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Application Services Update
Prepared by Alan Weis, Director of Application Services

AS-1 2018 Session and Biennium Completion:

The KLISS system performed well during the 2018 Legislative Session, no major issues were encountered. Bills, Resolutions, Committee Reports, Amendments, and Conference Committee Reports were drafted, processed, and published as required within the system by Legislative staff. Chamber Calendar and Journals and Committee Agenda and Minutes with Testimony were created and published in KLISS with no major issues. The new Senate Vote System performed well with only one significant issue (noted in AS-5). The Legislative Interface (web site) performed well except for a slowness issue experienced on the external site in early March (noted in AS-9), the slowness did not affect the internal site used by members and staff. After session ended the bills that became law were processed through the KLISS statute update and publication system. The update and publication of the statutes has been completed.

Below are the numbers of published bills, resolutions, and statutes processed by the KLISS system during the 2017-18 biennium:

Total bills introduced:	1261
Total pages of introduced bills:	10936
Total bills that became law:	223
Total bill sections creating new, amending, or repealing statutes:	1854
Total resolutions introduced:	203

AS-2 2019-20 Biennium System Implementation:

The most significant project this interim is the implementation of the 2019-20 biennium KLISS system in preparation for the 2019 Legislative Session. Included in this project is updating the KLISS core server systems to Propylon's new updated LRMS Core 6 system. The new Core system offers improved performance and security, enhanced document and metadata handling, and is easier to maintain.

The KLOIS application developers and system administrators attended Propylon's LRMS Core 6 training during the April break of the 2018 Legislative Session over a period of three days. Our staff learned about the updated datastore, programming interfaces, developer tools, system administration tools, and enhanced document and metadata handling,

Work started on the 2019-20 biennium systems in May 2018. Tasks included creating new virtual servers with updated operating systems, installing the LRMS core systems, installing the KLISS custom applications and configuring the systems for proper operation. Required KLISS applications code updates and metadata fields updates were completed. Also, modifications to the PDF services were required. An extensive test period was conducted across all applications to ensure the Law Making, Decision Support, Chamber Automation, and Global systems worked

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properly. This testing period started in June and lasted until September. Issues identified during testing were resolved and the systems were retested as needed. After successful testing of the systems, the Production systems were then created in September and October. The Decision Support system was implemented in production on 10/1/2018. The Law Making system was implemented on 11/5/2018. The Chamber and Global systems were implemented on 11/7/2018. The Committee System will be implemented on 12/28/2018. The Legislative Interface (web site) will be implemented on 1/4/2019.

AS-3 KLISS Law Making System (Office of the Revisor):

The Revisor Office staff completed testing on updates to the Bill Drafting and Amendment Drafting Systems including appropriations bills, statute reviving clauses, carry over years, section imports and several other miscellaneous updates. The updates were coded during the 2017 interim but time ran short for testing prior to the 2018 session. The updates were implemented into production on 8/17/2018.

During the 2018 Interim additional miscellaneous issue resolutions and system enhancements have been coded for the Law Making Bill Drafting and Amendment Drafting systems. Testing on the updates began on November 1, 2018 and the updates are currently in acceptance testing. If accepted the updates will be implemented into production for the 2019 Legislative Session.

AS-4 Chamber Automation System (House and Senate):

During the 2018 Session the House Leadership requested on 1/19/2018 to have additional information listed on the web site bill pages. The information listed is the house member the bill is requested by and who's behalf it was requested. After meeting with the House Leadership and staff to discuss the requirements, a user application was created for Revisor staff to input the information after bills were introduced in the House Chamber. The programming and testing of the application was completed in a few days. The application was implemented on Monday, 1/29/2018.

During the 2018 Interim several Chamber system miscellaneous issues have been resolved and implemented. A few remaining issues have passed testing and will be implemented in December.

The past several years the State Printing Plant has been formatting and printing enrolled bills for both the House and Senate chambers. In November 2018 the Printing Plant informed the Senate Chamber staff that the Printing Plant no longer has editing software to format the enrolled bills. The Application Services staff have met with Corey Carnahan and Susan Kannarr on updating KLISS to properly format enrolled bills. This work is continuing and the system will be updated for the 2019 session.

AS-5 New Senate Chamber Vote System:

A new Senate Vote System developed by the KLOIS Application Services staff was implemented for the 2018 session. The new vote system is a server and thin client (browser) based system, the server is contained in the Statehouse secure data center. The system is integrated with the KLISS

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Chamber and Legislative Interface systems. Senate staff access the system using a web browser from the Senate workstations with secure user credentials. The system allows real-time vote information displays in the Senate Chambers. The initial implementation included a clerk display, a Senate chair display, a display in the Chamber leadership offices hallway, and a display in the Senate Majority Leader's office.

The system performed well during the 2018 session. KLIOS Applications Services staff members were stationed in the Senate Chamber during daily sessions in case any issues were encountered and to help Senate staff when needed. There was one significant issue encountered during the session with slowness of opening a vote due to queries to gather member information. The issue was addressed this interim with an update to gather the all member information on vote setup and eliminate data queries during vote opening. Also implemented this interim was automated member vote record reports that are published to the Legislative Interface by simple interface functions executed by the Secretary of the Senate. The KLOIS staff will also to implement a prior session vote report storage system this interim.

AS-6 Senate Chamber General Orders ordering for Leadership Staff:

The Senate General Orders user interface created for the 2018 session worked well for the Senate Leadership staff. This interface is an integrated part of the KLISS Senate Chamber system. Leadership staff used the system to update the general orders list on a computer for the chamber each day as required by the Leadership. The updated list was then automatically included in the daily Calendars generated by the senate staff.

AS-7 Decision Support System (KLRD):

This interim the Fiscal Impact Reports system was updated by the KLOIS developers with a new user interface for KLRD staff to generate reports. The new interface allows staff more options to control the data listed in the reports such as filters and accumulated totals. The report outputs were also updated. The system was implemented into production on 8/31/2018

Also, this interim the Appropriations Report system has been updated. The system is currently being tested by KLRD staff. When accepted by KLRD, the updated system will be implemented into production with a new KLISS DS client build.

AS-8 Committee System:

Miscellaneous issues in the Committee System are being address this interim including resolving issues with the compiled Committee agendas for the Chamber Calendars and automatic creation of bill and appointment hearing events. Propylon is working on this system. Several issue resolutions have been delivered and tested. We are awaiting 7 additional updates. When received those will be tested and implemented into the production system.

AS-9 Legislative Interface (web site):

The Legislative Interface (web site) performed well during the 2018 session except for a slowness issue experienced in March on the external site caused by web crawlers (search site indexers). After analysis of the issue by KLOIS staff and Propylon staff, Propylon delivered a report listing

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steps to take to tune the external site datastore and web server to handle the traffic. KLOIS staff also placed restrictions on the crawlers' ability to access the web site. After the steps were completed the external web site was back to normal service.

The internal web site used by legislative members and staff was not affected by the external site slowness issue and legislative business continued uninterrupted. The Statehouse network DNS system automatically routes members and staff to the internal site when their computers are connected behind the Statehouse firewall. Even though the two sites present the same information, this event illustrates the need for the separate internal and external systems.

This interim miscellaneous issue resolutions for the Legislative Interface have been completed and implemented.

AS-10 Search System:

This interim Propylon has developed a search system for the Decision Support system to be used by KLRD staff. The system has been under test by KLRD staff since October 2018 and the testing is continuing. When the system is acceptable to KLRD management, the system will be implemented into Production.

AS-11 Appointments System:

This interim Propylon has updated several reports in the Appointments System. After testing and acceptance by KLRD the report updates were implemented into production on 9/13/2018.

Propylon and KLOIS developers are currently working to complete an update to the system that will send the Appointment confirmation information from the Chamber system to the Appointments system for retrieval and reporting. Also, in testing is an update to allow supporting documents to be saved on Entities and Contacts. These updates will be implemented for the 2019 session.

AS-12 Global System:

The Global System contains system-wide defined assets for the KLISS system such as members, committees, staff, sessions, agencies, etc. The Universal Asset Manager (UAM) is the user interface to create, modify, and delete the information contained in the Global System. This interim several enhancements and issue updates to the UAM system were developed and tested. The updates were implemented on 8/2/2018.

AS-13 Conference Committee Meeting Notification Process:

The KLOIS Application Services Director brought legislative division staff together during the interim to discuss ways to improve the Conference Committee meeting notice process. Several meetings were held to discuss potential process improvements and ways to enhance the KLISS system to improve meeting notifications and access to Conference Committee information.

Improvements planned for the 2019 session:

- An enhancement was developed for the Legislative Interface bill pages to display a table listing Conference Committee Reports with date of release. This listing is separate from

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the bill history table and will make it easier for users to find and view the reports.

- A new KLISS user interface is under development to allow Office of the Revisor staff to enter, modify, and cancel Conference Committee meeting information. This will allow the KLISS system to display the meeting date, time, and room information dynamically when it is entered and updated.
- The Legislative Interface will be enhanced to dynamically display the Conference Committee meeting information on the Conference Committee page. Also, a new RSS feed will be implemented to push out the Conference Committee meeting information to subscribers.
- A procedure is being drafted for Committee Chairs and Committee Assistants to follow to ensure proper notification of meetings are provided. The Chairs and Assistants will be offered training on the process.

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 approved the grant, and the live streaming service was fully implemented during the 2017 Interim.
- B. All committee rooms now have live audio streaming capability. The Committee Assistants manage the live streams through a software interface. The software features include advance scheduling of live streams, links to the meeting agenda, ability to extend the live stream, and “kill switch” capability to immediately stop the live stream. The system is supported by two part-time session employees who verify the live streams and monitor the system for problems during the business day.

TS-2 Security Assessment:

- A. The Legislature conducts 3rd party security assessments every 24 – 36 months. The most recent was conducted by Optiv in April 2018. The assessment included penetration testing of the wired and wireless networks, vulnerability testing of the Windows, Linux, and VMWare server environments, MS SQL server vulnerability testing, vulnerability testing of the desktop and laptop computers, and social engineering tests. Security controls implemented over the past several years have improved the overall security of the Legislature, and the risk level of the assessment was Average. During the interim the Technical Services team has been addressing the highest risk level vulnerabilities first. We are also developing an online cybersecurity training program for end users to reduce the risks identified during the social engineering assessment.

TS-3 Server and Storage Area Network Upgrade:

- A. The Legislature maintains a data center in the Capitol and an off-site data center at LightEdge in Kansas City. The current environment consists of Cisco UCS servers hosting the VMWare virtual environment, EMC storage, and EMC Avamar Grid Backup System. This equipment is between 5 – 9 years old and nearing full capacity. The LCC approved a project to upgrade the current environment. RFPs were issued in October 2017 for both the Data Protection backup systems and the Compute and Storage systems.
- B. The Data Protection RFP received 3 responses:
 - a. Alexander Open Systems (AOS) responded with Dell/EMC Avamar Grid Backup System and Data Domain software
 - b. World Wide Technologies (WWT) responded with Rubrik system
 - c. RTI responded with Veeam software

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The RFP was awarded to World Wide Technologies and their proposal for a Rubrik system. Rubrik was selected for its ability to back up both virtual and physical servers, improved management of Exchange email backup/restore, and an innovative approach to data access resulting in extremely fast data recovery. The system administration, monitoring, and reporting are comprehensive and easy to use, minimizing administrator training.

- C. The RFP for Data Center Compute and Storage received five vendor responses:
- Alexander Open Systems (AOS) responded with Dell/EMC hyperconverged system
 - Eagle Technologies responded with Datrium hyperconverged system
 - World Wide Technologies (WWT) responded with Cisco Hyperflex hyperconverged system
 - Sirius responded with Nutanix hyperconverged and cloud system
 - RTI responded with Hewlett Packard servers and Nimble storage

The RFP was awarded World Wide Technology and their proposal for a Cisco Hyperflex system. Cisco Hyperflex was selected for its ability to balance the storage and compute requirements of the legislative environment within a hyperconverged architecture. The system utilizes flash storage for fast performance, data replication to the secondary data center is native eliminating a bottleneck, and encryption is native to the drives and SSH communications across the system. System administration uses tools familiar to staff, minimizing administrator training.

The KLOIS team begins implementing the Rubrik system this week, followed by the Cisco Hyperflex system.

TS-4 House Voting Management System:

- A. The House voting management system software was upgraded to the IRC xmLegislator Voting software. The system design included virtualizing the application server and back-end hardware to reduce costs. In the Chamber, the House Clerk's staff will use All-In-One computers. IRC was onsite to complete customizations to the system, load historical data into the new system, and train staff. This software includes improvements to the Speaker Script software and the Vote Management software. It utilizes MS SQL database, and is integrated with the KLISS system.