



**North Carolina
Government Data Analytics Center
Program**

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**North Carolina
Office of the State Controller**

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Executive Summary

Since 2007, North Carolina state government's data integration and business intelligence efforts have been led and managed by the Office of the State Controller (OSC). During this time, the program has developed, implemented and maintained a variety of program efforts ranging from early support of agency projects, to the development and statewide deployment of an integrated criminal justice system, to current efforts with fraud, waste and compliance analytics as well as general program reporting and analytics.

Session Law 2012-142, HB 950, expanded the State's current data integration and business intelligence initiatives by creating the OSC Government Business Intelligence Competency Center (GBICC) to manage the State's enterprise data integration and business analytics efforts. Session Law 2013-360, SB 402, amended Article 9 of Chapter 143B and codified the data integration and business intelligence, changed the name of the program to the Government Data Analytics Center (GDAC), and authorized recurring administrative appropriations. Session Law 2013-360, SB 402, also directed the transfer of the GDAC program to the Office of the State Chief Information Officer (SCIO) effective July 1, 2014. OSC and the GDAC program staff have worked collaboratively with the SCIO to support the transition of the program.

The GDAC manages enterprise program activities as well as the development and support of analytics projects and systems including the North Carolina Financial Accountability and Compliance Technology System (NC FACTS) fraud, waste and improper payment detection project, the Criminal Justice Law Enforcement Automated Data Services (CJLEADS) criminal justice data integration system, and state reporting and analytics efforts. As the program transitions to the Office of the SCIO, the GDAC mission will continue to be refined to align with the SCIO's Cabinet Unite IT Strategy. Data management, governance, security and the integration of analytics into agency and enterprise IT strategy remain an integral focus of the program. With a change in leadership within the GDAC, the SCIO's office is actively recruiting for new management personnel.

GDAC Solution Development – Fraud and Compliance Alerts (NC FACTS)

The enterprise NC FACTS application is comprised of a variety of fraud and compliance solutions designed to meet the individual business needs of each agency partner. GDAC, vendor and agency partner resources support multiple parallel work streams to allow individual solution development at different stages of the systems development life cycle. As the NC FACTS fraud and compliance foundation continues to mature, the program provides the ability to develop incremental solutions in a timely and efficient manner.

NC FACTS is currently working with the following agency partners:

- Department of Commerce – Division of Employment Security (DES) - unemployment insurance (UI) fraud and overpayment analysis,
- Secretary of State - corporation network analysis,
- NC Industrial Commission - workers' compensation (WC) insurance compliance, and

- Department of State Treasurer – State Health Plan of NC – medical and pharmacy analysis.

The chart below provides status for the GDAC solutions:

<u>NC FACTS Solution</u>	<u>Current Status</u>	<u>Target Release Date</u>
UI Wage/Tax Analysis and Alerts	Release Deployed	December 2013
UI Claims and Benefit Analysis and Alerts	Pilot Release Deployed	March 2014
Corporation Network Link Analysis	Pilot Release Deployed	May 2014
WC Insurance Compliance Alerts	Pilot Release Deployed	March 2014
Health and Pharmacy Claims Analysis	Prototype Release Deployed	March 2014

GDAC Solution Development - Reporting and Analytics

- Implemented reporting for NC SAS Enterprise Authentication Tool (NCSEAT) April 2014,
- Deploying Procurement card reporting and analytics to pilot agencies – Targeted May 2014,
- Operationalizing State Health Plan Analytics Repository in the GDAC production environment - Targeted May 2014.

GDAC Program Management and Business Services

- On-boarded and trained DES and WC users for both NCSEAT and NC FACTS,
- Continued development of GDAC User Guides and solution documentation,
- Continued to support CJLEADS business services including training, user administration, help desk support and auditing.

CJLEADS Operations and GDAC Technical Environment

CJLEADS

- Continued CJLEADS 24x7 Operations,
- Deployed recurring jail data extract process to support the North Carolina Department of Health and Human Services – Division of Mental Health/Developmental Disabilities/Substance Abuse Services,
- Developed and deployed a statewide Pistol Purchase Permit Revocation report for use by the NC Sheriffs’ Association to meet HB 937 requirements.

GDAC

- Initiated development of the single sign-on GDAC Information Delivery Portal – target deployment June 2014,
- Finalized requirements for the GDAC Data Registry - target deployment Q4 2014.

This report provides a detailed status on the GDAC activities, financials, and future efforts.

I. GDAC Background

The Office of the State Controller has led and managed the North Carolina data integration and business intelligence initiative since its inception in 2007. Following the Building Enterprise Access for NC's Core Operation Needs (BEACON) Strategic Plan for Statewide Data Integration, the program has provided education on the value and capabilities of an enterprise analytics program, established governance and security policy and procedures, developed enterprise solutions including CJLEADS and NC FACTS, and provided business operations for the enterprise initiatives.

Session Law 2012-142, HB 950, expanded the State's existing data integration and business intelligence initiatives by creating the OSC Government Business Intelligence Competency Center (GBICC) to manage the State's enterprise data integration and business analytics efforts. Session Law 2013-360, SB 402, amended Article 9 of Chapter 143B, codified the data integration and business intelligence, changed the name of the program to the Government Data Analytics Center (GDAC), and provided recurring operational funding. Session Law 2013-360, SB 402, also directed the transfer of the GDAC program to the Office of the State Chief Information Officer (SCIO) effective July 1, 2014. OSC and the GDAC program staff have worked collaboratively with the SCIO to support the transition of the program.

The vision for the GDAC is to transform existing data assets into strategic information for the State's policy and operational leaders use in making program investment decisions, managing resources, and improving financial programs, budgets, and results. With the transition of the program to the Office of the SCIO, the GDAC vision will continue to be refined to align with the SCIO's Cabinet Unite IT Strategy. With a change in leadership within the GDAC, the SCIO's office is actively recruiting for new management personnel.

Governance, enterprise support and standardization are key areas of focus in an enterprise approach to data sharing and analytics. While technology plays a key role in effective data analytics, the success of an enterprise initiative depends upon State stakeholders who are engaged and who recognize that the return on investment can be dollars saved, future cost avoidances, operational efficiencies or enhanced compliance. Strong communications and the ability to manage change and make the initiative relevant to the stakeholders require significant effort to ensure the advantages of the program make clear "what's in it for them" to the agencies and end users.

For more information about program and data governance, security, and the solution development approach, please see the Government Data Analytics Center Program report dated October 2013 located at:

http://www.osc.nc.gov/GDAC/GDAC_Legis_Report_Oct_2013.pdf.

II. GDAC Solutions Development

A. GDAC Fraud and Compliance Alerts (NC FACTS)

NC FACTS provides fraud and compliance alert capability for the GDAC. The alert analysis, generation, research and disposition works similarly for all fraud, waste, improper payment and compliance efforts. Analysis begins with the iterative process to match and evaluate data, generate “quick hits,” refine the analytics, and provide preliminary alerts for review and investigation by the business organization.

The alert process is then incorporated into a web-based user interface that allows users to view alerts, “drill in” and research background information related to those alerts, disposition alerts by assigning to appropriate investigators, perform case management, and finally close out the alert with a resolution of the investigation.

The alert generation process incorporates criteria defined by the business organizations to help prioritize alerts that represent higher risk, greater financial exposure, or perhaps repeat activity. This prioritization allows organizations to most effectively direct their limited resources to focus on the most egregious alerts. The user interface increases staff efficiency by providing access to critical data related to an alert through a single system, minimizing research and investigative legwork.

GDAC Solutions – Fraud and Compliance Alerts (NC FACTS)

Department of Commerce – Division of Employment Security (DES)

Unemployment Insurance Wage and Tax Analysis – Implemented, December 2013

UI wage and tax analysis focuses primarily on two areas of potential fraud.

- Fictitious business alerts analyze situations where non-existent businesses are established and false wage reports are submitted for the sole purposes of fraudulently collecting UI benefits. The goal of the fictitious business analysis is to use data to more quickly identify and alert on suspect businesses allowing DES to stop benefit payments as soon as possible.
- Undocumented succession alerts analyze situations where it appears a business owner who has a high rate of UI tax establishes a new business with a lower tax rate and moves its existing employees to that new business to avoid paying UI taxes. Analysis of the data can more quickly identify the movement of employees and alert on the suspect businesses.

Major accomplishments this quarter included:

- Deployed additional reports to Division of Employment Security tax and compliance team to support investigations.

Unemployment Insurance Claims and Benefit Analysis – Implemented Pilot, March 2014

UI claims and benefit analysis focuses primarily on potential fraud where individuals who are not eligible to receive UI appear to be receiving benefits. Claims and benefits analysis focuses on:

- Payments made to deceased individuals,
- Payments made to incarcerated individuals, and
- Payments made to individuals who appear to be drawing wages during the same time period.

Major accomplishments this quarter:

- Completed User Acceptance Testing (UAT),
- Deployed the solution to the Division of Employment Security Benefits Integrity Management Team for pilot evaluation.

Secretary of State

Corporate Network Link Analysis – Implemented Pilot, May 2014

Corporate network link analysis provides relationship analysis of businesses registered with the State of North Carolina in a graphical format. The network link analysis supports research for corporate identity theft and other fraud solution investigations.

Major accomplishments this quarter:

- Completed UAT,
- Implemented solution for pilot release.

North Carolina Industrial Commission

Workers' Compensation Insurance Compliance – Implemented Pilot, March 2014

Workers' compensation insurance compliance analysis identifies businesses operating in the State that are subject to workers' compensation insurance rules but fail to carry the required insurance coverage. Using business information and insurance coverage data, these analytics identify companies suspected of having no coverage, gaps in coverage, or cancellations and non-renewals of coverage.

Major accomplishments this quarter:

- Completed UAT testing for initial release,
- Implemented solution for pilot release March 2014,
- Development and testing of release 1.1 to provide additional functionality is underway,
- Developed new Data Access and Use Agreements (DAUA) to integrate additional data sources which will enable refined compliance analytics.

Department of the State Treasurer – State Health Plan of North Carolina (SHPNC)

Health Plan Analysis – Implemented Prototype, March 2014

Health plan analysis evaluates provider, member, and claims data to identify potential unusual activity in health care and pharmacy claims. Using peer group analysis to find entities that should exhibit common behavior, the alerts highlight activity that falls outside the expected patterns.

Major accomplishments this quarter:

- Completed the integration the health plan data into SAS Fraud Framework (SFF) using standard health care analytic models,
- Completed exploratory data analysis and began developing “quick hit” analysis,
- Implemented a prototype for standard health care and pharmacy alerts.

B. GDAC Reporting and Analytics

The reporting and analytics capability for the GDAC will share the same technical environment as the NC FACTS fraud and compliance alerting solutions. This common technical infrastructure and data repository provides access to all integrated data to support agency program analytics, metrics, predictive analysis and executive dashboards. The GDAC reporting and analytics will provide access to a variety of tools that allow the user to run standard, system-generated reports, create ad hoc reports, and view data in tabular as well as visual representations.

Procurement Card Reporting - Implemented Pilot, March 2014

Procurement Card (Pcard) Reporting will provide agencies and the Department of Administration with more timely and efficient oversight of agency purchases using Pcards.

Major accomplishments this quarter:

- Finalized Quality Assurance testing,
- Finalized User Acceptance Testing (UAT),
- Deployment of solution to pilot agencies planned June 2014.

State Health Plan Analytics Repository - In Production

The State Health Plan Analytics Repository was migrated to the GDAC environment to provide SHPNC a more reliable and better performing analytics environment. Work has continued to automate and operationalize many of the manual processes being managed by the State Health Plan.

Major accomplishments this quarter:

- Integrated the State Health Plan Analytics Repository with NCSEAT planned May 2014,
- Operationalized the production Extract Load and Transform Process (ETL).

An early estimate of the cost to build a new stand-alone, vendor-hosted SHPNC data analytics repository was \$3 million. Even upgrades to the technical infrastructure and servers at DST to meet performance requirements would have been a significant cost to DST and SHPNC. As a result, incorporation into the GDAC was a logical, cost-effective solution.

III. GDAC Program Management and Business Services

GDAC Program Management and Business Services supports the governance, policies and procedures associated with all GDAC solutions, including management of all data-sharing agreements, training, documentation, user administration, help desk support and auditing of data access and use. Leveraging the experience, best practices, and lessons learned from the implementation and statewide deployment of CJLEADS, the CJLEADS Business Operations staff has assumed support services for all GDAC solutions.

Business services include:

- GDAC program policy and procedure management - developing, maintaining and ensuring compliance with standards and best practices in accordance with the GDAC enterprise approach,
- GDAC End User Administration – developing policies and support processes for NCID user authentication as well as oversight of delegated user administrators and GDAC solution end users,
- GDAC Training – developing training documentation including user guides, job aids, class materials and well as administering training registration systems for end users and user administrators,
- GDAC Help Desk and End User Support – providing end user support for system access and issue resolution,
- GDAC Business Process Support – providing partner agencies with assistance in implementing and documenting new processes to leverage GDAC analytic tools, and
- GDAC Auditing – managing regular and recurring audit procedures to ensure appropriate and authorized use of all GDAC solutions in accordance with GDAC governance policies.

Major accomplishments this quarter:

- Developed the GDAC main web-page,
- Filled all vacant positions to fully support current and expanding initiatives,
- Delivered NCSEAT and NC FACTS training programs,

- Updated GDAC User Guides and associated documentation about application tool features and functionality,
- Implemented agency end user on-boarding processes to support the GDAC solutions,
- On-boarded DES and WC NCSEAT and NC FACTS application users,
- Continued development of the production support operations manual for GDAC,
- Delivered NCSEAT reporting capability to DES and WC, and
- Supported CJLEADS end user and user administration training and annual audit activities
 - Over 28,000 end users have been trained in more than 2,400 CJLEADS classes,
 - 82 certified “Train-the-Trainers” have conducted over 840 classes for their organizations,
 - On average, over 100 user inquiries are managed weekly by CJLEADS help desk support on a 24x7x365 basis, and
 - Annual audits for all CJLEADS licensed criminal justice organizations.

IV. CJLEADS Operations and GDAC Technical Environment

A. CJLEADS

The Criminal Justice Law Enforcement Automated Data Services (CJLEADS) application has served the criminal justice community, saving time, money, and lives. Consistent with the General Assembly’s intent to serve criminal justice professionals and improve the safety of North Carolina’s citizens, CJLEADS has two primary objectives:

1. To provide a comprehensive view of an offender through a single application, allowing for positive identification of an offender through a photographic image.
2. To provide an “offender watch” capability to alert criminal justice professionals when an offender has a change in status.

The CJLEADS team maintains regular communications with end users and deploys two to four application releases each year to ensure the application is continuously improved to meet the needs of the criminal justice community.

Statewide Operations Statistics

CJLEADS is used statewide by over 27,500 criminal justice professionals. A total of 548 federal, state, and local law enforcement organizations with operational presence in North Carolina are licensed to use CJLEADS.

In the last 12 months, criminal justice professionals have run 18.2 million searches and accessed nearly 15.2 million offender and DMV records. Over 11,300 users access CJLEADS each week.

Major Accomplishments

- Division of Mental Health Support – implemented a nightly jail extract for the Department of Health and Human Services, Division of Mental Health to assist Local Management Entities (LME) with identifying individuals on their case management load who have been arrested and booked into custody in county jail facilities. This extract replaces the current manual process of contacting nearby jail facilities and allows the LMEs to more easily review statewide jail booking information, reducing the administrative time for the LMEs and Sheriff’s offices.
- North Carolina Sheriff’s Association (NCSA) – provided a statistical report for the Pistol Purchase Permit Revocation process to support the NCSA in meeting the requirements of HB 937 legislative reporting.

Future Functionality

The following CJLEADS items have been identified to enhance existing functionality and to support statutory requirements.

- Pistol Purchase Permit (PPP) Revocation Reporting Automation – refine and automate the data handling process to improve the efficiency and provide alerting capabilities for the sheriffs’ offices.
- DMV Enhancements – add stolen vehicle information and restriction code descriptions to support more efficient review of information by law enforcement.
- AOC Infractions – add infractions data as requested by law enforcement for a more complete offender profile.
- Alcohol Law Enforcement (ALE) Background Checks – develop reporting capability similar to PPP to assist ALE in conducting NC criminal searches on North Carolina Education Lottery (NCEL) and Alcohol Beverage Commission (ABC) retailer applications.
- Web links – add links to key information sources for quick access for law enforcement
 - USDOT Emergency Response Guidebook (HAZMAT)
 - GangNet
- Reports – add reports as requested by the criminal justice community
 - Class 3 Misdemeanant Eligibility for Appointed Counsel
 - Pending DWI Report Updates
- Role additions – add new security roles as approved by data source agencies.
- Federal Interface – continue efforts to obtain access to federal criminal information, specifically Hot File access for wanted persons, stolen vehicles and stolen weapons.

B. GDAC Technical Environment

The GDAC technical environment is a series of hosted environments (test, development and production) at the SAS data center facilities. Unlike CJLEADS which requires 24x7 highly available operations, the GDAC technical environment is designed to support normal business hours of operations. To ensure security, penetration testing is completed for all major GDAC solution deployments to ensure that new data and functionality do not introduce any vulnerability to the system.

As the GDAC environment matures, foundational components are being developed to support the enterprise solution.

NCSEAT – Implemented December 2014

NC SAS Enterprise Authentication Tool (NCSEAT) is an enterprise tool developed to support user authentication and security authorization for all State solutions hosted at SAS. NCSEAT integrates with the State's standard identity management technology, NCID, allowing the GDAC to ensure that all GDAC users adhere to State security policies. NCSEAT provides the ability to control data and functional access leveraging role-based security and user attributes. The enterprise solution provides an easy to integrate user authentication tool and reduces development efforts for future GDAC solutions.

GDAC Portal - Target implementation Q2 2014

The GDAC portal will provide users with single sign-on capability to access all GDAC solutions. The GDAC portal provides a consistent and standard user experience for GDAC solutions. This standardization streamlines future design efforts, reduces user training and support, and creates the enterprise program foundation.

Major accomplishments this quarter:

- Finalized the requirements and design
- Initiated the development of the Portal

GDAC Data Registry - Target implementation Q4 2014

Data inventory, standards, and management are critical to the ability to provide quick, agile, and consistent data content to meet the State's business needs. The GDAC Data Registry will provide users with a library of data available in the GDAC environment. The registry will capture information about each data source including data dictionaries, update frequencies, data quality issues, governance and costs, if the data is purchased from an external source.

Major accomplishments this quarter:

- Initiated the requirements and design



The following data sources are currently integrated into the GDAC environment:

<h2 style="text-align: center;">GDAC– Integrated Data Sources</h2>		
NCAS	BEACON	Division of Employment Security
Purchasing Card Transactions Payment Data Vendor Information	Employee and Position Data Employee Earnings Information	Benefits Payment Information Case Management Data Employer Tax Information
CJLEADS	State Employees Health Plan	Division of Motor Vehicles
DPS - Prison DPS - Probation DPS – Local Jail	Medical Claims Detail Pharmacy Claims Data Provider and Member Information	Driver's License Data Vehicle Registration Data
AOC - Criminal Court Records	Secretary of State	
DOJ - Concealed Handgun Data DOJ - Sex Offender Registry Wildlife – Web Service	Corporation Information UCC Information	Industrial Commission
Future Data Sources	DHHS - Center for Health Statistics	Other – External Sources
Retirement Information Unclaimed Property Education DHHS	Vital records – Deceased Information	Bank of America P-Card Data Social Security Death Master File

V. GDAC Budgets

CJLEADS

CJLEADS annual operating expenses are approximately \$7.6 million dollars. Recurring funding for CJLEADS annual operating expenses has been reduced to \$6,544,068. To manage the operating expenses of CJLEADS, the program has used funds remaining in the original program budget or the General Assembly has appropriated one-time funds to support specific upgrades. With limited remaining one-time funds, the FY 2013-2015 budget of \$6.6 million, with no expansion, will allow the continued operations and essential maintenance CJLEADS but will impact the ability to provide future data and functionality enhancements.

The following chart details this year's CJLEADS funding and expenditures:

As of March 31, 2013	FY 2013-2014 Budget	Actuals	Available Balance
<u>CJLEADS Funding</u>			
Recurring Funding	\$6,544,068		
Carry-Over From Prior Year	\$778,373		
Anticipated Withdrawal from On-Time Monies Held	\$275,000		
	<u>\$7,597,441</u>		
<u>CJLEADS Expenditures</u>			
Total Program: FY 2013 - 2014			
State Project Team Expenditures	\$1,595,297	\$1,093,604	
Hosting Contract Services	1,400,000	1,400,000	
Development/Support Contract Services	2,600,000	2,500,000	
SAS ELA Renewal	2,000,000	2,000,000	
	<u>\$ 7,595,297</u>	<u>\$ 6,993,604</u>	<u>\$ 601,693</u>
CJLEADS Total	\$ 7,595,297	\$ 6,993,604	\$ 601,693

GDAC

Session Law 2011-145, HB 200, authorized one-time funding of \$9 million for the development of an automated fraud, waste and improper payment data integration program. As a public-private partnership, the State's data integration vendor was required to contribute resources in the amount of \$5M over the two years (\$10M total) of the contract. The vendor contribution provided hosting hardware and technical environment infrastructure, software, support and services for design, development and implementation of data integration and business analytic model development. With

significant data sharing challenges inhibiting data analysis and development in FY 2012, OSC negotiated a contract extension with the vendor for an additional full year through December 2014 at no additional cost.

Session Law 2012-142, HB 950 appropriated \$5 million in non-recurring funds to support the enterprise BI program. Of that amount, OSC was authorized to use \$750,000 for the administration of the program. The remaining funds were reserved for initiatives recommended to and approved by the General Assembly.

Recurring funding of \$1,417,515 was provided in FY 2014 and FY 2015 for administrative support of the program, with non-recurring funds for vendor hosting, licensing, and analytic support to sustain long-term GDAC program efforts. Sustainable funding will be required for the long-term viability of the program.

As of March 31, 2014	<u>FY 2011-2012 Actual</u>	<u>FY 2012-2013 Actual</u>	<u>FY 2013-2014 Budget</u>	<u>FY 2013-2014 Actual</u>
<u>GDAC Funding</u>				
NC FACTS FY 2011-2013 funds	1,500,000	7,500,000		
NC FACTS FY 2011-2013 carry forward **		497,228	4,948,048	4,948,048
GBICC FY 2012-2013 funds		5,000,000		
GBICC FY 2012-2013 funds carry forward **			3,947,843	3,947,843
GDAC FY 2013-2014 (R)			1,417,515	1,417,515
GDAC FY 2013-2014 (NR)			1,582,485	1,582,485
Total funding	<u>\$ 1,500,000</u>	<u>\$ 12,997,228</u>	<u>\$ 11,895,891</u>	<u>\$ 11,895,891</u>
<u>GDAC Expenditures</u>				
GDAC Project Team Expenditures	102,772	501,337	1,417,515	578,075
NC FACTS Vendor Contract **	900,000	2,700,000	4,400,000	3,400,000
GDAC Vendor Contract **		900,000	5,100,000	3,150,000
Total expenditures	<u>\$ 1,002,772</u>	<u>\$ 4,101,337</u>	<u>\$ 10,917,515</u>	<u>\$ 7,128,075</u>
Fund Balance	<u><u>\$ 497,228</u></u>	<u><u>\$ 8,895,891</u></u>	<u><u>\$ 978,376</u></u>	<u><u>\$ 4,767,816</u></u>
<u>Vendor Fraud Detection Contribution</u>				
Vendor Financial Contribution - Required by contract	10,000,000			
Vendor Fraud Detection Expenditures - Actual	27,320,920			
State Vendor Payments To Date	(7,000,000)			
State Vendor Payment Owed **	(1,000,000)			
Total SAS Contribution	<u>19,320,920</u>			
** holdback pending remaining deliverables				