



Advanced Engineering Task Force Meeting Agenda

January 15, 2016
10:00 a.m.



Advanced Engineering Task Force Meeting Agenda

Meeting Name: Advanced Engineering Task Force (AET) Quarterly Meeting
Meeting Date, Time, Location: January 15, 2016 - 10:00 a.m.
 Video Conference – CMS 120 W. Jefferson & JRTC 100 W. Randolph 9-036

AET Members

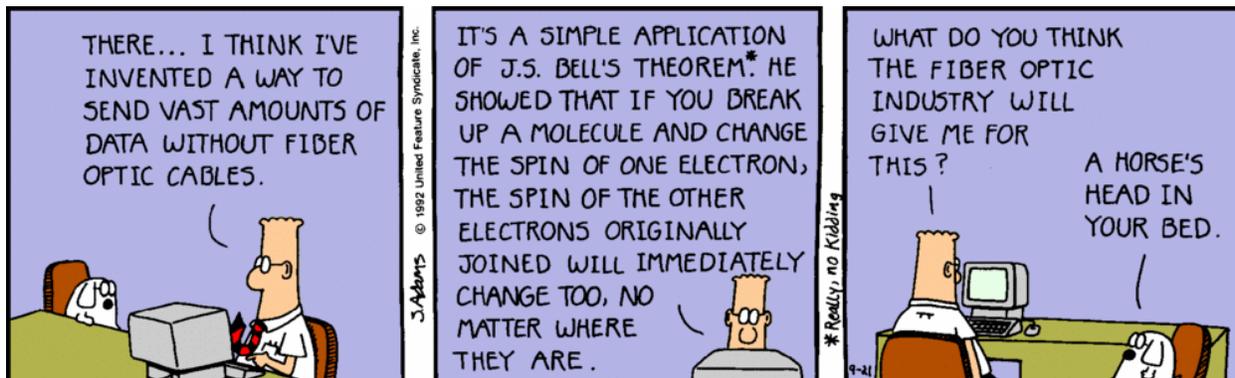
	Jim Flanagan		Amin Kassem		Anita Nikolich		Brian Tobin
	Andrew Bullen		Rich Kulig		Jim Peterson		Glenn Trommels
	Troy Brown		Herb Kuryliw		Alan Pfieler		Ed Wagoner
	Mike Dickson		Joe Mambretti		Michael Shelton		
	Robert Dulski		RJ McGarry		Raj Siddaraju		
	Brandon Gant		Brian Murphy		Tracy Smith		

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"> • October 9, 2015 Minutes 	Jim Flanagan
3. Old Business [Informational] <ul style="list-style-type: none"> • Software Defined Network (SDN) Working Group 	ICN Staff
4. New Business <ul style="list-style-type: none"> • E-rate Update [Informational] • Network Update [Informational] • Fiber Builds [Informational] • Proposed Pricing for Bandwidth of 1Gbps to 10Gbps [Action] • 2016 Meeting Schedule Revision [Action] 	ICN Staff Jim Flanagan
5. Other Items	Jim Flanagan



**ILLINOIS CENTURY NETWORK
OCTOBER 9, 2015 ADVANCED ENGINEERING TASK FORCE (AET) MINUTES**

Submitted for: Action

Summary: Distribution of the October 9, 2015 minutes for review by the AET

Action Requested: Adoption of the October 9, 2015 minutes

Recommended Motion: *The AET adopts the October 9, 2015 minutes with any edits as noted*

**ILLINOIS CENTURY NETWORK
OCTOBER 9, 2015 ADVANCED ENGINEERING TASK FORCE (AET) MINUTES**

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:

Mike Dickson, Western Illinois University	Robert Dulski, Brookfield Zoo
Brandon Gant, CARLI	Rich Kulig, College of DuPage
Anita Nikolich, National Science Foundation	Alan Pfieler, Sauk Vallley Community College
Raj Siddaraju, President’s Technical Counsel	Tracy Smith, University of Illinois
Glen Trommels, City of Rockford	

Members, Staff & Guests via WebEx & Audio Bridge:

Jim Flanagan-Chair, Illini Cloud	Scott Armstrong, Kishwaukee Community College
Alex Cline, President’s Technical Counsel	Joe Mambretti, Northwestern University
Michael Shelton, Southern Illinois University	

Members absent:

Andrew Bullen, Illinois State Library	Troy Brown, IL Heartland Library System
Herb Kuryliw, Northern Illinois University	Brian Murphy, Eastern Illinois University
Jim Peterson, Bloomington S.D./Illini Could	Brian Tobin, DeKalb CUSD 428
Ed Wagoner, Chicago Public Schools	Rob Zschernitz, 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	Andre Bouravnev, Central Management Services
Ken Sem, Brookfield Zoo	RJ McGarry, Kishwaukee Community College

Meeting Minutes - Jim Flanagan, AET Chairman

Jim Flanagan introduced the first item on the agenda, approval of the October 9, 2015 meeting minutes. A motion was made by Brandon Gant to accept the minutes. The motion was seconded by Scott Armstrong. The motion carried.

Old Business

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

Frank Walters reported that the SDN committee met on September 24th. SDN stakeholders from the Department of Energy and UIUC Networking faculty were present. Each member offered a unique perspective on SDN implementations. Frank referred members to page 10 of the meeting packet for a list of items that were discussed. Joe Mambretti commented that it is important that engineers stay current with emerging networking trends and SDN is a big part of networking. Tracy Smith commented that SDN is an exciting concept and stated that SDN may be a cultural change for some engineering staff. Jim Flanagan suggested that we create a centralized discussion forum and/or distribution list so that all participants can exchange ideas, relay questions and discuss future plans.

New Business

ICN Proposed Rates & Services – Essam El-Beik, Central Management Services

Essam El-Beik reported that there are three service proposals to review; multi-year contracts, end to end service, and membership.

End to End Service – ICN will offer end to end lit service to schools and libraries which will be available via the E-rate form 470 along with our standard Internet egress service. This offering allows schools and libraries to order service and work with just one provider (ICN). When issues arise, the school or library no longer has to work between multiple providers. We are finalizing pricing with last mile service providers and plan to have this service available for E-rate funding year 2016.

Multi-Year Contracts – In addition to month to month contracts, the ICN will offer one, three and five year contracts. Refer go the meeting packet to review price discounts. Customers will be locked into the contract for both the contract price and term. By purchasing a multi-year contract, schools and libraries do not have to rebid their required service each year via form 470 and it will significantly reduce administrative burdens on schools and the ICN.

Membership – Customer becomes a full ICN member by spending a certain monthly minimum and will then be eligible for various free services. Free services may include special event bandwidth, expedited service, last mile QoS, On-net traffic to defined on-net locations, point to point and multi-point on-network circuits at reduced rate or at no cost in addition to purchased service.

Jim Flanagan asked for a motion to approve the Multi-Year Contract proposal. A motion was made by Glenn Trommels. The motion was seconded by Bob Dulski. The motion carried. Jim asked for a motion to approve the End to End service proposal. A motion was made by Glenn Trommels. The motion was seconded by Alan Pfeifer. The motion carried.

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

Essam El-Beik reported on the FCC Manageable Services List (MSL) and Eligible Services List (ESL). The MSL describes services eligible for E-rate funding the ESL provides guidance on the eligibility of products and services under the E-rate program. Essam provided clarification on two items in the ESL document, starting with eligibility of operations and maintenance on networks. If a school has already built a network or purchased fiber IRU, the operation and maintenance of the network is now an eligible expense. The second clarification concerns special construction. Special construction is subject to additional subsidy from FCC if the state contributes. The school can pay their portion of the special construction over 4 years. The ESL documents can be found on the USAC website - www.usac.org.

Network Update – Frank Walters, Central Management Services

Frank Walters reported that the internal DDoS equipment has been received and will be operational by the end of October. An order has been placed for a 10G burstable Cogent pipe. Jim Flanagan commented that services for DDoS are a great selling point for many of the institutions and that we should publicize. Frank stated that we are working on a flier that will include a description and overview of the service. Andre Bouravenev reported we have the tools to mitigate traffic if necessary, but we will not be offering any additional features.

Frank reported on the Cisco maintenance and hardware contract. The contract will expire this fiscal year and we are working on renewal. In addition, we are working on an RFP for contracting fiber builds.

Frank provided a report regarding the distribution consolidation and route reflector migration. Education route reflectors are merging into a smaller route reflector in order to maintain less routers and ensure redundancy. This will help when we merge state agencies and the educational entities onto the same routers.

Frank commented that Arin is running out of IP address space. For the past two years we have been assigning IPv6, but we do not have a good solution that provides IPv4 users access to IPv6 infrastructure. In the future, we will require that customers use IPv6 addresses.

Frank reported on the Macomb to Moline via Galesburg POP site move. The move is just about complete and we are waiting on permit finalization. Mike Dickson stated that he will assist Frank with permit finalization.

Frank reported that the McHenry build should be complete in early October. Completion date for the SUIE build is the end of the year. NIU has request 10G Internet service. We are working with Herb on this request.

Illini Cloud – Jim Flanagan, AET Chairman

Jim Flanagan reported that Illini Cloud has started deployment of Data Ingestion (DI) and reporting solution to school districts. They have added a new category “Illini Cloud Plus” in their membership price list. The new package includes basic membership, DI, and automates the Student Information System (SIS) connections to the Illinois State Board of Education (ISBE). SIS is an identity solution that manages identities for staff, parents, and students. The portal is a DI and conversion solution that essentially allows communications with unrelated SIS business packages and academic solutions.

2016 Meeting Schedule – Jim Flanagan, AET Chairman

Jim Flanagan presented the 2016 meeting schedule. Meetings are scheduled January 15, March 18, May 20 and October 21. Scott Armstrong made a motion to approve the meeting schedule. Raj Siddaraju seconded the motion. The motion carried.

Adjournment

Jim Flanagan moved to adjourn the meeting. Motion by Brandon Gant and seconded by Rich Kulig. Motion passed and meeting adjourned at 11:55 a.m. The next meeting will be January 15, 2016.

**ILLINOIS CENTURY NETWORK
NETWORK UPDATE**

Submitted for: Information

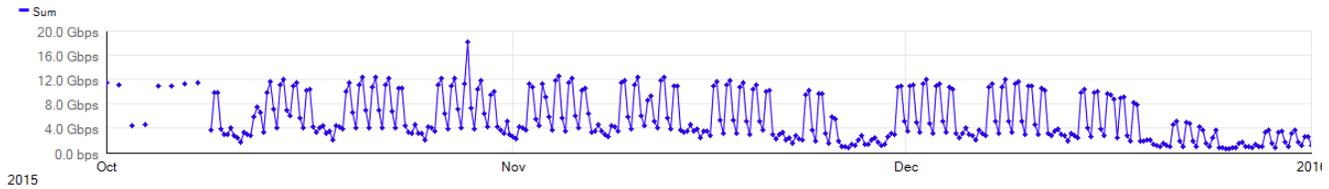
Summary: This item provides an update on the Network

Action Requested: None

Recommended Motion: *None*

ILLINOIS CENTURY NETWORK NETWORK UPDATE

Interface Aggregate Chart - Max bps In
10/1/2015 12:00:00 AM~1/1/2016 12:00:00 AM



SolarWinds Orion Core Services 2014.2.1

Egress

- DDoS Operational Late October
- Order placed for 10G burstable Cogent pipe

Procurements & Contracts

- Cisco Maintenance and Hardware – in progress
- Locate RFP – Cost Savings, - in progress
- Construction RFP – more diverse vendors for competition, in progress

Backbone and related projects

- Distribution Consolidation In Progress
- Route Reflector Migration Complete
- IPv6 project: supporting IPv4 only and IPv6 only customers
- ASR Deployment – 7600 sunset
- BGP less Core Est. Completion 8/1/2016
- IDOT/CTA Eisenhower Path Analysis Complete, begin work 2016

Services

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

Other Notes/Projects:

- Macomb to Moline via Galesburg
- Moline POP Site move

Permitting issues resolved, work commencing

Fiber Work / Customer Adds

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

SDN

Subgroup working on collaborative plan and next steps. Plan OK'd to go forward investigating how research institutions and ICN can collaborate on a Statewide SDN test bed. SDN group discussing how to organize this effort.

**ILLINOIS CENTURY NETWORK
FIBER BUILDS**

Submitted for: Information

Summary: This item provides an update on Fiber Builds

Action Requested: None

Recommended Motion: *None*

ILLINOIS CENTURY NETWORK FIBER BUILDS

Over the past several months we have worked to identify those Illinois schools and libraries that are candidates for ICN fiber builds. The identification process involved the following steps:

- (i) Determine via Global Information System (GIS) tools the school and library locations physically close to ICN fiber.
- (ii) Outreach to schools and libraries via letter, email and webinar explaining the ICN Fiber Build program.
- (iii) Continuous outreach by ICN Regional Technology Centers (RTC) advising candidate schools and libraries to consider an ICN fiber build.
- (iv) For those locations identified as close to ICN fiber, review their E-rate form 471 for funding year 2015. Remove the locations already under multi-year contracts with other providers.
- (v) Review the location's current connection technology, bandwidth and price – identifying suitable locations.
- (vi) Submit the identified locations to CMS Engineering for a firm E-rate quote.
- (vii) Respond to the customer E-rate form 470 with the ICN Internet service, including a special construction charge for the fiber build. Allow customer to pay their portion of the special construction in installments over 4 years, if requested by the customer.

The ICN fiber build program takes advantage of new E-rate rules introduced in 2014, to facilitate the build of high speed broadband to our nation's schools and libraries. The key E-rate rules relevant to the ICN fiber build program are:

- (i) The FCC has suspended the requirement to amortize over at least three years construction projects that cost over \$500,000.
- (ii) The FCC allows the school or library to pay their portion of the construction cost in installments over up to 4 years.

We expect to respond to approximately 40 customers with Internet service that includes a fiber build in the April / May 2016 timeframe, after the closing of the E-rate form 471 window, we will know how many fiber build projects we have been awarded.

**ILLINOIS CENTURY NETWORK
PROPOSED PRICING FOR BANDWIDTH OF 1GBPS TO 10GBPS**

Submitted for: Action

Summary: This item proposes updated pricing for Gig Services

Action Requested: That the Advanced Engineering Task Force approve the implementation of the new pricing

Recommended Motion: *That the Advanced Engineering Task Force approve the adoption of the proposed pricing.*

**ILLINOIS CENTURY NETWORK
PROPOSED PRICING FOR BANDWIDTH OF 1GBPS TO 10 GBPS**

Proposed ICN Pricing for Bandwidth of 1Gbps to 10Gbps				
Mbps	Per Mbps	12 Month Term	36 Month Term	60 Month Term
1000	\$ 4.50	\$ 4,500.00	\$ 4,275.00	\$ 4,050.00
2000	\$ 4.25	\$ 8,500.00	\$ 8,075.00	\$ 7,650.00
3000	\$ 3.89	\$ 11,670.00	\$ 11,086.50	\$ 10,503.00
4000	\$ 3.62	\$ 14,480.00	\$ 13,756.00	\$ 13,032.00
5000	\$ 3.36	\$ 16,800.00	\$ 15,960.00	\$ 15,120.00
6000	\$ 3.13	\$ 18,780.00	\$ 17,841.00	\$ 16,902.00
7000	\$ 2.86	\$ 20,020.00	\$ 19,019.00	\$ 18,018.00
8000	\$ 2.63	\$ 21,040.00	\$ 19,988.00	\$ 18,936.00
9000	\$ 2.42	\$ 21,780.00	\$ 20,691.00	\$ 19,602.00
10000	\$ 2.22	\$ 22,200.00	\$ 21,090.00	\$ 19,980.00

Subject to engineering study
Installation charges may apply

**ILLINOIS CENTURY NETWORK
2016 ADVANCED ENGINEERING TASK FORCE 2016 MEETING SCHEDULE REVISION**

Submitted for: Action

Summary: This item seeks approval to change the October 21, 2016 meeting date to September 16, 2016

Action Requested: That the Advanced Engineering Task Force approve the meeting date change as presented

Recommended Motion: *That the Advanced Engineering Task Force approve the meeting date change as presented*

**ILLINOIS CENTURY NETWORK
2016 ADVANCED ENGINEERING TASK FORCE 2016 MEETING SCHEDULE REVISION**

In order to align with the ICN Policy Committee 2016 meeting schedule, the October 21, 2016 AET meeting will need to be rescheduled to September 16, 2016. Meeting place and time remain the same.

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

The schedule for 2016 is as follows:

- January 15, 2016
- March 18, 2016
- May 20, 2016
- September 16, 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 September meetings will be held in Bloomington at Heartland CC. A conference bridge is available for those members unable to attend in person.