I-95 CORRIDOR COALITION

ITS Program Assessment Support
Primary Contract No. DTFH61-96-C-00098
Task 9808

Evaluation of Field Operations Test 8: Electronic Credentialing

New York State Proof-of-Concept Project One Stop Credentialing and Registration

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I-95 Corridor Coalition
Commercial Vehicle Operations Program Track Committee

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Executive Summary

Introduction

The I-95 Corridor Coalition initially awarded funding for the development of electronic credentialing systems for commercial vehicle operations to five states: New York, New Jersey, Pennsylvania, Delaware, and Massachusetts. The initial evaluation of the I-95 Corridor Coalition credentialing project was to have focused on all five participating states. Initial meetings were conducted with Delaware, Massachusetts, New Jersey, New York, and Pennsylvania to discuss the evaluation schedule, goals and objectives, methodology, and completion date. During these meetings, however, it became apparent that project implementation was lagging in the participating states. The primary reason given was that state technical resources, both state personnel and contractor, were being targeted to deal with Y2K and were not available for new systems or software development activities. Additional reasons given for the delays in implementation of the credentialing projects by the participating states included inadequate funding, lack of Senior Management Understanding and lack of COTS solutions.

As a result of these unanticipated delays, a decision was made in the fall of 1999 to focus the evaluation on New York State:

- Evaluating New York's proof of concept, even though for only one state, would provide valuable information about the benefits of electronic credentialing, as well as document how the state was able to obtain management support for implementation

- New York had a defined project schedule and a target end date, and the budget for the evaluation had adequate resources to cover the evaluation of the project within the proposed schedule

Evaluation Methodology

The evaluation of New York's electronic credentialing project was conducted using the methodology developed by the Federal Highway Administration (FHWA) for evaluating ITS and ITS/CVO projects under the Transportation Equity Act for the 21st Century (TEA-21).

In addition, the evaluation team provided technical assistance with a survey of the motor carrier industry in New York. A survey was developed in conjunction with the State and the New York State Motor Carrier Association. The survey was distributed through the Association to all members, and the evaluation team analyzed returned surveys. A separate report summarizing the survey findings was submitted to the I-95 Corridor Coalition and FHWA.

Project Scope

At present, motor carriers apply for credentials in New York via the mail, fax, service bureaus, or through in-person visits to agencies located in Albany. New York's long-term goal for electronic credentialing is to establish an electronic "One-Stop-Credentialing and Registration " system (OSCAR) that will enable motor carriers to apply for credentials using a Web-based solution. OSCAR will have the following features at full development:

- Single point of entry Web-based front end that includes all credential application forms and can be accessed by motor carriers via Internet
- Four initial credentials, IRP, IFTA, SSRS, and HUT, with plans for future enhancements to include additional credentials and permitting;
- Links to agency home pages and information about credentials requirements in New York State and a help page on how to use OSCAR
- Interfaces to state legacy systems to enable end-to-end processing of credential applications
- Electronic funds transfer capabilities

- Appropriate security protections for transmission of proprietary data
- Ability to check legacy systems to identify potential problems with a carrier's application such as outstanding quarterly fuel tax payments
- Back-end interfaces with national clearinghouses and databases.

The electronic credentialing project being developed using the I-95 Corridor Coalition's funding is intended as a "proof-of-concept" for OSCAR.

Evaluation Findings

The goals and objectives developed for the evaluation anticipated the development of credentialing systems in five states. To this end, the goals and objectives are oriented toward evaluating production level systems rather than a proof-of-concept. Given that the scope of the evaluation effort ultimately was scaled back from the original plan, the findings are qualitative rather than quantitative.

Successful Proof-of-Concept: The proof-of-concept project was successfully completed in May 2001. A carrier was able to submit a credentials application and print out a temporary IRP operating permit in the carrier's home office. The state was able to update the IRP, IFTA, HUT, and SSRS legacy systems and process the application. During the test, the State and carrier were also able to transfer license plates, a level of functionality not initially included in the proof-of-concept test plan.

Meeting Industry Needs: The New York State motor carrier industry survey showed that the motor carrier industry is receptive to electronic credentialing and that the industry foresees benefits in time-savings, accuracy of data, and improved efficiency of services. Most importantly, the results of the survey indicated that OSCAR is accessible to all segments of the motor carrier industry and can provide benefits to small as well as to large carriers

Meeting State Needs: State personnel involved with testing the proof-of-concept indicated that OSCAR met their expectations. The system is user friendly and worked as expected. More importantly, through the proof-of-concept project, the state has identified "snags" in existing business processes that will be reengineered through the development of OSCAR.

Meeting I-95 Corridor Coalition Goals: Two primary goals for the I-95 Corridor Coalition are to have Corridor Coalition funding used to leverage additional resources and to encourage the deployment of new technologies and systems. To this end, the New York State Field Operations Test (FOT) is a significant success for the I-95 Corridor Coalition's CVO program. The overall budget for the proof-of-concept included a significant in-kind contribution of state personnel resources, thus meeting the goal of leveraging additional resources. OSCAR, once deployed at a production level, will serve as the core credentialing system in support of New York's CVISN deployment. This successfully meets the goal of deploying new technologies and systems.

Successful Program Management: The management structure adopted for the New York Motor Carrier Program has enabled the state to successfully address the institutional issues. New York's steering committee is composed of senior managers empowered to make decisions on behalf of their agencies. The working group contains the key technical and program personnel who have the experience needed to successfully implement projects such as OSCAR. In addition, the state has established a close working relationship with the motor carrier industry and has obtained industry support for projects such as OSCAR.

Conclusions

Obtain Up-Front Management Support: New York succeeded because senior management had approved the proposed project prior to obtaining funding from the Corridor Coalition. Lack of senior management buy-in and support was a major factor in other states not moving ahead with the FOT.

Develop a Detailed Project Plan and a Flexible Schedule: New York had developed a detailed project plan that included an estimated budget, a project schedule with identified milestones, a listing of services that would need to be procured, and a plan on how to procure these services. As a result, New York was able to respond to unanticipated delays, changes in scope, and other issues that came up during the proof-of-concept by reallocating resources, adjusting the schedule, and such without compromising the project.

Obtain Customer Input on System Design and Functionality: The New York State Motor Carrier Association was brought into the project early on as a full partner, and was actively involved in the system design, requirements analysis, and testing. The result is a system that meets industry needs, and is accessible to all segments of the motor carrier industry in New York.

Use a Phased and Iterative Approach to Development: New York is in turn planning a phased development process for OSCAR, with additional functionality added in "chunks." This approach to the development and deployment of OSCAR will enable the state to identify and address stakeholder issues proactively, which in turn will help to ensure that institutional issues do not derail project success.

Obtain the Services of a full-time System Architect: The system architect is a state employee and is dedicated on a near full-time basis to supporting the project. This helped ensure continuity in the provision of technical services and enabled the system architect to work with other agencies and develop an understanding of institutional and technical constraints facing these agencies as well as a detailed understanding of business processes.

Recommendations

Evaluate OSCAR at Full Development: An evaluation of OSCAR at full deployment would be of benefit to the I-95 Corridor Coalition, in particular, and to the ongoing development and deployment of ITS/CVO in general. The proof-of-concept project has been highly successful and will serve as the cornerstone for the development of a production level credentialing system. Continued documentation of the development and deployment of OSCAR will enable other states to benefit from New York's efforts and lessons learned and will enable the system to be evaluated as a production level system. The findings of this evaluation are primarily qualitative in nature. Conducting an evaluation of OSCAR at full deployment would enable the collection of quantifiable cost and benefit data to facilitate more in-depth cost-benefit and other analyses. Having quantified data and analyses will help other states in their efforts to obtain industry support and legislative approval for funding.

Continue OSCAR Development and Deployment for Additional Credentials: The evaluation team strongly recommends that New York State continue to provide the technical and financial resources necessary to continue the development and deployment of OSCAR as a production level electronic credentialing system. The proof-of-concept has successfully demonstrated the technical feasibility of OSCAR. Interviews with the test team as well as the results of the industry survey indicate that OSCAR will address the needs of the New York State government and the New York State motor carrier industry. Based on these findings, the evaluation team believes that continued development and deployment will provide additional benefits to both government and industry.

Continue OSCAR Development and Deployment as a Core CVISN System: New York State has completed the FMCSA sponsored CVISN workshops and has developed a CVISN project plan. The evaluation team recommends that New York continue the development and deployment of OSCAR as the core CVISN electronic credentialing system. This will help ensure that New York not only deploys a successful electronic credentialing system to serve the motor carrier industry, but will also enable the state to meet the roadside safety and interstate data exchange goals of the national CVISN program.

1.0 Introduction

1.1 I-95 Corridor Coalition Commercial Vehicle Operations (CVO) Program

The I-95 Corridor Coalition is a "virtual organization" whose members include representatives from departments of motor vehicles and transportation, toll authorities, state police, tax and revenue agencies, and public service commissions from the mid-Atlantic and Northeastern states. . In addition to these state agencies, a number of industry and trade associations have also joined the coalition, including the American Trucking Association, the National Private Truck Council, the American Association of Motor Vehicle Administrators, and the Intelligent Transportation Society of America. The Federal Motor Carrier Safety Administration serves in the dual capacity as a primary sponsor of the coalition and an active member. The mission of the coalition is to identify and deploy intelligent transportation systems (ITS) to help enhance highway safety, improve mobility and freight movement, and reduce congestion throughout the I-95 corridor.

The I-95 Corridor Coalition is organized into eight program tracks, of which the CVO Program Track Committee (PTC) is the largest. The CVO PTC is in turn organized into three subcommittees: Electronic Credentialing, Safety, and Carrier Operations. An advisory group composed of volunteers from member agencies provides policy guidance for the CVO PTC.

The initial I-95 CVO program was based on the national ITS/CVO program. Funding was made available by the Corridor Coalition to member agencies to implement projects in the following program areas:

- *Electronic Credentialing* – Development of systems that will enable motor carriers to apply, pay for, and receive credentials electronically and that will enable the electronic exchange of data between agencies within a state, between states, and with national clearinghouses and information systems

- *Roadside Safety* – Development of systems and communications technologies that will enable the real-time exchange of data on motor carrier safety and credentials to and from enforcement personnel at the roadside

- *Electronic Screening* – Use of roadside readers and in-cab transponders to electronically screen motor carriers and weigh and inspection facilities, both fixed site and mobile

- *Carrier Operations* – Field operational test of communications and technical systems to provide motor carriers with real-time access to information about road conditions, congestion, incidents, and other related traveler information, and development of a model motor carrier safety program.

Member agencies responded to a request for Letters of Interest issued by the Corridor Coalition in the spring of 1997. Based on project proposals received, member agencies were awarded funding for projects in the summer of 1997. Five states were selected to receive funding for the development of electronically credentialing systems: New York, Massachusetts, New Jersey, Pennsylvania, and Delaware. The initial electronic credentialing project, known as Field Operations Test 8 (FOT 8), in the Corridor Coalition's work plan, was designed to streamline credentials administration and thus reduce costs for both the participating states and the motor carrier industry by improving efficiency of operations. Table 1.1 summarizes the projects proposed by the five states as well as the level of funding received by each state.

Table 1.1: FOT 8 Funding Allocation by Participating State

State	Funding	Proposed Project
Delaware	$190,000	Develop electronic credentialing software application for IRP Build necessary legacy system interfaces to integrate the credentialing software Enable electronic data exchange and electronic funds transfers between motor carriers and state agencies Establish interface with IRP clearinghouse
Massachusetts	$500,000	Field test an integrated Web-based solution that would support the following transactions: – Expand the automated driving record process for proactive use by the motor carrier industry – Automate IRP and IFTA temporary permits – Automate, expand, and integrate commercial registrations renewals and amendments – Expand and integrate oversize/overweight permitting
New Jersey	$240,000	Develop an Internet-based solution that would enable filing for IRP and IFTA credentials
New York	$577,910	Develop an Internet-based electronic credentialing proof-of-concept to demonstrate the viability of an electronic "one-stop-shop" for IRP, IFTA, SSRS, and HUT credentials
Pennsylvania	$190,000	Develop an Internet-based solution that would permit motor carriers to submit IRP filings Develop capability to electronic image and store paper documents, and provide electronic image access to documents to state personnel

The State of Delaware subsequently withdrew from the electronic credentialing project and returned the funds to the Corridor Coalition.

1.2 Credentialing Evaluation – Change in Scope

The initial evaluation of the I-95 Corridor Coalition credentialing project was to have focused on all five participating states. Initial meetings were conducted with Delaware, Massachusetts, New Jersey, New York, and Pennsylvania to discuss the evaluation schedule, goals and objectives, methodology, and completion date. During these meetings, however, it became apparent that project implementation was lagging in the participating states. The primary reason given was that state technical resources, both state personnel and contractor, were being targeted to deal with Y2K and were not available for new systems or software development activities. Additional reasons given for the delays in implementation of the credentialing projects by the participating states included:

- *Inadequate Funds* – The funds provided by the Corridor Coalition were not adequate to fund the complete development of an electronic credentialing system. The states determined that supplemental funds, either state or federal, would be required and these funds had not yet been requested in annual budgets

- *Lack of Senior Management Understanding and Support* – Motor carrier services are often a small part of the regular business of a department of motor vehicles, and senior management had placed priority on projects that served a larger customer base. Senior management did not fully

understand the need for and the benefits of electronic credentialing and therefore allocated resources to other projects

- *Lack of COTS Software* – Several of the participating states had indicated that they intended to use products and systems to be developed through the Commercial Vehicle Information Systems and Networks (CVISN) project, in particular, from the two prototype states of Maryland and Virginia. However, delays in CVISN development efforts in these states subsequently caused project schedules predicated on having an available product to slip as well.

During the fall of 1999, it became apparent that the budget supporting the evaluation effort was being diminished by the ongoing monitoring of the status of the credentialing projects in each state, in particular, determining when each project would begin and how long the project would last. New York State, however, had begun development work on their proof of concept and had a planned completion date of spring 2000. Given this, a recommendation was submitted to the Corridor Coalition that the evaluation effort focus on the New York State project, for the following reasons:

- Evaluating New York's proof of concept, even though for only one state, would provide valuable information about the benefits of electronic credentialing, as well as document how the state was able to obtain management support for implementation

- New York had a defined project schedule and a target end date, and the budget for the evaluation had adequate resources to cover the evaluation of the project within the proposed schedule

- Other participating states had not yet finalized project completion dates, leaving the evaluation effort somewhat open-ended.

The recommendation to focus the evaluation effort on New York State was accepted by the Corridor Coalition in the fall of 1999.

2.0 Evaluation Methodology

The evaluation of New York's electronic credentialing project was conducted using the methodology developed by the Federal Highway Administration (FHWA) for evaluating ITS and ITS/CVO projects under the Transportation Equity Act for the 21st Century (TEA-21).

2.1 Evaluation Strategy

The first step in the evaluation was to develop the evaluation strategy document. Draft goals and objectives for the evaluation were developed based on a detailed review of the projects proposed under FOT 8 and a review of the evaluation strategy that had been developed for the nationwide CVISN project. The draft goals and objectives mirrored similar goals and objectives that had been developed for the electronic credentialing component of the CVISN project. This was done to ensure consistency among the evaluation efforts and to ensure that the results of each evaluation effort were comparable.

The draft goals and objectives were distributed to the FOT 8 states. Site visits were conducted in Massachusetts, New York, Delaware, and Pennsylvania to review the draft, and written comments were obtained from New Jersey. Following these visits, a draft evaluation strategy incorporating comments received on the goals and objectives was prepared and distributed to the participating states and the Corridor Coalition for review in the spring of 1999. Additional comments were received, the evaluation strategy was modified accordingly, and Corridor Coalition sign-off was obtained. Once the Corridor Coalition concurred with the evaluation strategy, a final evaluation strategy document was prepared and submitted to FHWA.

2.2 Evaluation Test Plan

A draft evaluation test plan was developed in the fall of 1999. The draft evaluation test plan was distributed to New York State, and a site visit was conducted to review the draft and develop a data collection plan and schedule. The draft was prepared after the Corridor Coalition had accepted the recommendation to focus the evaluation effort on New York State; hence copies of the draft were not distributed to the other states. The draft was revised based on comments received and submitted to the Corridor Coalition for review and sign-off. This was obtained in the fall of 1999, and the final test plan was submitted to FHWA in December 1999.

2.3 Baseline Data Collection

Baseline data for the evaluation was collected during a site visit in March 2000. Interviews were conducted with agency staff involved with motor carrier credentialing activities to document current practices. Information was collected about the following motor carrier credentials:

- International Registration Plan (IRP) – New York Department of Motor Vehicles
- International Fuel Tax Agreement (IFTA) – New York Department of Tax and Finance
- Highway Use Tax (HUT) – New York Department of Tax and Finance
- Single State Registration System (SSRS) – New York Department of Transportation.

In addition to the staff interviews, New York State provided extensive information on budgets, work volumes, procedures, and other background material on the credentialing processes and requirements.

2.4 Industry Survey

As part of the baseline data collection, a meeting was held with the New York State Motor Truck Association The intent of the meeting was to obtain baseline information on the time commitment and costs

of complying with New York's credentialing requirements from several carrier representatives who had been invited to attend by the association. However, during the course of the meeting, the Motor Truck Association offered to distribute a baseline data survey to all members. The state agreed that this would provide much beneficial information on current costs to industry, potential savings, and most importantly, on industry concerns that will need to be addressed to ensure the success of the electronic credentialing project.

An industry baseline data survey was developed and field-tested in the spring of 2000 with member companies and staff from the Motor Truck Association. The survey was then distributed to the Motor Truck Association members, with completed surveys returned in the fall of 2000. Approximately 400 surveys were distributed, and 57 completed surveys were returned.

2.5 Project Impact Data Collection and Analysis

Data on project impact was collected during two site visits. The first site visit in March 2000 involved interviews with the project management team and the collection of additional information on the status of the project. The second site visit in June 2000 involved interviews with the project test team, representatives from the New York State Motor Truck Association, and the motor carrier involved in the proof-of-concept test.

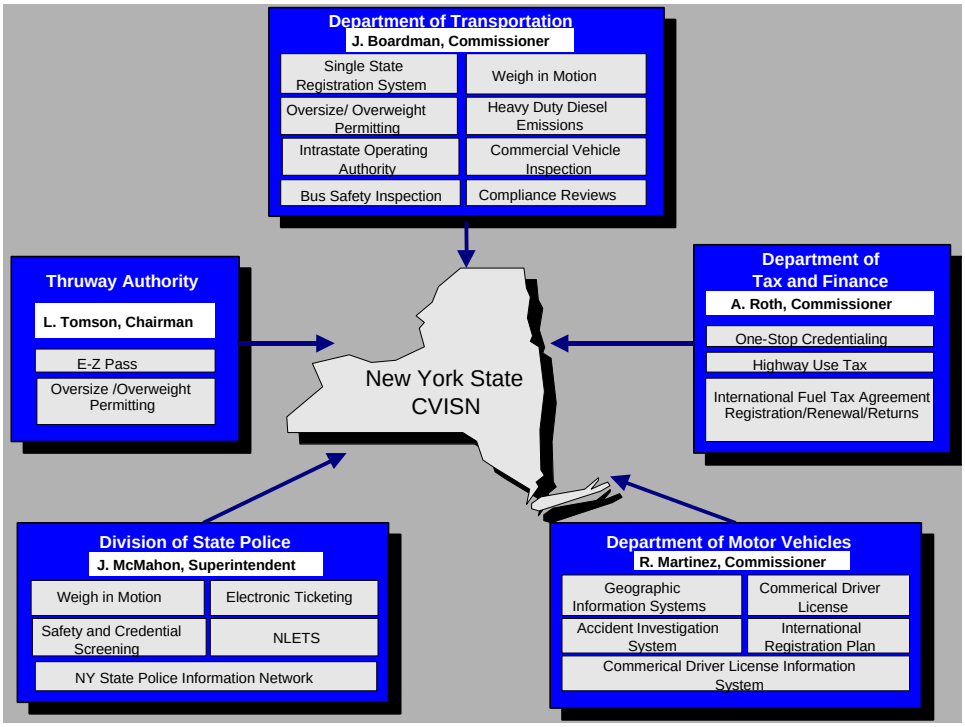
A draft final report was completed following the second field visit and submitted t to New York State for comment and review in July 2001. The final draft report was then submitted to the I-95 Corridor Coalition in August 2001 for comment and review. This report incorporates the comments received from these reviews.

3.0 New York State's Motor Carrier Program

3.1 Motor Carrier Agencies

New York State's motor carrier program includes the departments of Transportation (DOT), Tax and Finance (DTF), and Motor Vehicles, the Division of State Police, and the Thruway Authority. Figure 3.1 shows the agencies involved in the motor carrier program and each agency's specific program responsibilities.

Figure 3.1 New York State Motor Carrier Program



3.2 Program Management

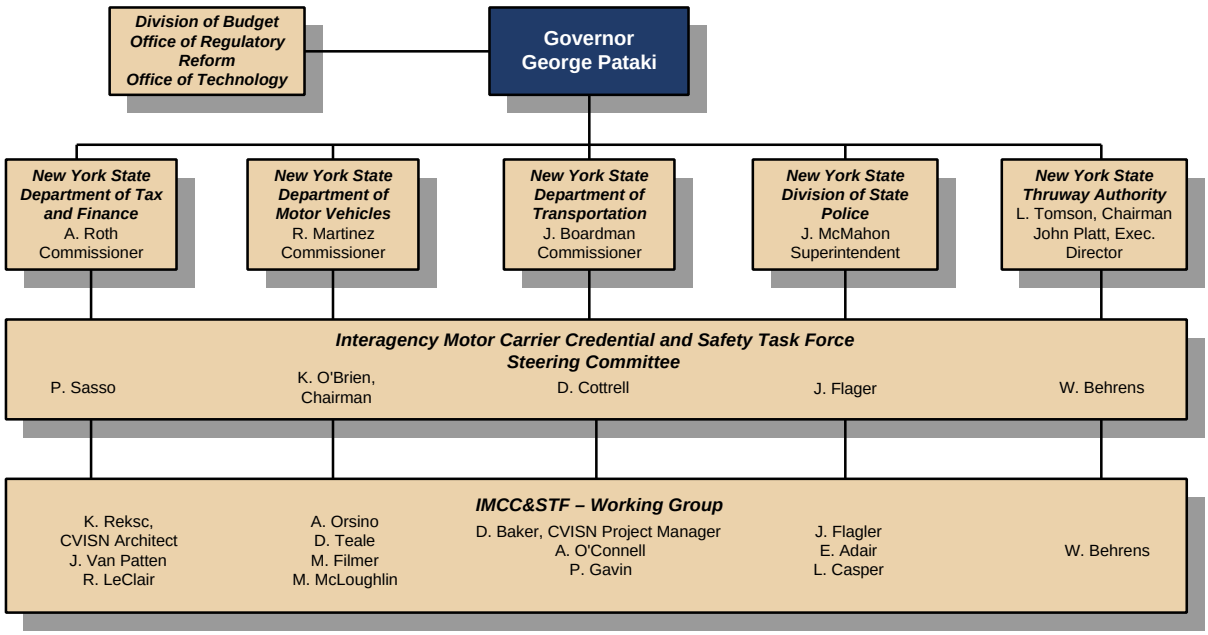
A steering committee composed of senior managers from each agency involved with the project has been established to provide policy guidance and oversight to New York's ITS/CVO program and to the state's CVISN project. A working group composed of line managers and senior and technical staff from each agency has been developed to oversee technical development and deployment of ITS/CVO systems and to

manage the CVISN project. The CVISN project manager is from the DOT, and the state's CVISN architect is from DTF.

Management of the I-95 funded electronic credentialing project uses the organizational structure described above. The state's CVISN architect is the project manager for the project, but the project is included in the overall ITS/CVO program and CVISN project and thus is under the supervision of the CVISN project manager. The working group provides technical staff from each involved agency to support the project.

The electronic credentialing system will be housed and supported by DTF. The DTF Project Manager (CVISN Architect) is the lead development person for the project. The New York State Motor Carrier Program is shown in Figure 3.2.

Figure 3.2: New York State Motor Carrier Program



4.0 Current New York Credentialing Process Flows

New York State's long-term plan for the electronic credentialing project is to have three state agencies issue four credentials, as summarized below:

- *Department of Motor Vehicles (DMV) – International Registration Plan (IRP):* Interstate carriers selecting New York as their base state of operations submit an annual application listing all states traveled in and miles traveled per state. New York then calculates and collects a lump sum registration fee, which is, in turn, apportioned and remitted to the states listed on the application. The apportionment is based on miles traveled per state and each state's registration fees. Carriers are provided with a cab card and an apportioned plate.

- *Department of Tax and Finance – Highway Use Tax (HUT):* All carriers that operate in New York, irrespective of their base state, are required to pay the HUT, a weight/distance tax. HUT permits are issued in three-year series, e.g., 1-Jan-00 – 31-Dec-02, and a carrier may receive a permit any time during a series. However, permits are valid only during a series, and all expire on the same date. A carrier may receive a permit six months before the end of a series but will be required to renew that permit when the series ends. Renewals are submitted at the end of a series. The state processes 550,000 to 600,000 renewals each renewal period for 55,000 to 60,000 carriers. At the end of a renewal period there are approximately 90,000 active carriers and 850,000 active vehicles. During a series, the state processes permits for more than 100,000 carriers and more than 1 million vehicles.

- *Department of Tax and Finance (DTF) – International Fuel Tax Agreement (IFTA):* As with IRP, interstate carriers selecting New York as their base state submit an annual application. New York then issues two IFTA decals to be placed on the side of the power unit In addition; carriers submit quarterly payments of fuel tax to New York's Regional Processing Center. IFTA is a carrier-specific program. An annual renewal consists of 8,000 to 9,000 active accounts and approximately 85,000 vehicles.

- *Department of Transportation (DOT) – Single State Registration System (SSRS):* For hire motor carriers intending to operate interstate are required to obtain operating authority from the Federal Motor Carrier Safety Administration (FMCSA). Once FMCSA has issued the interstate authority, a carrier selects a base state of operations to register its authority for all states of travel. For carriers selecting New York, a completed application must be filed along with a copy of the interstate authority, proof of public liability insurance, and the appropriate fees. Carriers are required to file for renewals once a year, although carriers may add vehicles throughout the year. SSRS is carrier specific.

4.1 IRP Process Flow

DMV processes a variety of IRP credentials applications, including annual renewal, temporary operating authority, and vehicle additions and deletions. Applications are received by mail, fax, and walk-ins (truckers who come to the DMV office in Albany with an application in hand). DMV staff estimated that approximately 50 percent of all applications need to be returned to the carrier for corrections or additional information. Corrections can also be handled by telephone. IRP applications are processed in Albany at DMV headquarters. If a carrier requires personal attention or assistance, the carrier is required to travel to DMV headquarters.

DMV mails IRP renewal notifications to carriers 45 days in advance of the expiration date. Carriers may also download the forms from the Web site to be filled out and mailed in. Carriers can also get temporary authority (30 days) simply by filling out the forms and faxing them to DMV. Approximately 90 percent of all applications are mailed to the DMV. Occasionally, new applicants will walk in with completed applications. Once an application is received the process is as follows:

1. DMV employee manually reviews each application and supporting documentation, such as Form 2290 Heavy Vehicle Use Tax, and proof of insurance documentation.
2. DMV employee manually reviews carrier's file to make sure that what is on file agrees with the submitted paperwork.
3. DMV employee contacts carrier via telephone to resolve any issues, obtain additional information, or to request that the carrier make corrections.
4. Once all information is complete, a DMV employee enters information into the IRP system for processing and requests an invoice for each application.
5. IRP system produces carrier invoice in either batch or immediate mode.
6. DMV employee manually reviews each invoice and stuffs invoices into envelopes to send to the carrier along with any requests for missing or additional information.
7. Carrier returns payment to DMV, mail or hand-carry.
8. Paperwork and payment are manually reviewed and the request to print the cab card is submitted.
9. Permits are printed by IRP system, then mailed to carriers or given to carriers who come to the DMV in Albany to pick up their cab card.

New York has implemented a staggered IRP registration system, so applications are processed throughout the year. IRP staff estimated that processing an application takes between 30 and 45 minutes, depending on the amount of additional information required, and that 10 to 20 applications are processed per day per person. The number of applications processed is dependent on the volume of walk-in traffic. The New York IRP office currently has 23 people on staff.

4.2 HUT Process Flow

There are three methods by which HUT applications are submitted to DTF.

4.2.1 Method 1 – Direct Mail from Taxpayer (Motor Carrier)

1. DTF receives applications via mail from taxpayers.
2. Batches of applications go to a DTF reviewer.
3. DTF reviewer checks for completeness and deposits the remittance.
4. The DTF reviewer checks whether the application is from a known carrier or a New York corporation. All applications are checked to ensure that each corporation and the accompanying application are valid. The reviewer can access the department that handles corporations for valid names. If an out-of-state corporation seeks protection in New York, it must register in New York.
5. A DTF employee enters new carrier accounts into the TID (Taxpayer Indicative Data) system. If the carrier is already known as a taxpayer in New York, then a new profile is created. If the carrier is already known, the following are checked:
    a. HUT, to determine whether they owe anything (i.e., filed all returns)
    b. Accounts receivable, to determine if all HUT assessments have been paid.

If the account shows an outstanding balance, the carrier is contacted by phone. If the outstanding balance cannot be resolved over the telephone, a written notice is sent requesting additional information or the application be returned with an explanation.

For applications that are correctly completed, require no additional information, or do not have an outstanding account balance, the procedure continues as follows:

1. DTF employee verifies checks (payments) and applications against each other.
2. Checks are deposited.
3. Applications are batched and sent to data entry staff.
4. Data entry staff key and return the applications.
5. An application batch run at night produces cab cards and computer output.
6. Output is matched to each permit and a sticker that is to be placed on the vehicle.

7. Sticker and permit are mailed to the carrier.

4.2.2 Method 2 – Hand Delivery

Carriers walk into one of the 12 district DTF offices and hand deliver the application and the supporting documentation.

The same review, checks, and verification are done with or without intervention from Albany.

4.2.3 Method 3 – Private Service Bureau

New York State works with several private service bureaus that are authorized to issue temporary permits.

The private service bureaus have access to a database that is updated each night to verify the information supplied by the carrier.

If a carrier is not in the database, the private service bureaus can call in and request that a temporary permit be issued.

Private service bureaus have a carrier contact DTF in Albany if the computer check of the application submitted by the bureau(s) results in a denial or a request for an address change.

For applications that are successfully screened, the private service bureau issues to the carrier via fax a 30-day temporary operating authority.

Private service bureaus submit to Albany on a daily basis faxes for every permit they issue and payment for every permit that they issue.

Documents are batched and sent to data entry.

Permanent credentials are mailed by the state to the carrier.

4.3 IFTA Process Flow

The IFTA process flow is similar to the HUT process flow but uses a different legacy system. New York operates the Regional Processing Center where both applications (renewals, new accounts, additions and deletions) and quarterly tax filings are processed. The IFTA license and decals are renewed on an annual basis.

4.4 SSRS Process Flow

New York services about 5,400 accounts per year, with credentials renewed on an annual basis. The DOT headquarters in Albany is the only site in the state that processes and issues credentials, so carriers are required to mail, fax, or hand deliver applications to the central site. SSRS staff estimated that 5.5 applications are processed per hour, depending on the amount of additional information that is required. Approximately 50 percent of staff time is spent manually verifying information provided for renewals. After the information is manually verified, it is checked against the information in the system for the carrier (New York uses the SSRS system developed by Illinois as a legacy system). The renewals fill out forms RS-1 and RS-2 (fees). The fees are also manually checked. A supplemental form RS-4 is used if the carrier later decides to add a vehicle or a state. After the manual check is completed, the information is entered into the system. For new carriers, SSRS staff reported that most will call to find out what information they will need. The SSRS application process flow is as follows:

1. Motor carrier contacts the FMCSA with intention to operate in interstate commerce.

2. FMCSA sends application package to carrier (package includes information on SSRS, a list of participating states, addresses, and phone numbers).

3. Carrier selects as a base state the state in which it maintains the principal place of business, or if this is not a participating state, the state in which it will operate the largest number of vehicles during the next registration year.

4. Carrier receives interstate operating authority from FMCSA.

5. Carrier contacts the base or participating state to register operating authority for all states of travel.

6. If the base state is New York, the DOT is the agency that administers SSRS. The New York DOT mails to the carrier the appropriate application forms (RS-1 and RS-2, and an information sheet explaining filing requirements).

7. Carrier completes all forms and gathers the appropriate information:

   RS-1 – Application Form
   RS-2 – Calculation of Fee Amounts
   Copy of interstate operating authority
   Completed Agent for Process Form (BOC-3)
   Proof of insurance (form BMC91 or BMC91X).
   Guaranteed funds (certified check or money order) in amount equal to the fees levied by each state of travel for the number of vehicles traveling in those states.

8. DOT receives and manually checks that the application is complete and has the following:

   A unique carrier's MC number
   Guaranteed funds that match the calculation of fees (RS-2)
   Copy of interstate authority
   Local process agent
   Proof of insurance. If proof of insurance is missing the carrier is notified that the application will be held for five days before it is returned.

9. Completed applications are approved and processed.

10. Carrier information from the RS-1 and RS-2 forms is entered into the SSRS database network.

11. Within 30 days of filing an application, a receipt is issued to the motor carrier along with a supplemental application for the carrier to use in the course of the registration year should the carrier want to add vehicles or states.

5.0 New York State's Electronic Credentialing Project

5.1 Project Scope

New York's long-term goal for electronic credentialing is to establish an electronic "One-Stop-Credentialing and Registration " system (OSCAR) that will enable motor carriers to apply for credentials using a Web-based solution. OSCAR will have the following features at full development:

- Single point of entry Web-based front end that includes all credential application forms and can be accessed by motor carriers via Internet
- IRP, IFTA, SSRS, and HUT
- Planning for future enhancements that will include
  - Oversize/overweight permits
  - Intrastate authority
  - Commercial vehicle licensing
  - New York City permits
  - Multijurisdictional permits
- Links to agency home pages and information about credentials requirements in New York State and a help page on how to use OSCAR
- Interfaces to state legacy systems to enable end-to-end processing of credential applications
- Electronic funds transfer capabilities
- Appropriate security protections for transmission of proprietary data
- Ability to check legacy systems to identify potential problems with a carrier's application such as outstanding quarterly fuel tax payments
- Back-end interfaces with national clearinghouses and databases.

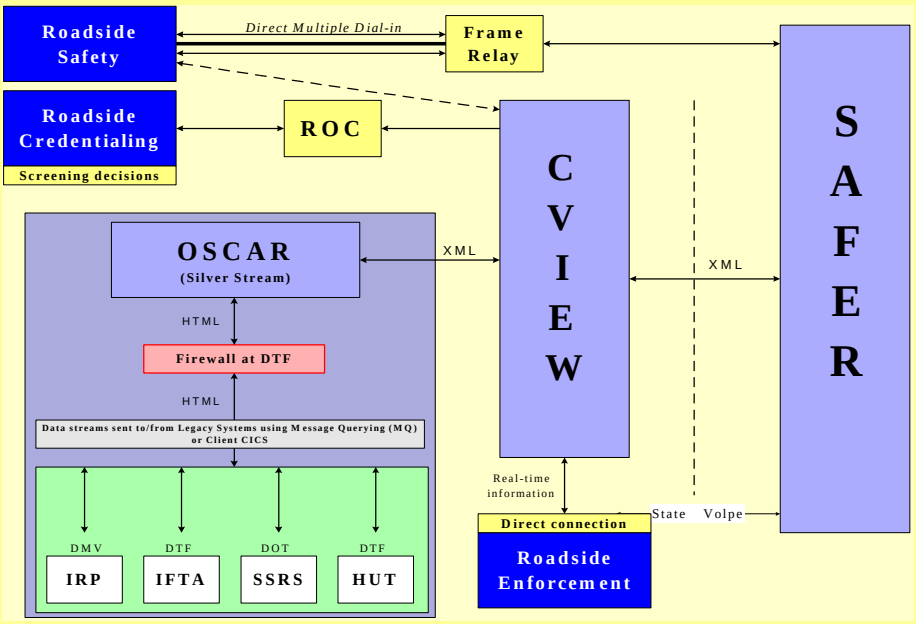
The electronic credentialing project being developed using the I-95 Corridor Coalition's funding is intended as a "proof-of-concept" for OSCAR. Through this proof-of-concept project, New York State will test the following:

- Technical issues related to the development of a Web-based solution for electronic credentialing
- Technical issues related to the development of legacy system interfaces
- Standards needed to support electronic credentialing
- Technical soundness and viability of New York's electronic credentialing architecture
- Costs, for both development and maintenance, associated with building an electronic credentialing system
- End user requirements and customer satisfaction.

The goal of the project is to enable a motor carrier to submit credentials applications electronically to OSCAR, which will then route the applications to the appropriate legacy systems. The motor carrier will receive notification that the applications have been processed and approved and will be able to print temporary credentials on-site. Once this has been accomplished, the proof-of-concept will be completed.

New York's electronic credentialing project has been incorporated into the State's ITS/CVO Business Plan and the CVISN Project Plan. The proof-of-concept project funded by the I-95 Corridor Coalition is the initial step in developing OSCAR. At full development, OSCAR will be the cornerstone system supporting New York's CVISN development and deployment efforts. New York's CVISN conceptual design is shown in Figure 5.1, which portrays the integration of OSCAR into the CVISN architecture. As is shown, OSCAR will be developed to serve as New York's Credentialing Interface (CI).

Figure 5.1: CVISN Conceptual Design



For the proof-of-concept, New York State elected to test all four required credentials, IRP, IFTA, SSRS, and HUT, with one carrier. In addition, the state has worked closely with the New York State Motor Truck Association in developing the overall ITS/CVO program and is planning to recruit a small group of motor carriers from the Motor Truck Association to serve as a test group. The test group will further test OSCAR functionality once the proof-of-concept has been successfully completed. This will help New York State evaluate not only the technical issues involved with developing electronic credentialing systems, but also and more importantly, end user needs and customer satisfaction with the proposed system.

Specific products to be developed through the project include a Web-based front-end solution that includes all applications needed to obtain IRP, IFTA, HUT, and SSRS credentials. This front end includes edit checks that will help motor carriers identify incomplete applications, or incorrectly completed fields, before the applications are submitted for processing. This capability should help reduce application error rates and decrease processing requirements.

5.2 Technical Architecture and Information Flows

OSCAR is being developed as a CVISN compatible system following the National ITS Architecture Guidelines Development is being done using a Silverstream application server designed for Java- and HTML-based applications. OSCAR has been developed using HTML format for messaging, but will be developed to accommodate XML messaging. New York at present does not have plans to incorporate EDI applications into OSCAR. MQ and CICS are currently used for exchanging data. All applications will be secured, and only authenticated users may run the applications. Participating motor carriers will be required to register to use OSCAR and will receive a password. The New York State Department of Tax and Finance has developed a registration authentication system for businesses that is available for use by OSCAR for developing a user registration and authentication process.

The proposed information flow (as of March 1, 2001) for OSCAR is shown in Figure 5.2. The processes will be automated, and information will be processed, as follows:

1. A customer will sign onto OSCAR and submit an ID and password. If validated, the customer will open the menu page and select the desired transaction. If not validated, OSCAR will return an error message to the customer specifying the problem.

2. Once validated, the customer will then provide high-level information on a particular vehicle, and will receive an automated response indicating which credentials are needed for the vehicle.

3. OSCAR will automatically retrieve business data about each customer (e.g., address, corporate officers). If no account exists, the customer may enter this data. This data needs to be entered only once, and will be provided to each legacy system interfaced with OSCAR. Currently, customers must provide this data for each credentials application.

4. The customer will verify this response and then enter the high-level information for each jurisdiction in which the vehicle will travel or will enter detailed vehicle information.

5. If the customer provides jurisdiction information OSCAR will check this information for completeness. If additional information is required, the customer will receive an automated response requesting the additional information.

6. Once the jurisdiction information is complete, the customer then enters detailed information on the vehicle

7. OSCAR will then generate a query to determine if additional vehicles are to be registered. If the customer responds yes, the same process will be repeated for each additional vehicle.

8. When all vehicles are entered, the customer then is able to access a credentials page to check all entries and ensure that each application is complete and accurate.

9. Once the customer verifies the accuracy of each application, the data is submitted to the appropriate legacy system for processing.

10. If the transaction is approved, the customer may print the credential. If information must be provided physically (e.g., HVUT Form 2290), the printed credential will be temporary, and the customer will have a fixed period of time (30 days) in which to provide the information and obtain a permanent credential.

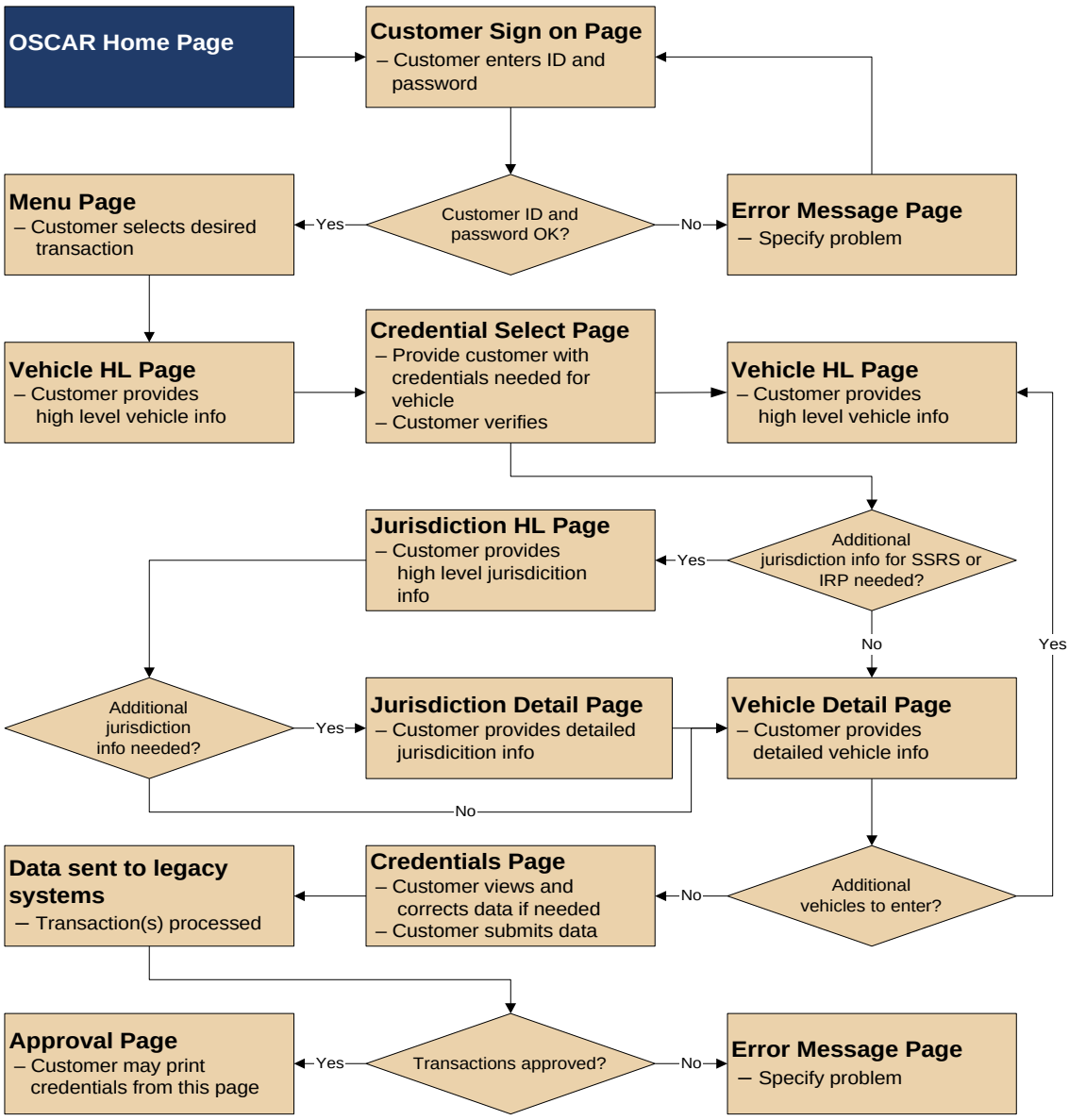
11. If the transaction is not approved, an error message specifying the problem is generated and sent to the customer for resolution.

The corresponding screens developed for OSCAR, as of year-end 2000, are summarized in Table 5.1.

Table 5.1 Summary of OSCAR Screens

Screen Subject	Screen Function
OSCAR Home Page	Links to New York State motor carrier agencies Links to one-stop credentialing information pages (Au: Okay to delete? seems to repeat)
Customer Sign-on Page	USDOT/MC, Tax ID numbers, PIN
Carrier Information Page	Company name, contact person, address, telephone, e-mail Instruction sheet
New Officer Page	Information on name and address of new officer
Vehicle Data Page	Fleet type, commodity class VIN Owned/leased For hire Number of axles, GVW
Jurisdiction Selection Page	Listing of states and provinces
Mileage/Weight Page	Mileage traveled, GVW, and number of vehicles by jurisdiction
Vehicle Details Page	Make and year Insurance Date of purchase and price Title information
Listing of Credentials Applications Page	Links to applications for all credentials obtainable through OSCAR
IFTA License Application Page	IFTA license application, representative of application forms available through OSCAR

Figure 5.2: OSCAR Information Flow



5.3 Schedule

Development work on OSCAR has been underway since 1997. The project was delayed due to the departure of the original system architect and lead developer, although the position has now been filled. The proof-of-concept was successfully completed in May 2001, and additional functionality will be added, as shown in Table 5.1.

Table 5.2 OSCAR Development Schedule

Release Number	Functionality	Estimated Completion Date
2.1	Add vehicle to existing fleet, bill supplement, and create voucher. Transfer license plates (FOT 8 Proof of Concept)	Achieved May 2001
2.1.1	Credit card acceptance for OSCAR payments, includes financial OSCAR	Live pilot September 2001
2.1.2	Amend vehicle and add jurisdiction	Live November 2001

Additional functionality planned for OSCAR, for which no live pilot date has been established, includes the following:

- Create new account and new fleet
- Interfaces with SSRS and IFTA
- Add taxpayers and check for outstanding liabilities
- Connections to SAFER and national credentialing (IRP, IFTA) clearinghouses
- Full Web access to all carriers.

5.4 Budget

New York received a grant of $577,910 for the project from the I-95 Corridor Coalition. This funding is to be used as follows:

Table 5.3 Use of I-95 CC Funds

Project Component	**Cost**
Equipment: NT server, PCs for developers and system users, laser printers, DB2 database software, CICS NT, Silverstream application server	$133,750
Application development (contract programmers): application analysis, on-line GUI prototype, relational database prototype, functional credentialing system prototype, CACI IRP and IL SSRS testing, application testing	$429,760
Development and end user support and training	$ 14,400
Total cost	$577,910

6.0 Evaluation Findings

The goals and objectives developed for the evaluation anticipated the development of credentialing systems in five states. To this end, the goals and objectives are oriented toward evaluating production level systems rather than a proof-of-concept. Given that the scope of the evaluation effort ultimately was scaled back from the original plan, the findings are qualitative rather than quantitative. This section of the report presents the findings from the evaluation effort.

6.1 New York State's One-Stop Credentialing and Registration (OSCAR) Proof-of-Concept Project

The proof-of-concept project was successfully completed in May 2001. A carrier was able to submit a credentials application and print out a temporary IRP operating permit in the carrier's home office. The state was able to update the IRP, IFTA, HUT, and SSRS legacy systems and process the application. During the test, the State and carrier were also able to transfer license plates, a level of functionality not initially included in the proof-of-concept test plan.

6.2 Meeting Customer Needs – Industry

As is noted in the results of the New York State motor carrier industry survey, the OSCAR project meets the needs of the motor carrier industry. The results showed that the motor carrier industry is receptive to electronic credentialing and that the industry foresees benefits in timesavings, accuracy of data, and improved efficiency of services. Most importantly, the results of the survey indicated that carrier size will not be a factor in customer acceptance of credentialing OSCAR is accessible to all segments of the motor carrier industry and can provide benefits to small as well as to large carriers. This finding was reiterated during discussion with representatives of the New York State Motor Truck Association.

The motor carrier company involved in the testing of the proof-of-concept (a leasing company with approximately 500 power units) indicated strong support for OSCAR. Specifically, the company believes that using OSCAR will save time, improve employee efficiency, and improve customer service (customers will not need to wait for the credentials needed to get a truck on the road). The level of company support for OSCAR is reflected in the fact that this company obtained its first credit card in 40 years of business so that it could participate in the proof-of-concept testing.

6.3 Meeting Customer Needs – State Personnel

State personnel involved with testing the proof-of-concept indicated that OSCAR met their expectations. The system is user friendly and worked as expected. More importantly, through the proof-of-concept project, the state has identified "snags" in existing business processes that will be reengineered through the development of OSCAR. An additional sign as to how well OSCAR has met state expectations is that the scope of the project has been expanded to include in-state licensing programs, renewals, and registration. (Au: please check deletion, it doesn't seem to belong)

6.4 Meeting the Objectives of the I-95 Corridor Coalition

Objectives of the I-95 Corridor Coalition is to provide a source of funding that enables members to do the following:

- Leverage additional resources
- Deploy new technologies and systems.

The New York State Field Operations Test (FOT) is a significant success for the I-95 Corridor Coalition's CVO program. The overall budget for the proof-of-concept included a significant in-kind contribution of

state personnel resources, as well as additional "in-kind" contributions of staff time, thus meeting the state goal of leveraging additional resources. In addition, OSCAR, once deployed at a production level, will serve as the core credentialing system in support of New York's CVISN deployment. The phased development approach adopted by New York for developing OSCAR also will enable the State to expand functionality of the system over time to incorporate additional credentials (for example, linkages to oversize and overweight permitting). This successfully meets the goal of deploying new technologies and systems.

6.5 Program Management Structure

The management structure adopted for the New York Motor Carrier Program has enabled the state to successfully address the institutional issues. New York's steering committee is composed of senior managers empowered to make decisions on behalf of their agencies. The working group contains the key technical and program personnel who have the experience needed to successfully implement projects such as OSCAR. In addition, the state has established a close working relationship with the motor carrier industry and has obtained industry support for projects such as OSCAR.

6.6 Comparison of Evaluation Findings and Preliminary Evaluation Goals

The initial evaluation strategy developed for FOT 8 included five goals and supporting objectives, measures of effectiveness, data sources, and analytical techniques. The goals were developed in draft format and submitted to each participating state and the I-95 Corridor Coalition for comment and review. Once a consensus on the goals was reached, the final evaluation strategy was prepared.

The goals developed anticipated an evaluation of fully implemented electronic credentialing systems in five states. As noted in Section 1.0, the scope of the evaluation effort was substantially changed due to implementation problems encountered by most of the participating states. This notwithstanding, the evaluation findings indicate that the New York State proof-of-concept project did successfully meet four of the five goals initially developed from a qualitative standpoint. Although the quantitative data anticipated in the original goals was not available, the qualitative findings indicated the quantitative data would be generated as the OSCAR system is brought into full development and is operating as a production level system.

A comparison of evaluation findings with the proposed evaluation goals is shown in Table 6.1.

Table 6.1: Preliminary Goals and Evaluation Findings

Preliminary Goal	Measure of Effectiveness	Evaluation Finding
To determine changes in the operation efficiency related to ITS/CVO electronic credentialing	Reduced time and costs incurred by industry in credentialing efforts	Although quantitative data supporting these MOEs was not available, anecdotal information supports the finding that electronic credentialing will reduce time and costs for New York State and the industry. This finding was documented during interviews with the test team and the baseline survey of the motor carrier industry.
	Reduced time and costs incurred by state(s) in credentialing efforts	
To determine user acceptance of electronic credentialing technologies and services	Users' and states' perceptions of reliability, timeliness, efficiency, and usefulness of systems	Based on interviews with the test team and the industry survey, this finding is supported by anecdotal information. The survey results demonstrated that electronic credentialing was accessible to all segments of industry (large, medium, and small carriers). Test team interviews indicated support for continued deployment of electronic credentialing capabilities.
	Reduced costs spent in credentialing efforts by industry and the states	
To document the costs associated with the deployment of electronic credentialing technologies and services	System development and operating costs by phase of the program	The only data available on actual costs was for the proof-of-concept, as detailed in Section 5.0 of this report. New York State has proposed budgets that allocate resources for further development efforts, but no actual data exists. Information supporting this particular goal is not available.
To assess system functional performance	Comparison of speed, accuracy, memory, and versatility with functional specifications	Data is not available at this time.
To assess institutional issues related to electronic credentialing implementation and operation	Institutional issues, successes, and failures	New York State has successfully demonstrated the type and the level of support needed from senior managers, program managers, and technical staff and from industry for an electronic credentialing project to succeed. The change in evaluation scope can be viewed as a valuable lesson learned, as the other FOT 8 states had to postpone or delay implementation activities due to inadequate support from senior management.

7.0 Conclusions and Recommendations

7.1 Conclusions

7.1.1 Obtain Up-Front Management Support

The I-95 Corridor Coalition's FOT 8 Electronic Credentialing Project demonstrates the importance of obtaining management buy-in and support for implementing ITS/CVO projects. Those states that had not obtained support from senior management at the time the I-95 funding was awarded experienced significant delays in obtaining technical staff resources and budget support for implementing their FOT 8 projects and found that FOT 8 was preempted by other priorities. New York State obtained this support, and was able to obtain a commitment of budget funds, staff, and technical resources to implement the project.

7.1.2 Develop a Detailed Project Plan and a Flexible Schedule

New York State had developed a detailed project plan that included a technical architecture, a budget, and an estimate of resource requirements. This enabled New York to identify the types of technical staff, both state personnel and contractual services, needed to implement FOT 8, and also provided a baseline against which to measure progress. When unanticipated delays occurred (for example, the system architect departed state service a little more than halfway through the project, creating a delay in its development while a replacement was recruited and hired), the state was able to adjust schedules and project activities accordingly without compromising long-term project success.

A key component of this up-front planning is that New York not only identified which technical resources would be needed to complete the project, but also was able to identify the contractual vehicle(s) that would be used to obtain these. In New York's case, the State was able to use contractual programmers available on pre-existing task order contracts. Thus, when the State obtained senior management approval of the project plan, the necessary vehicle for procurement of technical resources was in place and available.

7.1.3 Obtain Customer Input on System Design and Functionality

New York has established a close working relationship with the motor carrier (industry, and received extensive industry support during the development of the proof-of-concept. This is reflected in the fact that the state brought the industry in as a partner early in the process. The New York State Motor Truck Association was asked to recruit a company to participate in the proof-of-concept, and both the association and the company have been involved in requirements analyses and testing. The Motor Truck Association is also recruiting a test group of carriers to help test additional development, thus ensuring that OSCAR is user friendly to the motor carrier industry. In addition, the results of the industry survey document that OSCAR is accessible to all motor carriers operators, large, medium, and small, and addresses a major need for industrywide, long-term, end-to-end electronic credentialing. This will help ensure that OSCAR is actually used and that both the state and the industry will realize the intended benefits of the system.

New York's success demonstrates the importance of involving the customer in the system design and development process to ensure that the system is built to meet customer needs.

7.1.4 Use a Phased and Iterative Approach to Development

New York has developed OSCAR so that the proof-of-concept demonstrates the technical feasibility of electronic credentialing and serves as the initial functional application of what will be developed as an end-to-end system. New York is in turn planning a phased development process for OSCAR, with additional functionality added in "chunks." This approach to the development and deployment of OSCAR will enable the state to identify and address stakeholder issues proactively, which in turn will help to ensure that institutional issues do not derail project success. New York will also be able to incorporate lessons learned

from each phase into future deployments. Each phase in the development of OSCAR also expands the test group of participating motor carriers, which helps ensure that end-user needs are addressed and that the system is developed to meet functional requirements. This approach to system development offers the following benefits:

- Each build can be fully tested and integrated prior to adding the next level of functionality.
- Each build can be adjusted to accommodate changes in schedule or available resources. Overall system development can be better managed and costs controlled more effectively, which will help maintain support from both management and industry.
- The iterative nature of New York's system development process enables the identification and resolution of stakeholder concerns prior to system deployment, and ensures that the system is designed to meet end-user requirements, both state and industry.
- As new technologies emerge (XML, for example), new builds can be adapted to incorporate these.

7.1.5 Obtain the Services of a full-time System Architect

New York hired a full-time system architect for OSCAR. The system architect is a state employee and is dedicated on a near full-time basis to supporting the project. This helped ensure continuity in the provision of technical services and enabled the system architect to work with other agencies and develop an understanding of institutional and technical constraints facing these agencies as well as a detailed understanding of business processes.

7.2 Recommendations

7.2.1 Evaluate OSCAR at Full Development

The evaluation team believes that an evaluation of OSCAR at full deployment would be of benefit to the I-95 Corridor Coalition, in particular, and to the ongoing development and deployment of ITS/CVO in general. This recommendation is based on the following reasons:

- The proof-of-concept project has been highly successful and will serve as the cornerstone for the development of a production level credentialing system. Continued documentation of the development and deployment of OSCAR will enable other states to benefit from New York's efforts and lessons learned and will enable the system to be evaluated as a production level system.
- The findings of this evaluation are primarily qualitative in nature. Conducting an evaluation of OSCAR at full deployment would enable the collection of quantifiable cost and benefit data to facilitate more in-depth cost-benefit and other analyses. Having quantified data and analyses will help other states in their efforts to obtain industry support and legislative approval for funding.
- The evaluation strategy has already been developed, including measures of effectiveness and what data will be needed to complete the evaluation. Some additional baseline data that documents current costs to the state and the industry would be needed, but much of the baseline information has already been collected. This will reduce the costs of evaluating the system at full development.
- Evaluation of OSCAR at full development will also enable a more detailed technical assessment of system performance and the documentation of CVISN Level 1 compliance.

7.2.2 Continue OSCAR Development and Deployment for Additional Credentials

The evaluation team strongly recommends that New York State continue to provide the technical and financial resources necessary to continue the development and deployment of OSCAR as a production level electronic credentialing system. The proof-of-concept has successfully demonstrated the technical feasibility of OSCAR. Interviews with the test team as well as the results of the industry survey indicate that OSCAR will address the needs of the New York State government and the New York State motor carrier industry, specifically:

- Improved efficiency of government services through e-commerce
- Reduced administrative burdens and costs for the motor carrier industry through electronic credentialing
- Improved customer service for the motor carrier industry
- Improved accuracy of data, leading to fewer credentials applications processing errors, improved records for both the state and the industry, and improved ability to ensure compliance with credentialing requirements and fee and tax payments.

New York State has also successfully addressed the institutional issues related to the development and deployment of OSCAR. The level of interagency cooperation remains high, and the agencies involved with OSCAR remain committed in their support. In addition, the industry strongly supports the development and deployment of OSCAR. This high level of continued stakeholder buy-in and support would help ensure the long-term success of the project.

7.2.3 Continue OSCAR Development and Deployment as a Core CVISN System

New York State has completed the FMCSA sponsored CVISN workshops and has developed a CVISN project plan. The CVISN project plan shows OSCAR being developed as the core electronic credentialing system in support of CVISN deployment in New York. The evaluation team recommends that New York continue the development and deployment of OSCAR as the core CVISN electronic credentialing system. This will help ensure that New York not only deploys a successful electronic credentialing system to serve the motor carrier industry, but will also enable the state to meet the roadside safety and interstate data exchange goals of the national CVISN program.
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