



**North Carolina**  
**Enterprise Electronic Forms and Digital**  
**Signatures**

**Quarterly Report**  
**January 2012**

**North Carolina**  
**Office of the State Controller**

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**January 1, 2012**



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## I. Approach

Session Law 2011-0145, House Bill 200, directed the State Controller to take the necessary measures to enable a coordinated enterprise electronic forms and digital signatures capability. The Office of the State Controller (OSC) has been working with agencies across the State to determine the best approach.

While there are intersections between e-forms and digital signatures:

- Automating business processes (e-forms) does not always involve digital signatures.
- Digital signatures can be plugged into an automated business process.
- Solutions in the marketplace are often separate.

A survey of high-level agency requirements and some of the available, mature solutions has led OSC to organize this effort in two projects:

- The **Authentication Project** focuses on digital signatures, eliminating resource-intensive processes that require agencies, citizens, and staff to manually sign documents.
- The **Workflow Automation Project** focuses on helping agencies be more efficient while eliminating paper processes by automating complex processes that encompass multiple forms and checkpoints.

OSC is committed to working across all agencies to provide practical and useful solutions. Agency participation is broad and enthusiastic. (See Appendix B for workgroup membership.) OSC is also ensuring agency awareness by updating all CIOs at their monthly meetings.

Further, OSC notes the statute's specification of an *enterprise capability* for executive branch agencies. OSC has a history of providing successful capabilities at the state enterprise level (i.e., PayPoint), and believes an enterprise offering with flexible on-boarding leads to better adoption than an enforced solution. To maximize agency participation, OSC is focusing on providing solutions that meet widespread needs, are cost-effective, easy-to-use and easy to access.

Based on feedback from agencies, OSC will proceed with a decentralized approach on the projects with minimal central management of the automation and authentication systems. This approach will allow OSC to enter into contracts with vendors and allow agencies to access services as they need them. OSC's role will be to provide contract administration, on-boarding assistance and training to

agencies in coordination with the vendors. There may be some statewide forms that can be offered centrally, but the assumption is that most activity will be within the agencies.

A key decision in OSC's approach is whether the state will build or purchase the solutions. Numerous mature solutions in the marketplace provide authentication and workflow automation. OSC, with the agreement of two cross-agency workgroups (described in detail below), determined the best use of scarce resources is to purchase solutions from vendors, rather than to build these capabilities in-house.

## **II. Authentication Project (Digital Signatures)**

### **A. Purpose**

The goal of the Authentication Project (digital signatures) is to develop an enterprise authentication capability that will:

- Provide offerings that are secure
- Provide auditable evidence that appropriate processes have been followed
- Be used easily by individuals for *ad hoc* signing
- Be integrated with automated business processes.

### **B. Vision**

OSC is working with agencies to determine the level of authentication needed, volumes of transactions required by level, and the best way of delivering the capabilities needed. Different offerings may be required to satisfy the different needs of the agencies.

### **C. Benefits**

The Authentication Project will eliminate resource-intensive processes that require agencies, citizens, and staff to manually sign documents (with "wet-ink" signatures). The Authentication Project can also provide added assurances of the evidence to the origin, identity, and status of an electronic document as well as acknowledging informed consent and approval by a signatory.

### **D. Scope**

The Authentication Project has the potential to greatly increase efficiency across the State by obtaining approvals/signatures at the necessary level of assurance, putting them through a workflow, and capturing the data in back-end systems. Both internal and public-facing approvals/signatures can be automated.

## E. Levels of Assurance

OSC is committed to meeting the various levels of assurance required by agencies. OSC will determine if a single solution can accommodate all levels of needs, or if more than one solution is needed to meet all requirements.

The levels of assurance can be broken into two categories:

- **“Click-to-sign”** is the most common type of electronic signature and is based on a user identification and password. This simple authentication method is made more secure and powerful by capturing date, time, IP address of the signing device, and possibly geo-location. These integrity properties are stored within the document and are usable for evidence if needed.
- Occasionally an agency has **“higher assurance needs”** where additional proof (factors of authentication) is needed. This may involve third-party partnerships for voice signature, biometric handwritten signatures, knowledge-based authentication, or other verification methods.

OSC will adhere to the N.C. Uniform Electronic Transactions Act (NCGS 66-311), the Federal Electronic Signatures in Global and National Commerce Act (Public Law 106-229), and with the Federal M-04-04 Memorandum, “E-Authentication Guidance for Federal Agencies.” This memo provides guidance on how to conduct an “e-authentication risk assessment” based on four levels of identity assurance for electronic transactions requiring authentication:

- Level 1: Little or no confidence in the asserted identity’s validity. The inconvenience or financial loss impacts would be low in the case of an authentication error.
- Level 2: Some confidence in the asserted identity’s validity. The inconvenience or financial loss impacts of an authentication error would be moderate, with low levels of harm to agency programs or sensitive information released.
- Level 3: High confidence in the asserted identity’s validity. The inconvenience or financial loss impacts of an authentication error would be moderate, and the possible harm to agency programs, release of sensitive information and civil or criminal violations would also be moderate. No personal safety issues would result.
- Level 4: Very high confidence in the asserted identity’s validity. Authentication errors would have a high impact on convenience, financial loss, harm to agency programs, sensitive information, personal safety, and civil or criminal violations, or release of sensitive information.

## **F. Workgroup and Requirements Gathering**

A cross-agency Authentication Workgroup is creating requirements and reviewing the marketplace.

Each agency in the workgroup provided “use case” processes that could benefit from an authentication solution. They explained the goals of each process, who supplies and who approves the information, and the level of trust needed. They also provided the number of transactions that occur each month, and how often a single person will need to repeat the process.

Project requirements follow directly from these use cases, and are organized into topics such as data capture, maintenance and support, reporting, pricing methods, security, document storage, and workflow.

The Authentication Workgroup is comprised of members from the Administrative Office of the Courts, Cultural Resources, Health and Human Services, Industrial Commission, Information Technology Services, Justice, Office of the State CIO, Public Safety, Revenue, State Controller’s Office, and the Secretary of State. Full membership information is listed in Appendix B.

## **G. Pilot**

The Authentication project will conduct two pilots:

- 1) The Community College System Office had already initiated their own six-month pilot program to authenticate (digitally sign) some of their internal forms. OSC saw an opportunity to collaborate with Community Colleges, participate in their pilot project, and thus gain experience with authentication (digital signatures). While the Community College System Office is automating/authenticating several of their forms, OSC is using the solution to test the OSC Travel and Reimbursement Forms. Approximately 100,000 travel reimbursements are processed annually for State Agencies. During the pilot, which will last from December 2011 to May 2012, two OSC trainers who travel frequently are entering their Travel and Reimbursement Form data into the system. The form is sent through a workflow so that it can obtain the necessary signatures. At the end of the process, data is entered into the North Carolina Accounting System (NCAS). Two other trainers are submitting their forms via paper, as they always have. OSC will evaluate this pilot project by comparing processing time, data integrity, and the ease of workflow for the two groups.
- 2) State Law requires that individuals applying for certain jobs undergo a fingerprint-based criminal history background check. When an employing agency wants to hire a person into such a position, the employing agency’s authorized representative provides the applicant with an Authorization for Release of Information (AFR) form. Approximately 135,000 requests are sent to the SBI each year; many from state agencies such as Health and Human Services. The

electronic signature capability will allow potential candidates applying for agency positions to digitally sign the form, send it to the hiring agency who can review and then route to the SBI for processing.

## **H. Next Steps**

OSC will work with the workgroup to complete agency requirements, determine the evaluation criteria, and write a request for proposal (RFP).

## **III. Workflow Automation Project (E-Forms)**

### **A. Purpose**

The goal of the Workflow Automation Project (e-Forms) is to develop an enterprise workflow automation capability that will focus on eliminating paper forms, reducing processing time, eliminating duplicate data entry, improving data integrity and automating the workflow.

### **B. Vision**

OSC is collaborating with agencies to determine the levels of automation that provide maximum benefits for the identified funding and set priorities accordingly.

### **C. Benefits**

The Workflow Automation Project will reduce paper, reduce processing times, eliminate duplicate data entry, improve data integrity, and provide for on-line service options. Benefits will vary depending on the agency business processes.

### **D. Scope**

OSC has determined that focusing on a single type of business process will allow the project to be scaled and right-sized into manageable components.

After discussions with numerous state agencies, OSC is tailoring the project to automate business processes that are common to many: *inspections and permitting*. The Departments of Agriculture, Environment and Natural Resources, Labor, Revenue and Transportation have these tasks as core business functions, and their need for automation is great.

The Workflow Automation Project will provide three steps of automation:

- Front-end collection of data,
- Obtaining approvals through a workflow,
- Data capture and storage.

OSC is working to provide a cost-effective solution, meet a widespread need, provide maximum, successful results, and create efficiencies and cost savings for agencies.

### **E. Workgroup and Requirements Gathering**

A cross-agency Workflow Automation Workgroup is creating requirements and reviewing the marketplace.

Each agency in the workgroup provided “use case” processes that could benefit from a workflow automation solution. The agencies outlined the goals of each process, who supplies and who approves the information, and which forms are used. They also provided the number of transactions that occur each month, and how often a single person will need to repeat the process. Project requirements follow directly from these use cases.

The Workflow Automation Workgroup is comprised of members from Agriculture, Labor, Office of the State CIO, Transportation, Revenue, and the State Controller’s Office. Full membership information is listed in Appendix B.

### **F. Pilot**

The workgroup reviewed potential pilot projects and identified two pilots for representation of the complex business processes: These will be the first projects undertaken once a vendor is selected.”

1) Department of Labor (DOL) elevator inspections. DOL has documented the business process in detail, which will assist in automation. Thirty-five inspectors in Labor’s Elevator and Amusement Device Bureau inspect all 23,000 elevators in the state on an annual basis; violations may require follow-up inspections. This process is often backlogged.

2) Department of Environment and Natural Resources (DENR) sedimentation and erosion control permits. The purpose of the sedimentation and erosion permit is to prevent sedimentation damage to streams and adjacent properties from construction activities (ensuring compliance with the Sedimentation and Pollution Control Act of 1973). The yearly average of sedimentation inspections is 18,756 and violations may require referral to enforcement.

Automating inspections and permitting will be a good test case of efficiencies provided by the chosen solution.

### **G. Next Steps**

OSC will work with the workgroup to complete agency requirements, determine the evaluation criteria, and write an RFP.

## IV. Accomplishments

- ✓ **Assembled Workgroups**
- ✓ **Identified pilots:**
- ✓ **Gathered requirements (75 percent complete)**
- ✓ **Conducted Agency Meetings**

<b>Agency</b>	<b>Meeting Date</b>
Employment Security Commission	Aug 15 <sup>th</sup>
Community Colleges System Office	Sept 7 <sup>th</sup>
Justice	Sept 15 <sup>th</sup>
Agriculture	Sept 16 <sup>th</sup>
Industrial Commission	Sept 26 <sup>th</sup>
Public Instruction	Sept 26 <sup>th</sup>
Health and Human Services – MMIS	Sept 27 <sup>th</sup>
Health and Human Services – HIT	Sept 30 <sup>th</sup>
Correction	Sept 30 <sup>th</sup>
Cultural Resources	Sept 30 <sup>th</sup>
Labor	Oct 3 <sup>rd</sup>
Secretary of State	Oct 6 <sup>th</sup>
Environment and Natural Resources	Oct 17 <sup>th</sup>
Revenue	Oct 18 <sup>th</sup>
Health and Human Services – DSS	Oct 20 <sup>th</sup>
Administrative Office of the Courts	Oct 21 <sup>st</sup>
Transportation	Oct 25 <sup>th</sup>
State Budget and Management	Oct 25 <sup>th</sup>
Auditor’s Office	Dec 7 <sup>th</sup>

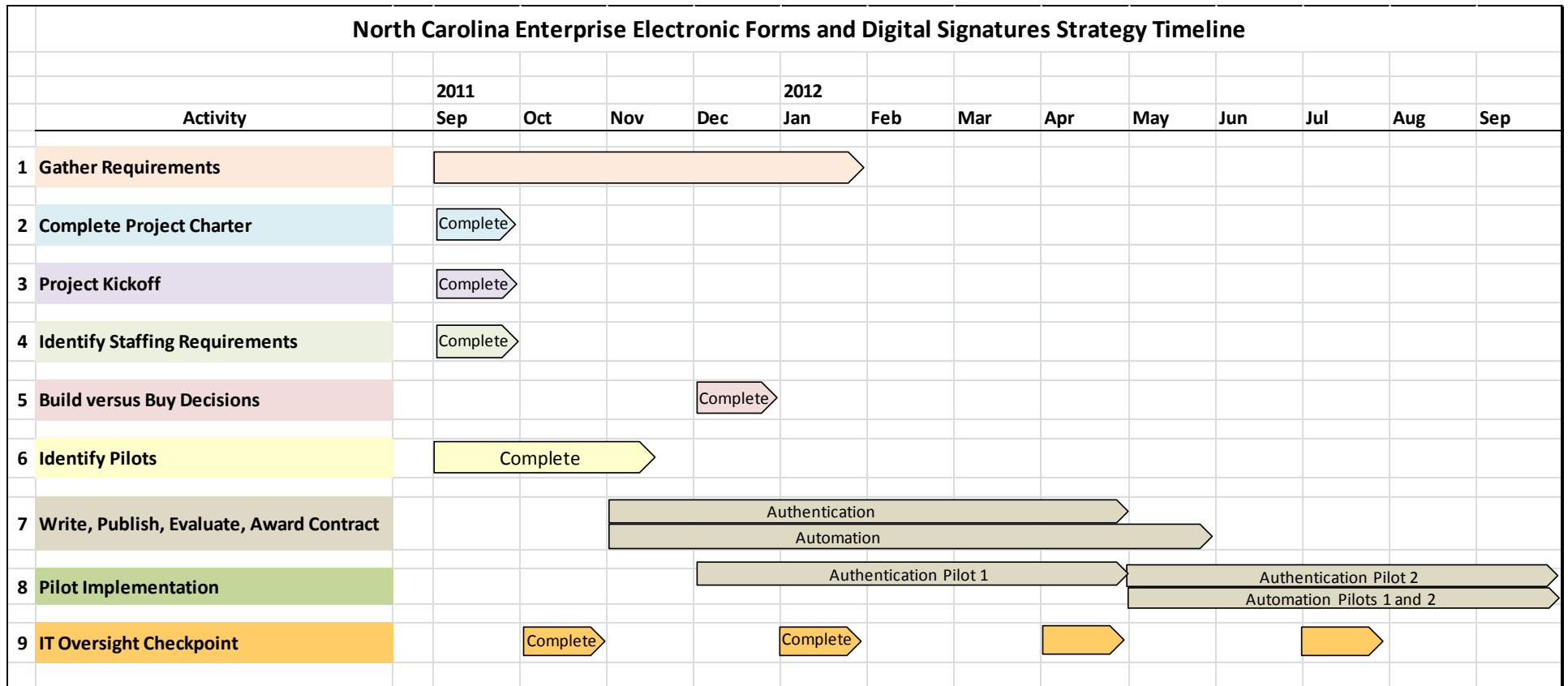
## V. Challenges

OSC has identified several challenges that could inhibit the successful implementation of the Authentication and Workflow Automation Projects. They include:

- **Project scope.** The project must be scaled and right-sized into manageable and deliverable components. OSC needs to provide solutions that are nimble and can be replicated, and can help agencies solve a wide variety of authentication and automation problems.

- Funding: A preliminary review of the marketplace leads OSC to believe the budget provided will be insufficient to provide enterprise-wide solutions to meet the state's authentication and automation needs. OSC is focusing on providing a choice of solutions that offer maximum and successful results, efficiency and cost savings for each agency.
- Automating complex manual processes can be difficult. The "business engineering" skill-set that is needed to begin an automation project is unique and scarce. Information technology staff needs an intimate understanding of the business process, and business staff often finds it difficult to map out long-held processes that have never been documented in detail.

## VI. Timeline



## **Appendix A: SESSION LAW 2011-0145, HOUSE BILL 200**

Session Law 2011-145 asked the State Controller to provide enterprise capability for e-forms and digital signatures. The law asked for costs, priorities and milestones. Agency requirements must be part of the planning process.

### **SECTION 6A.18. (a)**

Under the direction of the State Controller, the State shall plan, develop, and implement a coordinated enterprise electronic forms and digital signatures capability. In developing this capability, the State Controller shall determine the cost of converting forms to an electronic format, determine priorities for converting forms, and establish milestones for completing this conversion. The State Controller shall integrate executive branch agencies already in the process of developing electronic forms and digital signatures projects. Before beginning this effort, the State Controller shall determine specific agency requirements and incorporate their requirements into its planning efforts.

**SECTION 6A.18. (b)** Beginning October 1, 2011, the State Controller shall present quarterly reports on the status of the project to the Joint Legislative Oversight Committee on Information Technology.

## **Appendix B: Workgroup Membership**

### **Authentication Workgroup**

Patrick Blalock, Department of Health and Human Services

Bob Brinson, Department of Public Safety

Bobby De Clippelaar, Department of Justice

Kelly Eubank, Department of Cultural Resources

Mike Fenton, Office of the State CIO

Bob Giannuzzi, Office of the State CIO

William Haney, Information Technology Services (ITS)

Sharon Hayes, Office of the State Controller

Ginger Helms, Administrative Office of the Courts

Dan Kempton, Department of Revenue

Kirk Leggott, Industrial Commission

Tom Newsome, Office of the State Controller

Lois Nilsen, Office of the State CIO

Pete Powell, Administrative Office of the Courts

Patricia Ray, Information Technology Services (ITS)

Charles Richards, Office of the State CIO

Ozie Stallworth, Office of the Secretary of State

Jim Tulenko, Office of the State Controller

## **Appendix B: Workgroup Membership**

### **Workflow Automation Workgroup**

David Alford, Department of Transportation

Mike Fenton, Office of the State CIO

Bob Giannuzzi, Office of the State CIO

Sharon Hayes, Office of the State Controller

Dan Kempton, Department of Revenue

Chris Lehenbauer, Department of Labor

Edythe McKinney, Department of Environment and Natural Resources

Tom Newsome, Office of the State Controller

Lois Nilsen, Office of the State CIO

Jane Price, Department of Agriculture

Charles Richards, Office of the State CIO

Jim Tulenko, Office of the State Controller