

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
ANNUAL REPORT ON GOALS, OBJECTIVES AND POLICIES
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Information Processing and Communication Services
(Information and Communication Services Division)

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I. Goals

The Information and Communication Services Division (ICSD), under the oversight of the Chief Information Officer (CIO) of the State of Hawai'i, will provide efficient, effective and available information technology (IT) enterprise services and support in the areas of data center, cyber security, computing (mainframe and open systems), telecommunications, application development, and web-based services for the purpose of assisting State government agencies in fulfilling their current and future business mission and objectives. ICSD will support and implement the principles, policies, governance, and technologies in accordance with the CIO's strategic plan to improve the delivery of government services and increase transparency in State government operations.

II. Objectives and Policies

- A. Deliver accurate and available IT services to enable State agencies to meet their business objectives.
- B. Develop and scale IT service offerings to meet increased State agencies demand for computing, storage, and network connectivity.
- C. Secure and protect the IT assets and resources in the State's Data Center, and the State's electronic data transmitted through the State's data networks.
- D. Reduce costs by identifying, implementing and sustaining programs to optimize the use of hardware, software and contractors through enterprise agreements, governance and rationalization.

III. Action Plan with Timetable (ICSD)

- A. Deliver Accurate and Available IT Services that allow State Agencies to Meet their Business Objectives

- 1. Past Year Accomplishments

- a. Generated 86,492 W-2 Wage and Tax Statement forms for calendar year 2014 for employees of the State branches of government consisting of Executive Branch departments, the Department of Education, Hawai'i State Public Library System, Office of Hawaiian Affairs, Hawai'i Health Systems Corporation, the Judiciary Branch, the Legislative Branch and the University of Hawai'i.
- b. Implemented bargaining unit contract pay increases and retro-active payments for the Executive Branch, Judiciary, Hawai'i Health Systems Corporation, and the Department of Education employees.
- c. Completed the testing and implementation of the Judiciary's Electronic Payroll Change Schedule (EPCS) interface. This EPCS file contains the gross payments for the Judiciary employees and went from a manual paper processing to an electronic paperless processing. Judiciary also requested to go paperless with their Payroll Register report by having it converted to PDF.
- d. Implemented the Department of Defense electronic expenditure interface file, which contains of the data elements from the Employers Share Contribution Assessment Register report (report number PRE314) and an electronic Workers Compensation file to assist their Fiscal staff with the balancing and monitoring of their employer share assessments.
- e. Implementing an automated process to refund EUTF Health Benefit premiums for terminated employees. This process should drastically reduce work for the departmental Payroll and/or Fiscal staff from manually having to generate D-70 adjustments for these employees and reduce work for our Data Entry staff from having to key punch these source documents. This is another process going paperless.
- f. Implementing the tasks associated with the Affordable Care Act (ACA) federal mandate. This federal mandate requires that all employers must supply their employees with the ACA Form 1095-C statements and file an electronic file of this information with the IRS.
- g. Provided computer programming services to the Accounting Division of the Department of Accounting and General Services (DAGS) to change ID numbers to address confidentiality concerns.
- h. Provided computer programming services for data validation and change management software for the Unemployment Insurance Division of the Department of Labor and Industrial Affairs (DLIR).

- i. Provided computer programming services for the Budget Planning Program Management Division of the Department of Budget and Finance that implemented enhancements to the electronic Budget (eBUDDI) web-based application to fulfill ACT 160, SLH 2015 requirements, and to reduce paper consumption by providing the option to generate budget reports in PDF (portable document format) on the FTP (File Transfer Protocol) server.
 - j. Provided computer programming services for the Professional and Vocational Licensing Division of the Department of Commerce and Consumer Affairs that implemented enhancements to accept and process renewal transactions through a web-based application developed by the State's internet portal vendor that accepts "late" renewal transactions, reduces the number of hardcopy renewals reviewed by staff, and speeds up processing these transactions.
 - k. Provided computer programming services to the Department of Human Resources Development's Human Resource Management System (HRMS) to assist in the implementation of the PeopleSoft upgrade from version 8.3 to 9.2; implement the Broadband Initiative for the IT class of employees in the Executive Branch; implement bargaining unit pay increases for the Executive Branch; and to work on extracting data for the Affordable Care Act (ACA) printing and file transfer requirements.
 - l. Launched the Aloha+ Challenge Dashboard with measures for Clean Energy Transformation and Solid Waste Reduction. The dashboard is a collaboration between the State, Counties, and private organizations.
 - m. Developed an Open Data Guidebook.
 - n. Achieved Full Operating Capability (FOC) on the ANUENUE Interisland Digital Microwave Network, a shared infrastructure designed by the State of Hawai'i and U.S. Coast Guard to provide robust and survivable communications links and facilities throughout Hawai'i.
2. One Year
- a. Continue the N20 Change Management System to control migrations of computer programs into a production environment, verify and ensure proper changes and approval testing, assist in archiving and

recovery of programs, and maintain complete audit trails and compliance.

- b. Participate in the Unemployment Insurance Benefits web modernization and launch of mobile applications for the claimant framework and task list, claimants' initial and reactivation claims and filing of weekly claim certificates.
- c. Improve the Secure File Transfer Facility to improve reliability, security and efficiency through the upgrade of both hardware and software and taking advantage of improvements in networking technology.
- d. Work with the Aloha+ Challenge group to develop measures for Smart Sustainable Communities and Green Workforce and Education
- e. Release the Open Data Policy. The state is proceeding rapidly with significant enhancements to its Open Government capability. This builds on recent years' accomplishments, including the upgrading of all 18 department websites and the launch of the new, Best of the Web award winning State of Hawai'i portal with a service catalog of more than 100 online services and more than 60 mobile apps.
- f. Complete the construction of the Waiakea microwave radio site. Complete the Harbor's video system which utilizes various microwave systems to transport traffic to Pier 2 in Honolulu. Upgrade and maintain radio equipment, tower and antenna structures, and building facilities for the various microwave systems. Expand microwave radio coverage by identifying potential new sites and pursue agreements to utilize those sites.
- g. Start offering mainframe disaster recovery service to the Judiciary and the City and County of Honolulu. This will save the State of Hawai'i and taxpayers money and show intergovernment cooperation.

3. Two Years

- a. Install and implement N20 in the test region for the Unemployment Tax and Quarterly Wage systems. The next phase will include the Unemployment Insurance Benefits and Disability Compensation systems. All systems will follow a test and acceptance plan to promote a move to production.

- b. For the Unemployment Insurance Benefits web modernization and Mobile Applications project, review and implement the modernization framework, initial entry screen and task lists.
- c. Work with the Aloha+ Challenge group to develop measures for Smart Sustainable Communities and Hawai'i Green Growth (HGG) Green Workforce & Education (hawaii greengrowth.org). For year three, build application programming interfaces (API) around the state's open data and engage citizens. Finally for year four, enable data sharing between internal IT systems and between agencies to facilitate not only the dissemination of knowledge but all the design of innovative online services.
- d. Complete the construction of the Pahole microwave radio site. Upgrade and maintain radio equipment, tower and antenna structures, and building facilities for the various microwave radio systems. Expand microwave radio coverage by identifying potential new sites and pursue agreements to utilize those sites.
- e. Consolidate mainframes from all state jurisdictions into one that's housed and run by OIMT/ICSD. Chargebacks and Service Level Agreements (SLAs) will be implemented.

4. Five Years

- a. Finalize N20 system and operational documentation and monitor N20 and review audit reports in the production and test environments.
- b. For the Unemployment Insurance Benefits web modernization and Mobile Applications project, review and implement initial claims and claim certification.
- c. Transition the Statewide Shared Blended system (SSB) to Phase II of the Project 25 (P25) conversion, where P25 is a standard for the design and manufacture of interoperable digital two-way wireless communications products to fit the needs of public safety. Upgrade and maintain radio equipment, tower and antenna structures, and building facilities for the various microwave radio systems. Expand microwave radio coverage by identifying potential new sites and pursue agreements to utilize those sites.

B. Expand IT Service Offerings to Meet Increased State Agencies Demand on Computing, Storage, and Network Connectivity

1. Past Year Accomplishments

- a. Assisted OIMT in providing resources for planning, procuring, implementing, and maintaining OIMT-defined projects.
- b. Migrated more user agency connections to 1 Gigabit per second (Gbps) from 100 Megabits per second (Mbps).
- c. Buildout of colocation data and telecom centers are 95 percent complete providing sites with high availability for critical services.
- d. Wi-Fi deployment is continuing to common areas such as conference rooms in various buildings.
- e. Procurement of the replacement of leased mainframes continues. Significant issues dealing with RFP discussions were resolved and the RFP was released.
- f. Worked with departments to plan the move to Office 365. Completed the migration for OIMT/ICSD, Governor, Lt. Governor, and Office of Elections. January 1, 2016 is the new target date for completing the Executive Branch's move to Microsoft Office 365. The ambitious goal accelerates the project by nearly a year. The scope of the project includes the majority of Executive Branch departments (excluding the Department of Education and University of Hawai'i). Benefits include fortified security, greater disaster recovery capability, expanded applications and services, and long-term budget sustainability.
- g. The Government Private Cloud (GPC) continues to spin up virtual machines (VMs) for both Windows and Linux based servers. A plethora of virtual machines from nearly all departments running all kinds of applications are currently housed on the IBM FLEX systems.
- h. Mainframe Systems and associated I/O (*short for input/output; the term is used to describe any program, operation or device that transfers data to or from a computer and to or from a peripheral device*) for the Judiciary, DHS, and ICSD were procured and implemented. The old IBM Z9 mainframe, which had been withdrawn from the market by the vendor, was removed and a new ZBC12 was successfully procured and is now in the implementation phase and being used by various agencies.
- i. SNA to TCP/IP conversion project. More than 2,000 users have been converted. The completion date is December 31, 2015. On January

31, 2016, the 3745 Front End Processor is scheduled to be turned off. When that happens, the cross domain connections between the State, City and County of Honolulu, and the Judiciary will no longer exist.

- j. New monitoring capabilities in Production Services Branch (PSB) Operations Area. With three Data Centers, remote monitoring will be critical in determining the status of hosts. The monitoring tool that will be implemented is Solarwinds.

2. One Year

- a. Establish a secondary data center at the University of Hawai'i at Manoa Information Technology Center (ITC).
- b. Continue the deployment of network backup circuits and implement network topology changes to support greater network reliability to support critical services.
- c. Continue implementation of WiFi access to state network in State Buildings.
- d. Start increasing bandwidth capacity on the State's Institutional Network (INET) in incremental phases.
- e. Continue work on the replacement of leased mainframes.
- f. Assist departments with their migration to Office 365 (O365). Provide training and set up a Help Desk. Complete O365 migration for the Departments of Accounting and General Services; Human Resources Development; Health; Human Services; Land and Natural Resources; Agriculture; Transformation; Commerce and Consumer Affairs; Labor and Industrial Relations; Public Safety; Hawaiian Home Lands; Business, Economic Development, and Tourism; Budget and Finance; and Defense; and Attorney General.
- h. Develop the statewide intranet and proof of concept for developing applications in the SharePoint platform.
- i. Upgrade Z/OS (MVS) from version 1.13 to 2.1 for all logical partitions on the mainframe. The end of service date for 1.13 is September 2016.
- j. Merge the DHS tape system into the ICSD Mainframe virtual tape system for tape grid implementation at the UH site.

- k. Implement Z/VM on the mainframe to better support the creation of Linux VM's off of the Integrated Facility for Linux (IFL) engines. *(IBM z/VM is the premier mainframe virtualization platform, supporting more virtual servers than any other in a single footprint.)* This will allow the State to save on software licensing costs, particularly with Oracle. Oracle licensing on the IFL engines are tied to the number of engines on the mainframe and not by the number of Oracle databases (DB) running on it.

3. Two Years

- a. Continue the build of the GPC infrastructure to allow automated self-service server cloud provisioning.
- b. Continue expanding the deployment of backup circuits and implementing network topology changes to support greater network reliability.
- c. Maintain and upgrade the telecom and data centers infrastructure as necessary to maintain product support.
- d. Continue implementation of WiFi access in State buildings.
- e. Continue increasing bandwidth capacity and alternate and backup routes on the State's Institutional Network (INET) in additional phases.
- f. Migrate the Department of Taxation and OHA to Office 365.
- g. Staff development to support SharePoint application development for current technologies. They will also deliver and deploy applications to support business operations.
- h. Have Z/VM up and operational. Consolidate all Oracle relational database management system (RDBMS) to the IFL engines on the mainframe.
- i. Continue to move up critical systems backup environment to UH site.

4. Five Years

- a. The program will continue to refine objectives that were previously identified and follow-up on unfinished objectives and any new initiatives that may have been identified.
- C. Secure and Protect the IT Assets and Resources Residing in the State's Data Center, and the State's Electronic Data Transmitted through the State's Data Networks
1. Past Year Accomplishments
 - a. Established new cyber security infrastructure at the State's alternate data center by installing various security tools and appliances.
 - b. Ensured that systems and equipment maintenance continue to the extent that funding allowed. Replaced or upgraded systems and equipment that reach end-of-life or are no longer supported by manufacturer.
 - d. New Disaster Recovery and Business Continuity site identified and moving forward. The University of Hawai'i (UH) Information Technology Center (ITC) and the State of Hawai'i have reached an agreement, which allows the State of Hawai'i to place backup equipment in the new UH Data Center. We will be housing the disaster recovery mainframe at UH. It will be capable of bringing up environments for ICSD, DHS and the DOE. The enterprise UNIX systems and the GPC will also have disaster recovery capability there. In addition, DHS's KOLEA, the State Hub and the Department of Taxation's new tax system are slated to have backup systems at UH as well.
 - e. Established New Disaster Recovery and Business Continuity sites. These include DRFortress, UH ITC, and Kalanimoku.
 - f. Tivoli Storage Manager Enterprise Wide Backup and Restore. Re-architected to integrate disaster recovery capabilities. This will allow for quick turnarounds at the disaster recovery site and when we fallback to the production site.
 2. One Year
 - a. Continue to develop and expand Security Operations Center (SOC) services.

- b. Ensure that systems and equipment maintenance continue to the extent that funding allowed. Replaced or upgraded systems and equipment that reach end-of-life or are no longer supported by the manufacturer.
 - c. Upgraded and expanded web security appliances that provide protection against malicious websites.
 - d. Continue to install security devices at the UH ITC data center.
 - e. Continue to upgrade Mainframe software (middleware) to current versions/levels for the use of application such as Statewide Payroll and FAMIS. This is important because older versions are not supported.
 - f. Have the Disaster Recovery site up at the UH site tested and fully operational for all environments. Start the disaster recovery implementation for DHS's KOLEA system and the State Hub. Start the disaster recovery implementation of the new TAX system
 - g. Do a field system merge of the UH and DRFortress implementation and turn over control to the Production Services Branch (PSB).
 - h. Expand the scope of the monitoring done by the operator to include website access, database instance monitoring, performance metrics and others.
3. Two Years
- a. Maintain and upgrade network infrastructure as necessary to maintain product support.
 - b. Continue to develop and expand the SOC.
 - c. Continue to ensure that systems and equipment maintenance continue to the extent that funding will allow. Replace or upgrade systems and equipment that reach end-of-life or are no longer supported by the manufacturer.
 - d. Finish up work on the ITSM rollout and put into full production.
 - e. Shift Kalanimoku data center activities to alternate data centers and reduce the Kalanimoku facility to a monitoring and telecom hub.
4. Five Years

- a. The program will continue to refine objectives that were previously identified and follow-up on unfinished objectives and any new initiatives that may have been identified.

D. Reduce costs by identifying, implementing and sustaining programs to optimize the use of hardware, software and contractors through enterprise agreements, governance and rationalization.

1. Past Year Accomplishments

- a. Retired and consolidated systems to provide cost savings and efficiencies.

2. One Year

- a. Continue to retire and consolidate systems to provide cost savings and efficiencies.
- b. Complete all mainframe middleware consolidation including COBOL, CICS, DB2, and Software AG Natural.

3. Two Years

- a. Based upon the system assessment/study, issue an RFP to off premise some of these systems.
- b. Architect a target for the Mainframe applications to be retired.

4. Five Years

- a. Mainframe and Enterprise UNIX will no longer be part of the ICSD/ETS system portfolio. ETS will continuously look for opportunities to implement more open source technologies to reduce costs as well as dependence on expensive and proprietary vendor lock-in systems.
- b. Tivoli Storage Manager and associated tape systems will be eliminated and replaced by clustered storage appliances that will do immediate snapshotting and replication.

IV. Performance Measures

- A. Customer Satisfaction Measure — If there are suggestions and/or complaints, an annual written survey for departments/agencies affected by ICSD will be developed and distributed. The results will be evaluated and significant areas of concern identified by users will be addressed.
- B. Program Standard Measure — Monitor and evaluate the division's Measures of Effectiveness for delivery of service.
- C. Cost Effectiveness Measure — Annual costs will be monitored and any significant variance in expenditures will be evaluated and corrective measures implemented, as needed.