Applications Services, KLISS Update prepared by Alan Weis, Director of Application Services

AS--1. Chamber Automation System:

   A. Summer Chamber Maintenance:
   The Summer Chamber Maintenance cycle was started in August 2016 and completed in October 2016.   Enhancements and issues included in the cycle were completed for the Chamber Interface, the Legislative Interface, and the Calendar and Journal systems. The enhancements and issues were documented in 24 issue tickets and those tickets have been resolved and deployed to production.

   B. Fall Chamber Maintenance:
   The Fall Chamber Maintenance cycle was started in November 2016 and is scheduled to complete in December 2016.   Enhancements and issues are included in the cycle are for the Chamber Interface, the Legislative Interface, and the Calendar and Journal systems. The enhancements and issues are documented in 16 issue tickets and those tickets will be deployed to production upon completion of the maintenance cycle.

AS--2. Law Making System:

   A. **Delta Re-Write Project** (KLISS Law Making In-Context Amendment Drafting System)

      1. Background:

         a. KLISS Law Making Delta Documents are line numbered bill documents that contain proposed changes to a bill. The changes are marked in the context of the bill document with a blue color representing new text and a red color representing deleted text. The delta documents contain hidden bookmarks that indicate page and line numbers of the bill. The Delta System has many automated functions that make amending a legislative bill easier for legislative staff. These features include importing of sections from multiple sources, automatically updating the bill title and repealer sections with the proper language for section additions and section removal, automatically renumbering sections, and automatically redesignating subsections within a bill section.

         b. The Amendatory Report system is used to automatically convert the in-context delta documents to amendatory report documents which are committee reports, floor amendments, and conference committee reports. The Amendatory Report system depends on the hidden page and line number bookmarks in the delta documents to correctly generate the page and line number language of the amendatory reports.

         c. Since KLISS was implemented there have been issues with the Delta System not properly updating bill titles and repealer sections and causing page and line number bookmarks to be removed. These issues cause the Amendatory Report system to create inaccurate committee reports, floor amendments, and conference committee reports. The legislative staff (ROS) are then required to manually edit the amendatory report documents to make them accurate. This can cause delays in the ROS staff's business process to deliver documents to the House and Senate Chambers in a timely fashion during legislative sessions and is particularly problematic during those high stress, high volume floor debate situation where numerous floor amendments are introduced in a short period of time.

2. Project Status:

The priority for the Law Making system this interim has been to rewrite the Delta Document System (the In-Context Amendment Drafting System known as the Delta Re-Write project). Coding on the system was started in late June 2016 and the rewrite coding phase was completed in late September 2016. System function testing was started in September 2016 and has continued to December 2016. Iterative waves of testing have surfaced numerous issues resulting in corresponding code updates and further testing. The goal is to complete final acceptance testing in December 2016 and implement a build into production for the 2017 session.

B. Other Law Making System Updates

Updates to the Law Making System have been completed that include the bill netting process, importing sections with tables, and drafting constitutional resolutions. These updates were completed by Propylon, Inc. and will be part of the final production build release for the 2017 session.

AS--3. Decision Support System (KLRD):

A. Budget Analysis System

Several updates for the Budget Analysis system were completed this interim including paging issues, large file handling, volume and section handling, and PDF rendering issues. The updated system was deployed in a new client build on October 14, 2016.

B. Miscellaneous Updates

1. Several document templates were updated and new templates added during the 2016 interim.

2. The Proofing console application was updated to allow more documents and users to be displayed for updating.

AS--4. Committee System:

A. Updates to the Committee System were completed during the interim and are in the final phase of testing. These updates will be implemented on December 19, 2016. The updates include:

- new text editor for entering minutes
- ability to add past committee members to minutes
- bulk testimony uploads

AS--5. Legislative Interface:

A. The function to view Committee Testimony and Minutes from the bill pages has been added to the system. This function will be available during the 2017 legislative session.

B. A new Hearings Page has been developed that will list all committee hearings for a day. The user is able to select a specific day to view and hearing data will be presented in a sortable table. The hearing data is linked to the committee and bill pages. A printable listing of the information can be displayed and printed. This page was available late during the 2016 session and will be available during the 2017 legislative session.

AS--6. Search System interface with KLISS:

Lexmark Search System has been updated during the 2016 interim. The KLISS integration is currently being configured and will be tested prior to the 2017 session.

AS--7. 2016 Special Session

The KLISS systems for the 2016 Special Session were implemented in June 2016 in a two week period prior to the start of the session on June 23, 2016. The systems included a Chamber system, a Law Making system, a Decision Support system, and a Legislative Interface. Legislative data for the past three legislative bienniums and special sessions continued to be available through the integrated web site.

AS--8. KLISS Biennium Rollover

A. The work to prepare the 2017-18 KLISS systems was started in June 2016. The systems included upgraded virtual servers and upgraded Propylon LRMS core software. Some application updates were required to work with the new core system. All KLISS Applications were tested on the new platforms during the July 2016 to August 2016 time period. Data integrity routines were ran on the 2015-16 data sets prior to copying required data to the new 2017-18 systems to ensure there were no data issues. The 2017-18 KLISS system implementations are being completed allow legislative staff to start entering data for the 2017 session.

B. KLISS 2017-18 system implementations:

   1. The 2017-18 Decision Support system was implemented on Monday, October 17, 2016.

   2. The 2017-18 Chamber Automation system, Global Universal Asset Management system and Appointments System were implemented on Wednesday, November 9, 2016.

   3. The 2017-18 Law Making system was implemented on Friday, December 2, 2016.

   4. The 2017-18 Committee system will be implemented on Monday, December 19, 2016.

   5. The 2017-18 Legislative Interface will be implemented on Tuesday, January 3, 2017. This implementation will make the new 2017 legislative membership information available on the web site.

Technical Services Update prepared by Terri Clark, Director of Technical Services

TS--1. Streaming Audio of Committee Hearings:

A. The Omnibus Appropriation Act of 2016 included a proviso for an INK grant to fund the streaming audio of legislative committee hearings. The INK Board has approved the grant, and the live streaming service will implemented in three phases during the 2017 Legislative Session.

B. The first phase is for live streaming services in 3 committee rooms: 112-N, 582-N, and 548-S. The Old Supreme Courtroom, 346-S, has live video and audio streaming capability from the previous pilot project. The equipment for the first 3 rooms is being installed and tested. It is scheduled to go live on Dec. 13th. Addition of the "kill switch" gating functionality is due by Dec. 31st. Training for Committee Assistants on the streaming audio will be included in their regular I/T training later in December.

C. Timeline:

- **01 Jun 2016** Letter to INK Board requesting grant for Audio Streaming Project
Grant of $199,000 for the purpose of outfitting 13 Committee Rooms with audio streaming capabilities and operating related audio streaming environment for 3 years.

- **02 Sep 2016** INK Grant Committee meeting to review grant requests

- **20 Sep 2016** Approval of the Legislature's grant request by the INK Board
Initial approval for Phase 1 in the amount of $50,000 including implementation of audio streaming in 3 Committee Rooms and operation of audio streaming for first year. Grants for Phases 2 and 3 are contingent upon successful Phase 1

- **26 Sep 2016** Plan prepared to implement audio streaming in 3 Committee Rooms
-- Audio cards and encoders ordered
-- Requirements for gating ("kill-switch") reviewed with vendor
-- Requirements for KLISS interface reviewed with vendor
-- Audio specialist scheduled for configuration work and implementation
-- Phase 1 Committee Rooms (and Committees/groups normally scheduled in these rooms)
-- 112-N: H-Appropriations, H-Education, and H-Judiciary
-- 548-S: Senate Republican Caucus, S-Commerce, S-Assessment & Taxation, S-Ways & Means, S-Utilities
-- 582-N H-Taxation, H-Energy and Environment, H-Utilities and Telecommunications, H-Transportation

2. Go-Live Target Dates
- **~ 19 Dec 2016** Targeted Phase 1 Implementation Go-Live
- **~ 06 Feb 2017** Potential Target for Phase 2 Implementation Go-Live: Rooms 4 – 8
- **~ 13 Mar 2017** Potential Target for Phase 3 Implementation Go-Live: Rooms 9 – 13

TS--2. Legislator Laptop Update:

A. Current State and Rationale for Change: Prior laptops, the Dell XPS 13, issued to legislators were leased Dec. 1, 2012. This 36-month lease ended Dec. 1, 2015 and had been extended on a monthly basis. These laptops had reached their end-of-useful-life as indicated by a high rate of component failures, e.g., batteries, keyboards, and power supplies.

B. Recommendation: In July the LCC approved a contract with Dell to lease Dell Latitude E5470 laptops as replacements for the current laptops.

C. Contract Info:

1. Structure: Utilize the Legislature's existing Master Lease Agreement with Dell to lease a total of 185 Dell Latitude E5470 laptops.

2. Term: 4 year lease

3. Annual cost will be $70,781 ($5,898.43 monthly). Total lease cost is $283,125.

4. Prior annual cost of XPS lease for 185 devices was $74,954.

D. Background: The RFP identified 40 technical requirements, and additional business requirements such as on-site, next day service, secure hard drive disposal, pricing, etc.

1. Three vendors responded to the RFP:

   a. Dell proposed the XPS 13 and the Latitude E5470 laptop

   b. Software House International (SHI) proposed the Lenovo ThinkPad Tablet

   c. Riverside Technologies, Inc. (RTI) proposed the HP ProBook 440G3 Notebook PC

2. Demo units of the Dell XPS 13 and Latitude and HP ProBook were evaluated by KLOIS team with the Latitude scoring higher than the other devices by a significant margin.

E. Distribution of the laptops began Nov. 28th. Legislators are encouraged to schedule a time to pick up their laptop, and should expect the process to take 45 minutes. Changes in the way Office 365 must be registered to the user, instead of directly installed on the computer, adds a significant length of time to the process. The E5470 laptops have touchscreen capability to align with functionality in Windows 10 and Office 365 (the touchscreen feature can be turned off). Focused training on the use of Windows 10 is available.

TS--3. Backup Data Center and Legislative ELI Website Hosting Moves to LightEdge

Summary Status Update

1. The first phase of the move to LightEdge's hosted data center will be implementing the webservers for the Legislature's public website - the KLISS ELI. The LightEdge environment provided the capacity to build the servers for the 2017-2018 Biennium. The new environment is currently in testing and scheduled to go live on Friday, December 16th.

2. The second phase is moving the disaster recovery environment to LightEdge. This will be scheduled for later in December, following the website implementation.

Detailed Review

A. **Current State:** The Legislature's external website (the External Legislative Interface or ELI) and back-up data center capabilities are currently hosted by the Executive Branch's I/T group (OITS).

B. **Background:**

1. In 2010, KLOIS contracted with OITS (DISC at the time) for space in the Wichita Offsite Data Center for disaster recovery equipment. OITS provided the physical building, power, and data connections for two racks of server equipment.

2. Later that year KLOIS asked OITS to host the Legislature's public website (ELI) from their data center. The OITS data center already hosted public websites and had bandwidth and network security in place. The Information Network of Kansas (INK) gave OITS a grant to fund their initial virtual server environment, with the ELI website being the first application hosted in the virtual environment.

3. Since that time, OITS has moved out of the Wichita Offsite Data Center. Most state agencies moved to a commercial data center at that time. KLOIS moved the two racks of disaster recovery server equipment to another state data center in Topeka, but this data center is at full capacity. The requirements of the hosted KLISS public website and the disaster recovery equipment have reached the limit of OITS' available capacity. Expanding the ELI website to handle the next biennium data and network traffic will exceed OITS' available capacity. In addition to the capacity issue additional rationale is provided below.

C. **Rationale for Change:**

1. Current level of service from OITS makes it very difficult and time consuming to troubleshoot/resolve problems and implement changes to the ELI.

2. OITS has no ability to increase telecomm bandwidth used by the ELI – an external vendor is able to turn bandwidth up and down based upon our activity level.

3. OITS has no ability to dynamically increase processing capacity used by the ELI – an external vendor is able to turn capacity up and down based upon our activity level.

4. OITS has no ability to shift hosting to a back-up site in the event of problems with its primary site – service from a quality external, third party vendor includes the ability to shift hosting to back up sites in the event of problems with the primary site.

5. Complete lack of confidence in the stability of the rates currently being charged for hosting services due to our recent experience with OITS re rates for data services.

D. **Recommendation and Contract Info:** In July the LCC approved a contract with LightEdge Solutions to provide the Legislature with hosting services for the ELI and back-up DC services.

1. Structure: Terms and conditions lay out specific performance and service level criteria

2. Term: 3 year contract
3. Annual cost will be in the range of $56,520 to $60,000 for ELI hosting and $34,000 for data center back-up services.
4. Current annualized costs from OITS are about $61,200 and $35,000 respectively.

E. **Vendor Evaluation:**

1. The KLOIS team evaluated four commercial data center providers located in the Midwest: LightEdge, ISG, Nex-Tech, and Alexander Open Systems (AOS.

2. Vendors were evaluated and scored on nine critical factors re hosting, listed in priority order, as follows:

    1. Response time to tickets
    2. After hours support
    3. SLA
    4. Capacity increase/decrease
    5. Access to hosted environment
    6. Redundancy - power, internet, etc.
    7. Failover to another DC
    8. Pricing
    9. Business model, growth prospects, long-term plan

3. Based upon the Evaluation Team's assessment, LightEdge, the recommended vendor, scored significantly higher overall when compared to the other vendors.

4. LightEdge has multiple data centers located in the Midwest. LightEdge's Kansas City data center, located in the Hunt Midwest SubTropolis Technology Center, will be the data center hosting the Legislature's public website (ELI) and the disaster recovery server equipment.

5. One of the key factors in this recommendation is the ability of LightEdge to immediately increase network bandwidth and computing resources as necessary, giving KLOIS staff the ability to manage the bursts of traffic the ELI receives during the Legislative Session. LightEdge has the processes, capability, and capacity to provide this service automatically and seamlessly.

6. The LightEdge data center staff respond to Service Requests within an hour. The data center is staffed 24 x 7, so legislative staff have access to hardware and the opportunity to perform regular maintenance outside of business hours. In the event of an emergency, data center staff are available to assist if necessary.

7. LightEdge provides granular monitoring and reporting capabilities. Granular, detailed reports on the ELI network usage will help us better identify and manage automated bots hitting the website, identify hacking attempts, and manage the ELI resources more effectively.

8. In the event of a disaster, LightEdge has been prioritized at Preservation of Life levels for receiving power and generator fuel due to LightEdge hosting medical data for hospitals.

9. LightEdge has the highest security levels of the identified data center vendors. Their data centers have been audited and certified for the following standards:
   - ISO 20000 Certified
   - Currently in ISO 21000 audit (data hosting standards)
   - SSAI SOC 1 and SSAE SOC 2 Certified
   - ITIL Certified

TS--4. Data Encryption to Protect Legislative Data

A. In a continuing effort to improve cybersecurity, KLOIS Tech Services is conducting an initial pilot program of Dell Data Protection software. This software is intended to provide legislators with the capability to encrypt and protect their legislative data. Dell Data Protection encrypts the actual data and not just the physical hard drive in the computer. This allows data protections to stay in place even if data is copied to a USB flash drive or personal computer.

B. The purpose of the initial pilot program is to fully document how this data protection capability operates and how it could benefit the legislature and to determine an implementation method and the necessary training programs that will introduce the least disruption to legislators. Assuming the pilot has a positive result, the high level schedule is to roll out data protection encryption to all legislators in the March-April timeframe.   It would then be available to full time staff when the staff computers are refreshed in 2017.

TS--5. Senate Chamber Microphone Replacement

The Senate audio system and microphones were installed during the Senate Chamber renovation. During the past several Sessions increasing numbers of microphones have broken beyond repair and the inventory of "hot swap" replacements dwindled to risky levels. As a result, a decision was made to replace the microphones in the Senate Chamber. The implementation of the new microphones is schedule to take place on December 13th. In addition to being a bit more rugged, the new microphones also have a larger on/off switch, making them easier to use.

TS--6. Capability to Stream Video From House Chamber for State of the State Address

During the past two years the Governor's Office has requested various levels of KLOIS assistance with the set up required to broadcast the State of the State Address using the audio and video equipment in the House Chamber and Control Room. To insure that this process works effectively this year we have worked with various groups to implement a workable approach. Participants in this process include: OITS will provide technical services, the Kansas Highway Patrol will provide a broadcast quality camera, and the Information Network of Kansas is assisting with funding. At this time, the Governor's Office is planning to live stream the State of the State Address via YouTube. Initial testing of the equipment was successful and another round of testing will be completed prior to the event to insure end-to-end operability.

TS--7. Data Network Migration

A. **Current State:** The Legislature's data communications services are currently provided by the Executive Branch's I/T group (OITS) utilizing their staff and a combination of equipment housed within the Capitol building, equipment housed in its Topeka data center, and wide-area network services provided by several telecommunications vendors.

B. **Background:**

1. During the 11oct2016 meeting the LCC provided approval for the Legislature's CITO to conduct a limited Phase 1 assessment for the overall project to migrate the Legislature's data networking function away from OITS to either an insourced or outsourced model.

2. Based upon the preliminary results of the limited Phase 1 Assessment we have concluded that workable solutions exist for the two critical technical hurdles required to migrate the network, the project and one-time cost guesstimates we made earlier in the project are within the desired range, and the timelines associated with the project are within the expected parameters (assuming we proceed without any interruptions or gaps in the timeline).

C. **Recommendation:**

1. Request the LCC provide approval for the Legislature's CITO to continue on with the next step in this project and conduct an Initial Design and Planning Effort (Phase 2.1). Cost for this phase is targeted not to exceed $80,000.

2. The primary objectives of this Phase 2.1 effort are to: validate the specific hardware and software features to be included in the recommended implementation, drill down on the recommended security and control features to validate cost, value, and relevance, assess detailed staffing and outsourced service capabilities, further clarify costs for Phase 2.2 – Detailed Design and Phase 3 - Implementation, and further refine the estimated one-time costs and ongoing costs including hardware, software feature licensing, staffing/sourcing and networking/internet services.

D. **Rationale:**

1. Primary driver for migrating the network continues to be to increasing costs associate with services provided by OITS. Over the past 24 months OITS has implemented rate increases and driven changes in charging methodologies.

2. With these increases/changes we believe OITS data charges are not cost effective and present an extremely poor value. Annual impact of cost increases of rate increases, changes in charging methodology, and expiration of credit agreements:

   a. $ 340,000 and $20,300: accepted rate increases (wired and wireless services)

   b. $ 703,000: change in charging methodology not yet accepted by the Legislature

   c. $375,000: termination of a credit structure negotiated as part of the Capitol Restoration

3. **Payback Period:** Based upon current assessment of one-time project costs and ongoing costs, the Network Migration Project's payback period ranges from **1.4 years** to **3.1 years** depending upon two OITS cost elimination scenarios (see Project Cost Overview).

E. **Preferred Vendor:** Black & Veatch. Strongly recommend maintaining the continuity of engineers assigned to the project given the high level of professionalism, depth of expertise, breadth of experience, "do what it takes to get the job done" attitude, and vendor-agnostic approach they exhibited during the Assessment effort.