End to End Service
 - ICN to offer end to end lit service to schools and libraries
 - ICN already provides end to end service to State agency locations. Customers to be added to the ICN end to end lit service offering.
 - We will make available in the E-rate form 470 responses the End to End service as well as our standard Internet Egress service from an ICN POP
- ❖ Benefits
 - Allows the school or library to order service by working with just one provider (ICN)
 - When issues arise, the school or library will no longer have to work with and coordinate between multiple providers. Issue resolution will be the responsibility of ICN. ICN will work with the last mile provider as necessary.
 - Makes E-rate administration easier for schools and libraries when they deal with just one provider versus several providers
- ❖ Further work
 - We are finalizing pricing with last mile providers and aim to have this service available for E-rate funding year 2016

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Membership

- ❖ Membership
 - Customers that spend a certain minimum with ICN (\$700/month) become full ICN members, and as such eligible for certain free services
 - Under consideration for free service
 - Special event bandwidth
 - Expedited service
 - Last mile QoS
 - On-net traffic to defined on-net locations, for example Google cache, Netflix, Akamai
 - Point to point and multi-point to multi-point on-network circuits at reduced rates or at no cost in addition to purchased service (subject to port availability and available capacity)
- ❖ Benefits
 - Encourages customers to spend \$700/month to become full ICN members
 - Creates awareness around membership
 - Low impact to revenue for the proposed free services
 - Moves ICN towards goal of average spend per customer being at least \$700/month

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Membership

- ❖ Number of Customers spending \$700 or more per month
 - 3% of non-primary customers spend \$700 or more per month, but account for 39% of non-primary revenue
 - 10.7% of primary customers spend \$700 or more per month, but account for 47% of primary revenue

Non Primary Customers

Monthly Spend	Number of Sites	Total Customer Revenue / Year
\$0 - \$139	1003	\$919,044
\$140 - \$699	402	\$1,159,584
\$700 - \$9000	42	\$1,374,090
Non Primary Customer Total	1447	\$3,452,718

Primary Customers

Monthly Spend	Number of Sites	Total Customer Revenue / Year
\$0 - \$139	213	\$202,560
\$140 - \$699	581	\$2,285,436
\$700 - \$9000	96	\$2,213,490
Primary Customer Total	890	\$4,701,486

Grand Total	2337	\$8,154,204
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ILLINOIS CENTURY NETWORK

ICN NETWORK UPDATE

Submitted for: Information

Summary: This item provides an update on the ICN Network

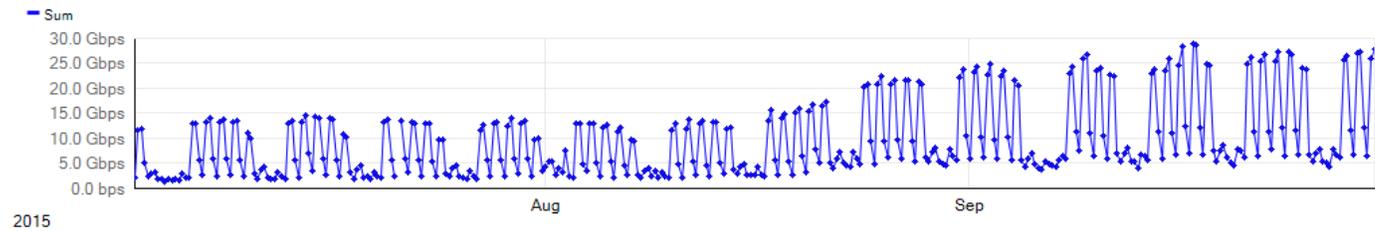
Action Requested: None

Recommended Motion: *None*

ICN Network Update October, 2015

ICN Provided Backbone Services Chart

Interface Aggregate Chart - Max bps In
Last 3 Months



SolarWinds Orion Core Services 2014.2.1

Egress

- Internal DDOS equipment received. Anticipated operational by end of October.
- Order placed for 10G burstable Cogent pipe.
- AT&T Off Net DDoS solution fully in place Second week in September. (adds Cogent).

Procurements & Contracts

- Cisco Maintenance and Hardware – In Progress

Backbone and related projects

- Distribution Consolidation
 - Route Reflector Migration
- IPv6 project: supporting IPv4 only and IPv6 only customers.
- ASR Deployment – 7600 sunset.
- BGPless Core
- IDOT/CTA Eisenhower Path

Services

- On Net vs. Off Net
 - Possible Akamai/Google ONLY on net 'bonus' for customer retention?

Other Notes/Projects:

- Macomb to Moline via Galesburg.
- Moline POP Site move
Permitting issues resolution within a few weeks.

Fiber Work / Customer Adds

- McHenry Build – Scheduled to be completed in early October.
- SIUE Build – Expected to be complete by the end of December.
- NIU 10G Internet Service – January 1
- Chicago REP Turnup is on schedule. Waiting on Eisenhower path to complete the ring.
- Steady stream of splice and new customer work.

SDN

- Subgroup met the third week of September. The goal is to make sure that we are ready, and have one or more pilot cases to work with over the next year or so. Members who expressed interest: Anita Nikolich, Tracy Smith, Joel Mambretti, Brandon Gant and Jim Flanagan. See SDN update attachment.

ILLINOIS CENTURY NETWORK

2016 MEETING SCHEDULE

Submitted for: Action

Summary: This item seeks to review the meeting schedule for the next year

Action Requested: That AET adopts the calendar year 2016 meeting schedule as presented

Recommended Motion: *The AET adopts the 2016 meeting schedule.*

ILLINOIS CENTURY NETWORK 2016 ADVANCED ENGINEERING TASK FORCE MEETING SCHEDULE

The 2016 meeting schedule is based on four meetings per year, occurring on the third Friday of the month of January, March, May and October.

The schedule for 2016 is as follows:

- January 15, 2016
- March 18, 2016
- May 20, 2016
- October 21, 2016

The January and March meeting will be held in the Central Management Services (CMS) second floor video conference room of the Bureau of Communication and Computer Services (BCCS) Building, 120 W. Jefferson, Springfield and at the James R. Thompson Center in Chicago. The May and October meetings will be held in Bloomington at Heartland CC. A conference bridge is also available for those members unable to attend at any of the locations.

Recommended Motion: *The AET adopts the 2016 meeting schedule*