



Advanced Engineering Task Force Meeting Agenda

May 19, 2017
10:00 a.m.



Advanced Engineering Task Force Meeting Agenda

Meeting Name: Advanced Engineering Task Force (AET) Quarterly Meeting

Meeting Date, Time, Location: May 19, 2017 - 10:00 a.m.

Join WebEx Meeting [Join WebEx meeting](#) Access Code: 803 140 657

Meeting password: icn2017

Join by phone: +1-415-655-0002 US Toll [Global call-in numbers](#)

AET Members

Jim Flanagan, Chair	Mindy Fiscus	RJ McGarry	Glen Trommels
Andrew Bullen, Co-Chair	Brandon Gant	Matthew Pennell	
Troy Brown	Amin Kassem	Michael Shelton	
Mike Dickson	Rich Kulig	Raj Siddaraju	
Tom Donovan	Herb Kuryliw	Shannon Smith	
Robert Dulski	Joe Mambretti	Tracy Smith	

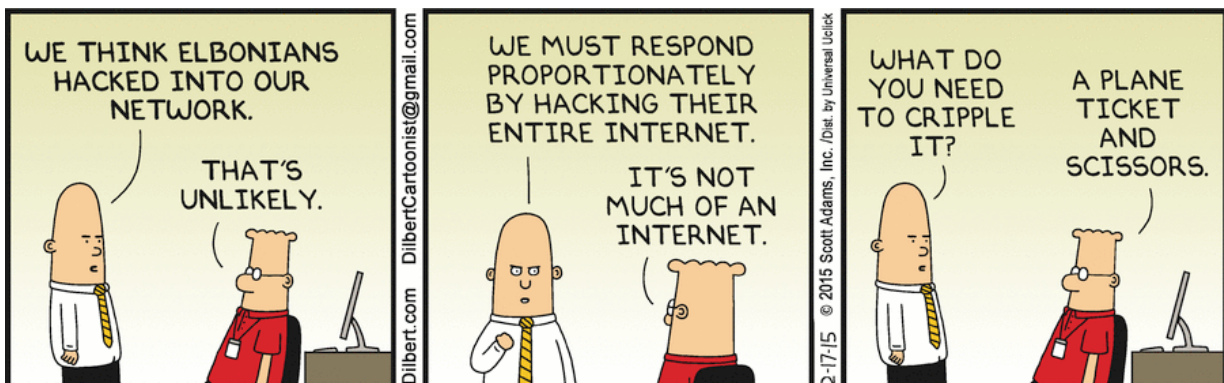
AET Staff & Guests

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

“X” for Attendee “W” for WebEx “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"> March 17, 2017 Minutes 	Jim Flanagan
3. Old Business [Informational] <ul style="list-style-type: none"> Software Defined Network (SDN) 	Frank Walters
4. New Business <ul style="list-style-type: none"> Smart State Initiative [Informational] TECH 2017 Report [Informational] DDoS Simulation Showcase Presentation [Informational] Network Report [Informational] AET Membership [Action] Round-Table Discussion: New Meeting Schedule, Lunches, Locations, Showcase Presentations 	John Leonard & Val Bolinger Val Bolinger Andre Bouravnev Frank Walters & Adam Ford Jim Flanagan All All
5. Other Items	Jim Flanagan

The next AET meeting is September 22, 2017.



MARCH 17, 2017 ADVANCED ENGINEERING TASK FORCE (AET) MINUTES

Submitted for: Action

Summary: Distribution of the March 17, 2017 minutes for review by the AET

Action Requested: Adoption of the March 17, 2017 minutes

Recommended Motion: *The AET adopts the January 16, 2017 minutes with any edits as noted*

**ILLINOIS CENTURY NETWORK
JANUARY 6, 2017 ADVANCED ENGINEERING TASK FORCE (AET) MINUTES**

Introductions/Roll Call

At 10:05 a.m. the Advanced Engineering Task Force meeting was convened by Jim Flanagan, Chairman of the AET who welcomed everyone. Robin Woodsome proceeded with the roll call.

Members at Chicago 3-105

Andrew Bullen, Co-Chair, Illinois State Library	Jim Flanagan, Chairman IlliniCloud
Robert Dulski, Brookfield Zoo	

Members at Springfield 1-142

Mike Dickson, Western Illinois University	Brandon Gant, CARLI
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Members via Audio Bridge/WebEx

Troy Brown, Illinois Heartland Library System	Shannon Smith, Technology Director
Tom Donovan, Aptakisik-Trip SC #102	Tracy Smith, University of Illinois
Amin Kassem, ICCCA Technology Commission	Michael Shelton, Southern Illinois University
Rich Kulig, College of DuPage	Raj Siddaraju, Spoon River College
Matthew Pennell, ROE #20	Glenn Trommels, City of Rockford
RJ McGarry, Kishwaukee Community College	

Members Absent:

Herb Kuryliw, Northern Illinois University	Anita Nikolich, National Science Foundation
Joe Mambretti, Northwestern University	Mindy Fiscus, Learning Technology Center #6
Brian Murphy, Eastern Illinois University	

Staff & Guests:

Valerie Bolinger, DoIT/ICN	Frank Walters, DoIT/ICN
Essam El-Beik, DoIT/ICN	Robin Woodsome, DoIT/ICN
Adam Ford, DoIT/ICN	John Leonard, DoIT/ICN
Michelle Medley, DoIT/ICN	

Meeting Minutes

Jim Flanagan, AET Chairman

Jim Flanagan introduced the first item on the agenda, approval of January 16, 2017, meeting minutes. Frank Walters commented that the word dropbox should be replaced with box in the SDN report. Duly noted. A motion was made by Brandon Gant to accept the minutes. The motion was seconded by Robert Dulski. The motion carried.

Old Business

Software Defined Network (SDN)

Frank Walters, Department of Innovation & Technology/Illinois Century Network

Frank Walters referred members to pages 6 and 7 of the meeting packet for report. Based on the AET and ICN staff desire to explore SDN technology as the next generation networking platform, network staff is investigating the technology. Given the complexity of the SDN environment, the next step is to test in a hands-on environment and program simple SDN routines. Frank commented regarding the status of the SDN Request for Information (RFI). The technology review is in process and will be completed by the end of the month. All vendors have been contacted and the team is working on scheduling equipment and documenting

technologies for future procurement recommendations. Additional discussion held regarding best practices, equipment requirements and future goals.

New Business

E-rate Update

Essam El-Beik, Department of Innovation & Technology/Illinois Century Network

Essam provided report. We continue to respond to E-rate bid requests from K12 and library constituents. This year we have incorporated a new pricing model for traditional Internet access, and our new bundled option which includes transport and Internet access where available. New this year are 12, 30 and 60 month term options which offers even greater discounts. The USAC filing window for funding year 2017 for form 470 will be open until April 13th and the last day to file 471 is May 31st.

K-12 Broadband Initiative

Essam El-Beik, Department of Innovation & Technology/Illinois Century Network

Essam El-Beik provided an update on the K-12 Broadband Initiative. The State of Illinois continues to work with Education SuperHighway (ESH) to expand K-12 Broadband and Digital Learning throughout Illinois. Essam stated the ESH released the State of States report in January. The report highlights the progress Illinois and other states have completed. In addition, Governor Rauner followed with a press release showing improvements in a number of Illinois school districts which meeting minimum connectivity goals. ESH and Learning Technology Centers (LTC) have provided data points and information to ISBE and the Governor's budget office regarding the state matching fund and has started to engage the legislature.

The Leadership Alliance Summit was held February 21st. An Illinois State Match one pager was provided to 500 board members, administrators and school leaders at the summit. ESH and LTCs have worked with over 30 districts interested in fiber upgrades in 2017 and have conducted outreach to dozens of others who are still below the 100 kbps/student minimum connectivity goal.

Network Update

Frank Walters, Department of Innovation & Technology/Illinois Century Network

Frank referred members to page 11 of the meeting packet for an overview of the report. He commented that he has restructured the network report and it now provides a holistic view of the state network. Our recent peering fabric upgrade is working well and our Egress costs have gone down. We have several procurement contracts in draft process including Egress and Fiber Locate. Legal is currently reviewing the Fiber Construction RFP and we have started the renewal process for Fiber Maintenance. Frank stated that ICN staff continues work on a full-service catalog. The service catalog will include various new services, descriptions, updated pricing and examples of applications. Additional discussion held regarding future services.

2017 ICE Conference Update

Valerie Bolinger, Department of Innovation & Technology/Illinois Century Network

Val provided report. This year's conference was one of the largest since its inception 20 years ago with nearly 4000 individuals in attendance. ICN staff from our Regional Technology Centers and Network Team were in attendance. Network Operations Supervisor, Andre Bouravnev provided information on how to keep a school safe from a DDoS attack. Attendees

had the opportunity to view a live simulation of a DDoS threat. ICN Staff shared the new pricing model for Internet access, and our new bundled service option which includes transport and Internet access where available. Over 1000 informational handouts and various marketing materials/products were dispersed to attendees.

The 2018 has ICE Conference will be hosted in Schaumburg, IL.

Advanced Engineering Task Force Membership

Jim Flanagan, AET Chairman

Jim referred members to pages 18 through 21 of the meeting packet. Page 20 contains a listing of AET members whose term will expire June 30, 2017. The AET is seeking reappointment for Troy Brown, Illinois Heartland Library System and Robert Dulski, Brookfield Zoo, for another three-year term. We are not seeking reappointment for Brian Murphy, Eastern Illinois University and Anita Nikolich, National Science Foundation due to lack of attendance. Jim asked for a motion for approval of the membership revisions. A motion was made by Mike Dickson. The motion was seconded by Brandon Gant. The motion carried.

Adjournment

Jim Flanagan moved to adjourn the meeting. Motion by Raj Siddaraju and seconded by Robert Dulski. Motion passed. Meeting adjourned at 11:200 a.m. The next meeting is scheduled May 19, 2017.

**ILLINOIS CENTURY NETWORK
SMART STATE INITIATIVE**

Submitted for: Information

Summary: This item provides an update on the Smart State Initiative

Action Requested: None

Recommended Motion: *None*

ILLINOIS CENTURY NETWORK SMART STATE INITIATIVE

Following the Smart State workshop in December, 9 Smart State initiatives have been identified with corresponding leads. These initiatives are:

1. Build Environment and IOT
 - a. Smart Buildings
 - b. Smart Highways/Transportation
 - c. Connected Public Safety
 - d. Fleet management
 - e. Smart Streetlights
2. Business Platform
3. Shared Management & Technology Platform
4. State Assets/Resource Use: Future Ready
5. Master Contracts
6. Mobile eGov
7. Smart State Leadership in the Digital Age
8. Smart State Model
9. Policy

A kick off meeting was held on April 4th. The first deliverables are 75 day plans for each initiative.

Some of the initiatives were started last year and have made significant progress. For example, with Smart Streetlights, the Department of Innovation & Technology (DoIT), in conjunction with Central Management Services (CMS), released a request for companies to bid on a statewide master contract for Smart Street Lighting for Illinois Municipalities. This will allow local governments, both large and small, to benefit from a statewide contract and capitalize on the cost savings and scalability of LED street lighting. The smart street light infrastructure will also provide the foundation for implementation of value add services and applications. Responses were due April 13th 2017. There was significant interest in the procurement as seen by the questions received and published at the Illinois Procurement Bulletin. Evaluation of responses is currently taking place, with award announcement expected in June/July 2017 timeframe.

**ILLINOIS CENTURY NETWORK
TECH 2017 REPORT**

Submitted for: Information

Summary: This item provides an update on the Tech 2017 Report

Action Requested: None

Recommended Motion: *None*

ILLINOIS CENTURY NETWORK TECH 2017 REPORT

Illinois Students Travel to Springfield for TECH 2017! TECH 2017 - Twitter: @ice_il #ILTECH2017

Governor Rauner kicked-off this year's **TECH 2017 Conference** with a group selfie and acknowledged the importance of technology in the classroom. Below are highlights of the event and success stories from some of the Illinois schools who participated.



The purpose of TECH 2017 is to raise awareness of the critical role technology plays in preparing students to succeed in today's world, and to show the need for increased funding for classroom technology. Hundreds of students demonstrated the creative ways technology is being used to enhance and accelerate student achievement in Illinois schools today.

The Department of Innovation & Technology/Illinois Century Network (DoIT-ICN) is proud to be a supporter and sponsor of TECH 2017. We enjoyed visiting with schools and spending time with some amazing, talented students, many of whom are ICN customers.

Judith Giacomina Elementary School (Westville, IL) - Connecting Literacy to Digital Literacy in Early Childhood Classrooms

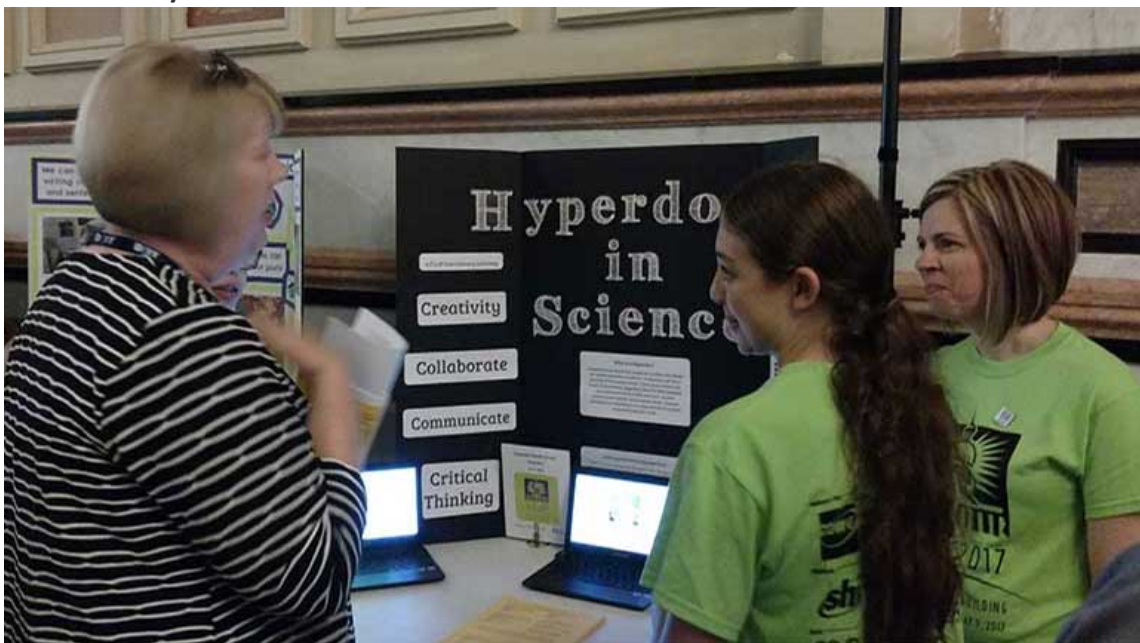
Kindergarten Teacher Patty Collins and her students proudly showcased their writing, phonics and technological skills to us. They used Storybird, a creative community website where young readers and authors share the art of storytelling by creating online picture books. **Outstanding work by some of our future Illinois authors!**



Grayslake Middle School (Grayslake, IL) - Engage, Explore, Explain

Teacher Jennifer Ersler and her seventh-grade students demonstrate the uses of hyperdocs to Lori Sorenson, Chief Networking Officer of DoIT. A hyperdoc is an interactive, engaging, digital unit that contains an innovative lesson for students - a 21st Century worksheet. Collaboration and sharing are easier than ever before and the possibilities are endless with technology.

Kudos to Grayslake Middle School!



Silas Willard Elementary School (Galesburg, IL - Global Landmark Game

Teacher Sarah Brakenbury and her fourth-grade students presented on Kidlink Global Landmark Games, an event held twice a year for students all over the world. Students work together, select a landmark and share multiple clues. The goal is to figure out as many landmarks as they can from around the globe. Silas came in second in its division this year and took home first place honors among the elementary schools in their division. **Well done and congratulations on first and second place honors!**



Oakwood Grade School (Oakwood, IL) - Wind Energy, the Wave of the Future

Kimberlee Huchel and her fifth-grade students discussed with ICN staff how they designed and engineered an impressive display highlighting alternate energy sources using wind mills. The students plan to build wind powered generators to energize electric vehicles and charge the rechargeable batteries later this year. **Wind energy is truly the wave of the future, great job on this exceptional work!**



Graves Elementary School (Summit, IL) - The Wacky World of Bees!

Teacher Christy Smith and her Kindergarten students, through using an online program, created a book about bees and shared important facts they learned about the wonderful and wacky world of bees. The students created the storyline and all the illustrations. When asked, who was the Queen Bee, they pointed at Christy Smith, their teacher. **Way to go and good job on creating such a Buzz!**



Marshall Junior High School (Marshall, IL) - Marshall Cubs Show Civic Duty

Teachers Lauretta Morris and Jeff Whitmore with their eighth-grade students created campaign videos for the November election. iPads were used to create research criteria about their candidates and they produced videos to share with the student body so that students could make informed decisions. Be sure to check out their technology success story on their [YouTube site](#). **Incredible work, we look forward to viewing your next masterpiece!**



Minooka Intermediate School (Minooka, IL) - Augmented Reality and Google Classrooms in School Yearbooks

Teacher Tammy Walsh and her sixth-grade students used "Augmented Reality" to produce their middle school yearbook. When using the Aurasma Augmented application, students can simply hold their devices over a certain page of the yearbook and play taped videos of events that happened throughout the school year. **Awesome work, you literally brought your yearbook to life!**



Coonley Elementary School (Chicago, IL) -Tech Toys Builds STEM Skills

Teacher Karen Malhiot and her fourth-grade students used various Tech Toys (Little Bits, Ozobots, Makey Makey and Snap Circuits) to build engineering and coding skills. End-result...motorized toys which were built from their entire design process. **Cool and innovative! Keep up the good work Coonley Elementary!**



Galileo Scholastic Academy of Math and Science (Chicago, IL) - Coding with EVENTS

Technology Coordinator, Anthony Tsang along with sixth and seventh-grade students, wrote code to express their interests through storytelling, games and arts. By using code, the students become producers rather than consumers when using technology in their classrooms. **Spectacular work by some very creative students!**



Blue Ridge Intermediate Junior High School (Mansfield, IL) - Digital Bytes - How Teens Can Make a Positive Impact on Our Digital World

Teacher Andre Washington and his eighth-grade students understand how they can make an impact in our digital world in a positive way. Digital Bytes teaches teens digital citizenship through media-rich activities that tackle real-world dilemmas. Teens create collaborative projects and share ideas for making smart and safe choices online such as Internet Hoaxes, Online Tracking, The Power of Likes and much more. **You are making a positive impact on Illinois citizens, keep up the good work!**



Kelvin Grove Middle School (Lockport, IL) - Tinkering with Illinois, bringing 3D models to life!
Jessica Lakics and her seventh-grade students demonstrated the design process of creating a model of Illinois in TinkerCad a cloud-based 3D design program. The students guided us through the steps to form the end product, a hard plastic material shaped like Illinois. **The future looks bright for Illinois; we have future engineers and designers ready to join our workforce!**



TECH 2017 is a not-for-profit initiative presented by the Illinois Computing Educators, and is supported by a broad range of education and business organizations. Special thanks to TECH 2017 Co-Chairs, Toni Hotzfield and Tim McIlvain for a job well done.

A thumbs-up and high-five to Digital Learning and Technology in Illinois Classrooms!



**ILLINOIS CENTURY NETWORK
DDoS SIMULATION SHOWCASE PRESENTATION**

Submitted for: Information

Summary: Showcase presentation of ICN DDoS Protection Services.

Action Requested: None

Recommended Motion: *None*

ILLINOIS CENTURY NETWORK DDoS SIMULATION SHOWCASE PRESENTATION

A distributed denial-of-service (DDoS) attack is an attempt to make an online service, website or network unavailable by overwhelming it with traffic, effectively stopping normal flow of traffic.

ICN proactively monitors all customer connections 24/7 and can quickly identify real and potential DDoS attacks which may impact service. On average, the ICN identifies and mitigates over 20 DDoS attacks per month targeting K-12, higher education, libraries and government sites. Attacks have ranged between 1 to 20Gbps per attack, and can last between 25 minutes to over 2 hours. Our DDoS service is available to all ICN customers regardless of size or bandwidth subscription level.

Live Presentation: Andre Bouravnev, ICN Network Supervisor will demonstrate and share information and statistics about ICN DDoS protection.

**ILLINOIS CENTURY NETWORK
NETWORK UPDATE**

Submitted for: Information

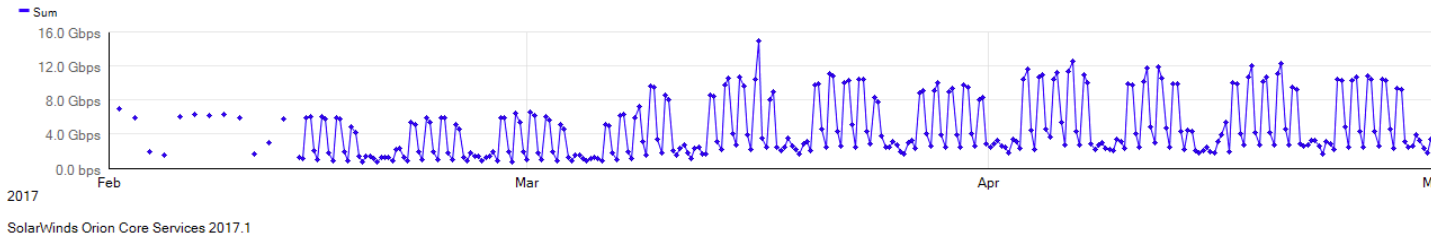
Summary: This item provides an update on the Network.

Action Requested: None

Recommended Motion: *None*

ILLINOIS CENTURY NETWORK NETWORK UPDATE

ICN Egress Bandwidth
Egress + I2 + Equinix Peers



Availability Statistics

The ICN transmitted an estimated 29.9 Petabytes for customers in April, 2017
 Network Availability for April was 99.954% with availability for the last year being 99.996%.
 April Network Latency was 11 ms. The ICN Target Latency is 20 ms.
 Network Jitter for that same period was 0 ms while the target Jitter is 5 ms.

Traffic Levels (Gb)	29.65 Gb
Peak Traffic (Gb)	32.33 Gb
Number of DDoS Attacks	4
Transmitted Bandwidth	29.90 Pb

Egress

- End of year bandwidth use is dropping related to the end of school year.

Procurements & Contracts

- Egress – **Draft with DoIT legal being reviewed**
- Fiber Locate
- Fiber Construction – **Posted Friday 5/12**
- Fiber Maintenance – **Pending approval GOMB**

Backbone and related projects

- New Backbone QoS template to allow for easier application and to bring Agencies and education customers in to a more homogenous environment.
- New Solarwinds Initiative enterprise wide single platform.
- IPv6 project: supporting IPv4 only and IPv6 only customers.
- IDOT/CTA Eisenhower Construction complete, CTA Path proofed, DOT splicing to be reworked.

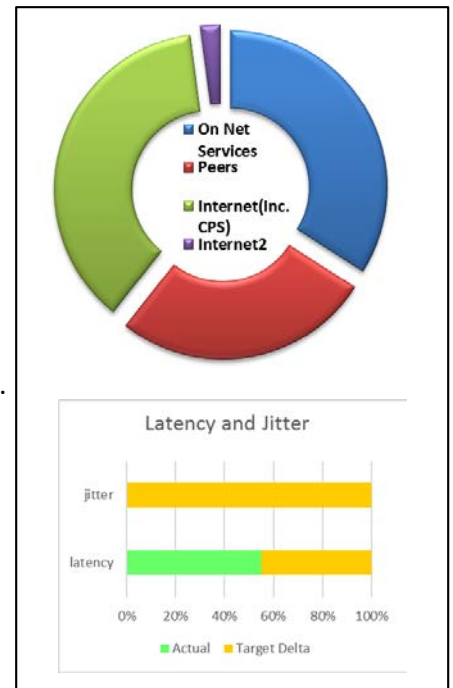
Other

- WannaCry

Services

New Services Still Pending

- Cloud Service up (Office 365 – Azure access for customers/agencies)
- New Services (Draft)
 - DDoS Service
 - Private WAN Monitoring
 - Firewall Service
 - Vulnerability Scanning
 - ICN/DoIT Cloud Exchange



**ILLINOIS CENTURY NETWORK
ADVANCED ENGINEERING TASK FORCE MEMBERSHIP**

Submitted for: Action

Summary: This item seeks approval for a new member for the Advanced Engineering Task Force.

Action Requested: That the AET approves the new member for the board.

Recommended Motion: *That the AET appoints David Antonacci as a new member with a term to expire in June 2020.*

**ILLINOIS CENTURY NETWORK
ADVANCED ENGINEERING TASK FORCE MEMBERSHIP**

The Advanced Engineering Task Force (AET) serves a critical role in shaping the services, rates and policies for the Illinois Century Network. Membership consists of technical staff representing the diverse community anchor institution categories connected to the network. AET members are appointed by the Policy Committee and serve staggered three year terms which begin on July 1st.

The AET is seeking approval on the appointment of the following member:

1. David Antonacci, Associate Director for Information Management, Illinois Board of Higher Education.
2. Jim Edwards, Director of IT, City of Decatur, IL

The staff recommend adoption of the following resolution:

That the AET appoint David Antonacci and Jim Edwards as new members with a term to expire in June 2020.

**ILLINOIS CENTURY NETWORK
ROUND-TABLE DISCUSSION**

New Meeting Schedule Lunches, Locations, Quarterly Showcase Presentations