March 26, 1999

To: Dr. Joseph Peters, FHWA JPO

From: Mark A. Flak, SAIC

Re.:   IPAS Task Order #/008
        "Electronic Credentialing"

Attached is the finalized version of the Evaluation Strategy for the above project. The draft version was sent to the I-95 CC parties (and FHWA) in late December. Based on input and comments, slight revisions to the content and plan were made. The Strategy, however, continues to be oriented similar as the draft document. If you have any questions or comments, please call. Thanks.

cc: Ms. Amy Polk, JPL
        Mr. Rich Bolczak, Mitretek

150303

EVALUATION STRATEGY FOR THE

I-95 CC ELECTRONIC CREDENTIALING

PROGRAM

Prepared For: **I-95 CC CVO Committee**
                          Federal Highway Administration

Prepared By: SAIC

March, 1999

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EXECUTIVE SUMMARY

Introduction

Commercial vehicle operations (CVO) have a long evolutionary history along the 1-95 corridor. In 1996, the l-95 Corridor Coalition, with over 450 stakeholders, met in Philadelphia to discuss the focus and direction that CVO activities should take along the corridor. Through panel discussions and several group meetings, the I-95 CVO Program components were derived and field operational tests (FOTs) were created to meet the Program objectives. Under the credentialing area, FOT #8 (Electronic Credentialing) was developed. In the area of carrier safety, FOT #7 (Roadside Safety), FOT #9 (Electronic Screening), and FOT #10 (Safety Management) were created. In the carrier operations area, FOT #4 (CVO Traveler Information) was created. In 1997, RFPs were prepared and the FOTs awarded to qualified responders. This summary is aimed at the FOT #8 Program activities.

FOT #8 (Electronic Credentialing) Overview

The electronic credentialing field operational test (FOT # 8) will undertake the model deployment of electronic credentialing for commercial vehicles. The project will involve the development of state-specific electronic credentialing systems. The electronic credentialing element will primarily focus on the IRP registrations (although oversize-overweight (OS/OW) permitting will also be examined in several cases) and will enable motor carriers to register their vehicles electronically with state agencies or through third-party service providers. The intent of the I-95 CVO program is to incorporate available electronic credentialing software being developed through CVISN to meet the needs of the FOT #8 Coalition states or to develop in-house electronic credentialing capabilities for existing legacy systems.

The 1-95 Corridor Coalition's Electronic Credentialing project purpose is to test the implementation of procedures and technologies that will enable state agencies and motor carriers to streamline credentials administration and to share this information with other states and agencies within the state. This program will reduce costs and improve the efficiency of operations for motor carriers and the agencies themselves by enabling carriers to file credential applications electronically.

Existing/Planned CVO Programs in I-95 CC Area

Within the I-95 Corridor Coalition's business area, a number of projects are planned or underway that will have an impact on the findings and efforts of the "Electronic Credentialing" project. They include: CVISN (Commercial Vehicle Information Systems and Networks), SAFER (Safety and Fitness Electronic Records), FleetForward (FOT #6), Roadside Safety (FOT #7), Electronic Screening (FOT #9), and Safety Management (FOT #10).

Planned FOT #8 Program

The electronic credentialing field operational test (FOT #8) will examine the implementation of procedures and technologies that will enable state agencies and motor carriers to streamline credentials administration, reducing costs and improving efficiency of operations for motor carriers and the agencies themselves. Five states were initially members of the test. They included: Delaware, Pennsylvania, New Jersey, New York, and Massachusetts.

The current status of the FOT #8 program in each member state is as follows:

Massachusetts: Massachusetts proposes to field test an integrated system that would make credentialing transactions available electronically, over the Internet, to a majority of the commercial carriers in the Commonwealth. These transactions and data would be accessible by law enforcement personnel in the field. They plan to:

- Expand and integrate oversize/overweight permitting.
- Expand the automated driving record process for proactive use by the trucking industry;
- If feasible, automate the IFTA/IRP temporary permits; and
- If feasible, automate, expand, and integrate commercial registration renewals and amendments.

New York: New York proposes to develop an Internet-based CVO electronic credentials system that will provide commercial vehicle operators a single point of contact for credentials data submission to the DMV's IRP or intrastate commercial registrations, the DTF's IFTA and HUT permits and the DOT's single state registration and intrastate operating authority. The program would essentially develop an electronic "one-stop" credentialing program. They plan to:

- Contract with technical support to assess the utility of developing a "one-stop shopping" concept;
- Develop "one-stop shopping" concept/program; and
- Implement and test a "one-stop" credentialing program for the CVO in its area.

New **Jersey:** The New Jersey Department of Transportation Division of Motor Vehicles proposes to implement an Internet filing system for IFTA and IRP credentialing (tax and recap filing). The program would provide for on-line, real-time electronic registration of commercial motor vehicles. They plan to:

- Review the current project requirements with state officials and decide on a course of action; and
- If approved and backed by state officials, purchase and modify available hardware and software to develop the credentialing capability.

Pennsylvania: Pennsylvania proposes to develop and implement a system to facilitate electronic IRP filing via the Internet, to provide electronic filing capability of Pennsylvania Department of Revenue mileage reports to the PennDOT IRP processing system, to electronically image and store paper documents, and to provide electronic image access of documents to PennDOT service representatives. They plan to:

- Review the current project requirements with state officials and decide on a course of action; and
- If approved and backed by state officials, contract with technical support to provide software programming, system integration, and maintenance capabilities for the proposed course of action.

Delaware: Delaware has chosen to withdraw from the FOT.

Evaluation Coals and Objectives

Based on the input from the 1-95 CC Evaluation Team, it was felt that the evaluation goals should address, as a minimum, the following measures: user acceptance, system benefits, system costs, system performance, and institutional issues. In addition, the goals should have consistency with the goals and objectives of similar credentialing efforts part of the CVISN program. Based on these directives, the following goals and objectives for FOT #8, Electronic Credentialing, are outlined.

Goal #l: To determine changes in operational efficiency related to electronic credentialing.
- To determine improvements in motor carrier processes for the exchange of information regarding commercial vehicle credentials.
- To determine improvements in state agency processes for the exchange of information regarding commercial vehicle credentials between states and agencies within the state.

Goal #2: To determine user acceptance of "electronic credentialing" technologies and services.
- To determine user acceptance of the technologies and services by the motor carriers.
- To determine user acceptance of the technologies and services by the state agencies.

Goal #3: To document the costs associated with the deployment of "electronic credentialing" technologies and services.
- To document the costs state agencies can expect to incur for equipment, software development, legacy system interface, maintenance, training, outreach programs and other costs incurred during implementation and operation of the system.
- To document the costs motor carriers can expect to incur for equipment, software development, legacy system interface, maintenance, training, outreach programs and other costs incurred during implementation and operation of the system.

Goal #4: To assess system functional performance.
- To assess the ability of the system to meet functional operational requirements for speed, accuracy, memory needs, versatility, stability and reliability.

Goal #5. To assess institutional issues related to "electronic credentialing" implementation and operation.
- To assess issues relative to states' operation of system (public and private concerns).
- To assess issues relative to states implementation of systems (as compared to FOT states not providing systems) for public and private agencies/firms.
- To assess issues relative to motor carrier usage.

Preliminary Evaluation Strategy

The preliminary strategy was developed as a result of several meetings and discussions among the I-95 CC and SAIC Evaluation Team members. To evaluate the electronic credentialing program, a number of specific studies are proposed. It will be important, during the test, to assess and document the impacts assoicated with each states' operation of the developed electronic

system as well as the manual system that will continue in place during the FOT (and longer). The following overview presents the key aspects of these studies.

Time and Cost Logs

Goal I of the evaluation is aimed at testing the operational efficiencies and benefits gained with the electronic credentialing systems. To accomplish data collection for this goal, time/cost logs for the processes in each pilot state will be used. These time/cost logs will record the time and costs spent in the activities involved with vehicle credentialing that are impacted by each state's specific FOT #8 electronic credentialing program. They will be maintained by the CVO users (sample of CVOs from pilot states) and the state agencies responsible for processing the applications. The logs will document the time, volume of credential requests, and level of effort involved in all processes of preparing, recording, and submitting the credentialing applications under both the manual and the electronic credentialing process.

Surveys

A key component to the evaluation will be information collected from CVO users and state agency staff for the pilot states on the specific programs and their use, effectiveness, reliability, and perceived benefits. CVO users surveys/interviews are proposed to obtain inputs on the user acceptance issues of the CVOs planning to or actively using the system. Items to be addressed in the survey would include:

- Frequency in use of service
- Perceived impact or benefits of services
- Perceived satisfaction of timeliness, reliability, comprehensiveness, and usefulness of service
- Perceived value/worth of services

Agency surveys/interviews are proposed to solicit inputs on the user acceptance issues for the pilot agencies (i.e. Massachusetts MVD, New York DOT, etc.) actively planning to participate in the electronic credentialing program. Specific items covered during the survey/interview would include:

- Level of effort involved with the system
- Satisfaction with procedures for operation or maintenance of the system
- Staffing and resource requirements associated with 0 & M of the system
- Perceived benefits (including staff operations) received with the system
- Satisfaction with procedures and formats of information provided from system
- Satisfaction with reliability, timeliness, comprehensiveness, and usefulness of information received from the system
- Perceived value/worth of information received from the system

Cost Study

Goal 3 of the evaluation objectives highlights the cost-related and sustainability objectives of the program for each pilot state. From record logs, invoices, and other sources provided by the state system developers, an account and statement of project-related costs for each program and its implementation and operation will be defined. Key items in the costs will include:

development costs (including associated costs or estimates of pre-developed products or services). operations costs, and system maintenance costs. These costs will identify labor, direct costs, and other related costs to effectively define the costs to develop, operate, and maintain each specific system.

System Performance Logs

In goal 4, system performance issues are identified as system objectives. To document the system performance, logs defining the status of the system's operation in each pilot state will be maintained by the operators within the state agency and the CVO users. These groups will consist of the parties providing information to and receiving information from the individual electronic credentialing systems. In addition to serving as a measure of system performance for the evaluation objectives, the system performance data will be used to assist in explaining or defining other key findings from other studies conducted for the evaluation.

Case Study

Goal 5 of the evaluation goals is directed towards defining and outlining the institutional issues relative to the implementation, operation, and maintenance of the electronic credentialing system. Of primary importance with this study will be the identification and review of institutional considerations that may have led to the implementation of the electronic credentialing system in one state versus another state. Since, initially, five states had planned (and were provided funding) electronic credentialing systems and only two are currently planning to continue their program, issues have arisen which have resulted in a change of priority or emphasis in the program. It will be the purpose of the case study to examine each state's actions and define and outline the issues that resulted in the state's decision to proceed or withdraw (or alter its original program).

Other key institutional issues to be defined may include:

- Coordination and progress with CVISN findings and results during the FOT
- In-house support of program and system
- Availability of resources
- Cooperation with state's management information systems (MIS) group
- Compatibility of existing systems
- Support by CVO groups
- Impact of regional CVO measures
- Impact of local CVO measures
- Budget issues
- Technology issues (CVOs and state agency)

Additional Note

Due to the evolutionary nature of this program (with uncertainty in the number of pilot states as well as the format of the credentialing process within each pilot state), continued refinement to the evaluation strategy will be required as the program proceeds. As the FOT is implemented and evolves, the strategy and evaluation plan should be updated.

INTRODUCTION

Commercial vehicle operations (CVO) have a long evolutionary history along the I-95 corridor. In 1996. the l-95 Corridor Coalition, with over 450 stakeholders, met in Philadelphia to discuss the focus and direction that CVO activities should take along the corridor. This meeting helped to align the l-95 Program with the National Program and to develop steps toward integrated projects that, once proven along the Corridor, could be applied throughout the country. I-95 would serve as the testbed for a number of key CVO initiatives.

Through panel discussions and several group meetings, the l-95 CVO Program components were derived. The Program highlighted the areas of CVO credentials, carrier safety, and carrier operations in evolving its program. In 1996, field operational tests (FOTs) were created to meet the Program objectives. Under the credentialing area. FOT #8 (Electronic Credentialing) was developed. In the area of carrier safety, FOT #7 (Roadside Safety), FOT #9 (Electronic Screening), and FOT #10 (Safety Management) were created. In the carrier operations area, FOT #4 (CVO Traveler Information) was created. In 1997, RFPs were prepared and the FOTs awarded to qualified responders. This report is aimed at the FOT #8 Program activities.

FOT #8 (Electronic Credentialing) Overview

The electronic credentialing field operational test (FOT # 8) will undertake the model deployment of electronic credentialing for commercial vehicles. The project will involve the development of state-specific electronic credentialing systems. The electronic credentialing element will primarily focus on the IRP registrations (although oversize-overweight (OS/OW) permitting will also be examined in several cases) and will enable motor carriers to register their vehicles electronically with state agencies or through third-party service providers. The intent of the I-95 CVO program is to incorporate available electronic credentialing software being developed through CVISN to meet the needs of the FOT #8 Coalition states or to develop in-house electronic credentialing capabilities for existing legacy systems. The electronic credentialing concept is displayed in Exhibit 1.

At least two sources of electronic registration software will be considered: electronic credentialing software being developed by the FHWA-sponsored CVISN program or electronic registration software provided by third-party suppliers to Coalition states. The initial focus of the project will be interstate truck registration (IRP); however, the intent is to extend electronic registration capability to intrastate as well as interstate trucks and to other types of credentials (fuel tax- IFTA). The project may also test data exchange links with the IRP Clearinghouse, where feasible, being developed through CVISN.

The Electronic Credentialing project is intended to test an information system designed to help state agencies streamline credentials administration. Credentials administration for motor carriers is a complex and paper-intensive business. Motor carriers register in a base, or home state, but must provide information on mileage for every state in which they operate. Typically, vehicle and corporate information for registration is entered on paper forms and mailed or hand delivered to the base state's motor vehicle registration agency, where it is manually entered into the state's database for processing. The state then determines the'registration fees and apportions them among states. Each base state must then apportion registration fees to all states in which the motor carrier operates and issue a special license plate and cab card (known as an "apportioned
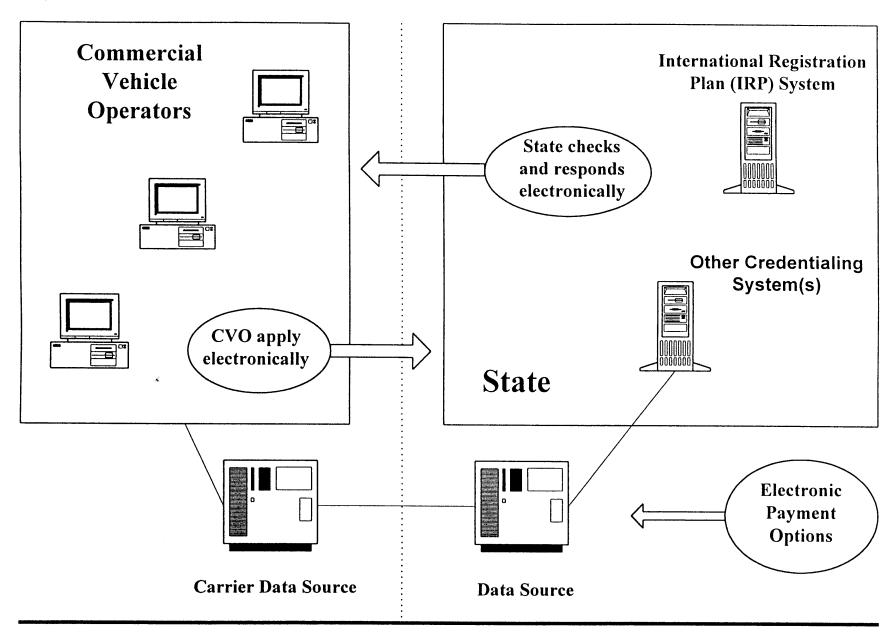
Exhibit 1. Electronic Credentialing Concept

tag") allowing the carrier to pass through these states. The credentialing application system is paper and labor intensive for both carriers and states.

The I-95 Corridor Coalition's Electronic Credentialing project purpose is to test the implementation of procedures and technologies that will enable state agencies and motor carriers to streamline credentials administration and to share this information with other states and agencies within the state. This program will reduce costs and improve the efficiency of operations for motor carriers and the agencies themselves by enabling carriers to file credential applications electronically.

1. EXISTING/PLANNED CVO PROGRAMS IN I-95 CC AREA

Within the I-95 Corridor Coalition's business area, a number of projects are planned or underway that will have an impact on the findings and efforts of the "Electronic Credentialing" project. The following section highlights these projects. In many cases, these projects lay the foundation or complement the overall goals of the Electronic Credentialing project.

CVISN (Commercial Vehicle Information Systems and Networks):

The CVISN project is intended to develop a means for existing commercial vehicle operations information systems to electronically exchange information through the use of standards and the United States' commercially-available communications infrastructure. It is intended to include information systems owned and operated by state and local governments, carriers, and other stakeholders. It does not, however, include the sensor and control elements of ITS/CVO technologies. The selected group of key CVO information systems to be tested and used in the program includes: exchange of safety assurance and credentialing information to and from the roadside; electronic credentialing; electronic screening; and carrier operations.

The CVISN Deployment Strategy is divided into four major steps. The first step was to develop the management plans and technical architecture frameworks necessary to coordinate the subsequent phases. Phase 1 is complete. Phase 2 is to prototype the technology in a live environment, using the states of Maryland and Virginia, to demonstrate the operational concepts and validate the requirements. This phase is currently underway with the states showcasing various ITS/CVO technologies. An evaluation of this phase of the program is underway. The results of the experiences will be documented and used as input into the next phase.

Phase 3 in the Deployment Strategy is to "pilot" the approach developed during the prototype phase in a select number of states from all regions of the U.S. . The selected states are: Connecticut, Kentucky, Michigan, Colorado, Minnesota, California, and Washington/Oregon. A national evaluation of this phase will be conducted and will serve as key input into the eventual nationwide deployment of the program. This phase is currently underway. The development of several of the technologies within the selected states is underway.

Phase 4 of the CVISN program then allows for full deployment of CVISN to all interested states.

The Vision for the CVISN Program is that, by the year 2005, trucking operations will be able to move seamlessly throughout North America, with enforcement efforts targeted on non-compliant and unsafe carriers. The CVISN systems will help achieve this vision by enabling the exchange of safety and credentialing information within and between states, and by enabling safe and

compliant carriers to reduce delays at weigh stations through electronic screening and providing troopers at the roadside with more timely and accurate information about vehicles being inspected.

SAFER (Safety and Fitness Electronic Records)

The Safety and Fitness Electronic Records (SAFER) System is a component of ITS. SAFER provides carrier, vehicle, and driver safety and credential information to fixed and mobile roadside inspection stations. This information allows roadside inspectors to select vehicles and/or drivers for inspection based on the carrier, vehicle, and driver safety and credential historical information and current safety rating. SAFER is also testing the use of an electronic data mail box that can be used to post information about inspection results and any identified safety violations or out-of-service orders for motor carriers on a real-time basis (SAFER data mail-box project). This electronic mailbox will allow other enforcement officials to access this information during the course of a motor carrier's current trip, thus enabling the identification and targeting of carriers who violate out-of-service orders while reducing delays spent at weigh stations or inspection sites for safe and compliant carriers. SAFER identifies changes to carrier information downloaded each week from the Motor Carrier Management Information System (MCMIS). Changes significantly affecting a carrier's ISS score and safety rating are downloaded to ASPEN via the SAFER subscription download process. Changes to a carrier's safety history that may affect the ISS score are based on the results of compliance reviews and accident and inspection reports.

SAFER also provides a mechanism to electronically transfer inspection reports from roadside ASPEN units to a State's SAFETYNET site where the information is processed for input to the MCMIS database. This transfer mechanism is incorporated in the SAFER Data Mailbox mentioned previously. It is currently being prototyped and tested by a group of eastern states referred to as the Eastern States Coalition; RS Information Systems is serving as the technical liaison between the states and the SAFER and ASPEN development teams.

As part of the SAFER Data Mailbox test, state law enforcement officers will use ASPEN roadside units and mobile communications technologies to upload inspection reports to the State's SAFETYNET mailbox on the SAFER system. The AVALANCHE software, which resides at state SAFETYNET sites, will download this information from the SAFER mailbox and make it available to the SAFETYNET software for subsequent data processing.

The FHWA Office of Motor Carriers (OMC) has typically provided carrier safety data to industry and the public for many years via telephone requests and paper reports. The SAFER System makes it possible to offer this information electronically. Limited SAFER functions are now provided free of charge over the Internet. Access is provided to Carrier Snapshots, a concise electronic record of a carrier's identification, size; commodity information, and safety record, including safety rating (if any) and roadside out-of-service inspection information. The carrier snapshot is available via an ad-hoc query (one carrier at a time) service that can be accessed by selecting the SAFER Database Query link highlighted below. Other functions will be available for a fee at a later date.

Developed by the Johns Hopkins University Applied Physics Laboratory, under contract to the FHWA/OMC, SAFER uses carrier information from existing government motor carrier safety

data bases. Presently, it consists of only interstate carrier data. but plans are to expand it to include intrastate carriers.

FleetForward (I-95 CC Operational Test #6):

This project will test an advanced traveler information system (ATIS) for commercial vehicle dispatchers and drivers. The system will provide the CVO market information on congestion and incidents that is necessary to meet the demands of shippers and receivers in the Corridor for fast, timely, and reliable delivery of goods and services. Research has found that carriers are investing in the technology to improve their routing and dispatching, but do not have access to good information on regional highway and travel conditions. The information provided by metropolitan traffic services often is too general or too limited in geographic scope to be useful for the wide-ranging carrier operations that exist in the I-95 Corridor.

The project will develop a public-private partnership (FleetForward) that will act as a value-added repackager of traveler information for motor carriers. FleetForward will gather information on highway conditions and travel through the IEN, TRANSCOM, CHART, SmarTraveler, state agencies and private sources, including the motor carrier industry. This information will be organized into a functional format and made available to dispatchers and drivers of a voluntary group of CVOs. The project will test a range of delivery technologies (i.e., pager, fax, internet WWW, dial-up service, satellite communications, wireless communications, etc.) to determine the technologies that are best suited to specific markets. The project also will investigate the market for subscription and pay-by-use information services. Upon demonstrated success, the market will be expanded to CVO throughout the l-95 Corridor.

Roadside Safety (I-95 CC Operational Test #7):

This project will test an information exchange system designed to help motor carrier enforcement officials focus roadside inspections and enforcement on high-risk motor carriers. The project will:

- Accelerate the deployment of pen-based and laptop computers (initiated under the MCSAP) and provide uniform training in their use to roadside inspectors and enforcement offices throughout the Corridor;
- Use these computers and specialized decision-support software (developed by the Volpe National Transportation Systems Center and others for the FHWA) to assist inspectors and enforcement officers in the selection of carriers for roadside inspection;
- Use these computers and specialized data entry software (developed by the FHWA) to streamline inspection procedures and reporting;
- Establish roadside communication links to the SAFER (Safety and Fitness Electronic Records) system (developed by the FHWA) so that inspectors and enforcement officers have real-time access to motor carrier safety performance records; and
- Pilot test the SAFER interstate mailbox system (under development by the FHWA) so that inspector and enforcement officers have immediate access to regional and national data on vehicle and driver out-of-service citations and recent motor carrier inspection reports.

The project will coordinate and leverage current state and FHWA safety initiatives including the CVISN prototype and pilot projects, the SAFER program, the Motor Carrier Safety Assistance Program, and the Top 1000 Program. The intent is to contribute to a new national model for

motor carrier safety enforcement. The following is a description of planned activities within each of the pilot I-95 CC states.

Connecticut: The Connecticut DMV, in coordination with the Dept. of Public Safety, will use monies from FOT #7 to purchase laptop computers to expand and enhance the Roadside Safety Information Exchange and Roadside Clearance activities. These laptops would facilitate additional timely inspection data, including size and weight data, and incorporate electronic accident reporting capability (this would facilitate greater implementation of proposed FOT IO).

Maryland: Maryland will use FOT #7 funds to purchase additional laptop computers for their roadside operations. The state of Maryland has entered a testing phase of both hardware and software that will allow for the delivery of roadside data through wireline or wireless communications. The goal is to allow the SAFER Data Mailbox System to assist the enforcement community in monitoring CVO activities.

Massachusetts: Massachusetts will use FOT #7 funds to purchase additional laptop computers to augment MCSAP funding and to accelerate the deployment of laptops in the field. It will expand the state's use of remote laptop computers for electronic collection of commercial vehicle safety inspection data and remote links to a central database for downloading and uploading data and out of service orders. They also want to use the laptops as part of the electronic registration operational test (FOT 8). Equipment purchases will also be used for both FOTs 7 and 9.

New York: New York is chairing the Eastern State's SAFER Mailbox project that involves the testing of the ability of wireless communication equipment to provide real-time inspection data. Due to limited funding available through the SAFER Mailbox project, NY will use FOT #7 funds to equip additional NYSDOT motor carrier safety vans and State Police with wireless communication devices. This test will provide statewide real-time access to roadside inspection data.

Pennsylvania: Pennsylvania proposes that FOT #7 funding be used to purchase additional laptop computers and communications equipment to take advantage of current technology concepts (CVISN) and to accelerate wide-scale mobile enforcement within the State.

Rhode Island: Rhode Island will use FOT #7 funding to automate roadside inspection information (in coordination with Massachusetts and Connecticut), identifying high risk and out-of-service carriers, real-time. Necessary hardware, software and communication links will be purchased. Data communication links will be established among inspectors from Rhode Island, Massachusetts and Connecticut.

Electronic Screening (I-95 CC Operational Test #9):

This field operational test will study mainline electronic screening and clearance of commercial vehicles by mobile enforcement units. There are relatively few fixed weigh stations north of Virginia and Maryland. Most states in the Corridor rely heavily on mobile patrols operating from temporary sites to carry out inspections and motor carrier regulatory enforcement. This project will build upon the lessons learned and technologies for fixed weigh stations developed by the HELP Program and the ADVANTAGE CVO Program and apply them to address the needs of mobile enforcement operations in the Corridor. The project will:

- Define the system requirements for electronic screening and clearance by mobile patrols and at fixed sites in the Corridor. The project will explore the use of both automatic vehicle identification (AVI or dedicated short-range communications) and machine-vision camera systems (to read license plate number or U.S. DOT numbers). It also will evaluate the potential for piggybacking on electronic toll collection transponders if carriers request that option;
- Develop specifications for mobile and fixed operations; procure, integrate, and install the equipment; and
- Implement and evaluate the technology for wide-spread use in the Corridor.

The following is a description of projects within the two pilot I-95 CC states.

Delaware: Delaware proposes to use FOT funding to define and assess system requirements for electronic screening at fixed sites and coordinate those requirements with existing national screening systems as well as toll agencies implementing ETTM systems. They also propose to develop specifications for fixed site "plug-and-play" mainline electronic screening to include WIM, AVI, etc.

Virginia: Virginia proposes to use FOT funding to assess the feasibility of utilizing license plate readers in performing electronic screening of CVOs from a mobile platform. In addition, they will develop appropriate specifications and procure, install, demonstrate and evaluate selected technologies.

Safety Management (I-95 CC Operational Test #10):

This project will develop a prototype of a comprehensive, performance-based motor carrier safety management program. The rapid development of communication and information management technology (i.e., pen-based and laptop computers, local and wide-area networks, database management software, automatic vehicle identification systems, weigh-in-motion devices, and machine-vision video systems) provides state motor carrier enforcement agencies with an opportunity to rethink and reengineer the way they do business, thereby streamlining safety assurance procedures and making more effective use of state and motor carrier staff and resources. The project will address and integrate:

- Carrier safety performance assessments;
- Safety inspections focused on high-risk carriers and drivers;
- Analyses of truck travel patterns and accidents;
- Development of accident countermeasure programs;
- Safety compliance assurance monitoring and reviews; and
- Industry education and outreach initiatives.

The project will complement and extend the goals and objectives of FOT #7 and FOT #9, and the FHWA CVISN and SAFER programs. The intent is to develop a new national model for motor carrier safety enforcement.

The following is a description of projects within each I-95 CC pilot state.

Connecticut: Connecticut proposes to use FOT funding to work with other Corridor states (New York and Pennsylvania) in the establishment of a multi-state enforcement and industry working

group The working group will develop coordinated regional policies, procedures, and implementation strategies for identifying high risk carriers. They plan to work closely with the ATA Foundation, NPTC, and state trucking associations. They also plan to develop and deliver safety compliance and management educational materials and programs to carriers identified as 'high risk'.

New York: New York proposes a multi-state effort (with Connecticut and Pennsylvania) to develop a safety management strategy for the corridor which includes state and industry input. After reaching consensus on a safety management approach, the states will use this in the identification of high risk carriers and develop strategies to address these safety issues.

Pennsylvania: Pennsylvania proposes to develop model safety plans based on the best practices of the motor_carrier industry. This information will then be provided through outreach and educational activities to motor carriers in the state.

An additional activity being funded through FOT # 10 involves a proposal by the State of Maine to issue USDOT numbers for both interstate and intrastate carriers. Through the project, the Maine DOT, Bureau of Motor Vehicles, and the Bureau of State Police are developing a database linking mechanism allowing all information from the three agencies' databases to be accessed under one unique identifier, a USDOT number for both interstate and intrastate carriers. This would allow for more complete information to be provided at roadside and in the identification of high risk carriers.

2. PLANNED FOT #8 PROGRAM

The electronic credentialing field operational test (FOT #8) will examine the implementation of procedures and technologies that will enable state agencies and motor carriers to streamline credentials administration, reducing costs and improving efficiency of operations for motor carriers and the agencies themselves. Five states were initially members of the test. They included: Delaware, Pennsylvania, New Jersey, New York, and Massachusetts.

InitiaI FOT Program

Initially, the FOT was approved based on the five states' planned activities in attaining the FOT's goals and objectives. These activities, by FOT state, included:

Delaware- Delaware proposed to implement a model deployment of electronic registration and to modify its systems to enable data exchange with the International Registration Clearinghouse. They planned to:

- Inventory current Motor carrier Registration requirements and procedures;
- Review, assess and select appropriate electronic credentialing software and procedures for electronic credentialing;
- Modify state information management systems (hardware and software) to handle electronic credentialing by motor carrier and procure and install the hardware and software, as appropriate;
- Evaluate the model deployment of the electronic credentialing system; and

- Review, assess, and adopt appropriate electronic data exchange and electronic funds transfer standards to support data exchange between carriers, state agencies, and the IRP Clearinghouse.

Massachusetts- Massachusetts proposed to field test an integrated system that would make credentialing transactions available electronically, over the Internet, to a majority of the commercial carriers in the Commonwealth. These transactions and data would be accessible by law enforcement personnel in the field. They planned to:

- Expand the automated driving record process for proactive use by the trucking industry;
- Automate the IFTA/IRP temporary permits;
- Automate, expand, and integrate commercial registration renewals and amendments; and
- Expand and integrate oversize/overweight permitting.

New Jersey- The New Jersey Department of Transportation Division of Motor Vehicles proposed to implement an Internet filing system for IFTA and IRP credentialing (tax and recap filing) based upon emerging hardware and software developments. The program would provide for on-line, real-time electronic registration of commercial motor vehicles. They planned to:

- Contract with technical support to assess the utility of available and emerging software systems which facilitate electronic IRP and IFTA filings; and
- Purchase and modify available hardware and software to meet state requirements.

New York- New York proposed to develop an Internet-based CVO electronic credentials system that would provide commercial vehicle operators a single point of contact for credentials data submission to the DMV's IRP or intrastate commercial registrations, the DTF's IFTA and HUT permits and the DOT's single state registration and intrastate operating authority. The program would essentially develop an electronic "one-stop" credentialing program. They planned to:

- Contract with technical support to assess the utility of developing a "one-stop shopping" concept;
- Develop the operating concept; and
- Implement and test a "one-stop" credentialing program for the CVO in its area.

Pennsylvania- Pennsylvania proposed to develop and implement a system to facilitate electronic IRP filing via the Internet, to provide electronic filing capability of Pennsylvania Department of Revenue mileage reports to the PennDOT IRP processing system, to electronically image and store paper documents, and to provide electronic image access of documents to PennDOT service representatives. They planned to:

- Contract with technical support to provide software programming, system integration, and maintenance capabilities;
- Purchase available hardware and software to facilitate Internet filings of IRP, electronic data links to the Pennsylvania Department of Revenue, and the electronic imaging of documents;
- Outreach to motor carriers to participate in a demonstration of the IRP filing system;
- Install and test equipment;
- Provide training to system operators and service representatives; and
- Implement and evaluate each element of the system.

Current FOT Program

Changes in the availability of resources, the complexity involved in providing the hardware and software systems, as proposed, and institutional issues within the state were three critical issues that is requiring a re-examination of each states' planned FOT program. In addition, individual states' priorities towards the electronic credentialing project as well as other transportation and state programs have resulted in a change of emphasis in the FOT program by the member states. As a result. the scope of FOT #8 has still evolved.

The current status of the FOT #8 program in each member state is as follows:

Massachusetts: Massachusetts proposes to field test an integrated system that would make credentialing transactions available electronically, over the Internet, to a majority of the commercial carriers in the Commonwealth. These transactions and data would be accessible by law enforcement personnel in the field. They plan to:

- Expand and integrate oversize/overweight permitting.
- Expand the automated driving record process for proactive use by the trucking industry;
- If feasible, automate the IFTA/IRP temporary permits; and
- If feasible, automate, expand, and integrate commercial registration renewals and amendments.

New York: New York proposes to develop an Internet-based CVO electronic credentials system that will provide commercial vehicle operators a single point of contact for credentials data submission to the DMV's IRP or intrastate commercial registrations, the DTF's IFTA and HUT permits and the DOT's single state registration and intrastate operating authority. The program would essentially develop an electronic "one-stop" credentialing program. They plan to:

- Contract with technical support to assess the utility of developing a "one-stop shopping" concept;
- Develop "one-stop shopping" concept/program; and
- Implement and test a "one-stop" credentialing program for the CVO in its area.

New Jersey: The New Jersey Department of Transportation Division of Motor Vehicles proposes to implement an Internet filing system for IFTA and IRP credentialing (tax and recap filing). The program would provide for on-line, real-time electronic registration of commercial motor vehicles. They plan to:

- Review the current project requirements with state officials and decide on a course of action; and
- If approved and backed by state officials, purchase and modify available hardware and software to develop the credentialing capability.

Pennsylvania: Pennsylvania proposes to develop and implement a system to facilitate electronic IRP filing via the Internet, to provide electronic filing capability of Pennsylvania Department of Revenue mileage reports to the PennDOT IRP processing system, to electronically image and store paper documents, and to provide electronic image access of documents to PennDOT service representatives. They plan to:

- Review the current project requirements with state officials and decide on a course of action; and
- If approved and backed by state officials, contract with technical support to provide software programming, system integration; and maintenance capabilities for the proposed course of action.

Delaware: Delaware has chosen to withdraw from the FOT.

In summary, the states of Massachusetts and New York are currently planning to continue in the FOT #8 program with similar objectives as proposed initially. The states of New Jersey and Pennsylvania, while currently still part of the FOT #8 program, are awaiting a decision from their state officials on the availability of resources to continue the program. Should approval be obtained, the states would implement the program aimed at achieving the IRP program objectives. The state of Delaware has chosen to withdraw from the program.

3. EVALUATION GOALS AND OBJECTIVES

The overall purpose of FOT #8 is to implement procedures and technologies that will enable state agencies and motor carriers to streamline credentials administration, thereby reducing the costs and improving the efficiency of operations for motor carriers and the agencies themselves. This program will permit more effective and coordinated management of credentialing services throughout the Region.

The evaluation strategy for FOT #8 is led by the evaluation goals and objectives defined by the I-95 CC CVO Evaluation Team and members of the pilot states. Several meetings were conducted with the I-95 CC CVO Evaluation Team and the FOT states to outline the specific goals and objectives of the program. Oftentimes, these goals and objectives are derived from the initial purpose of the operational test itself. However, specific evaluation goals, independent of the initial purpose, may also be derived.

Based on the input, it was felt that the evaluation goals should address, as a minimum, the following measures: user acceptance, system benefits, system costs, system performance, and institutional issues. In addition, the goals should have consistency with the goals and objectives of similar credentialing efforts part of the CVISN program. Based on these directives, the following goals and objectives for FOT #8, Electronic Credentialing, are outlined.

Goal #1: To determine changes in operational efficiency related to electronic credentialing.
- To determine improvements in motor carrier processes for the exchange of information regarding commercial vehicle credentials.
- To determine improvements in state agency processes for the exchange of information regarding commercial vehicle credentials between states and agencies within the state.

Goal #2: To determine user acceptance of "electronic credentialing" technologies and services.
- To determine user acceptance of the technologies and services by the motor carriers.
- To determine user acceptance of the technologies and services by the state agencies,

Goal #3: To document the costs associated with the deployment of "electronic credentialing" technologies and services.

- To document the costs state agencies can expect to incur for equipment, software development, legacy system interface, maintenance, training, outreach programs and other costs incurred during implementation and operation of the system.
- To document the costs motor carriers can expect to incur for equipment, software development, legacy system interface, maintenance, training, outreach programs and other costs incurred during implementation and operation of the system.

Goal #4: To assess system functional performance.

- To assess the ability of the system to meet functional operational requirements for speed, accuracy, memory needs, versatility, stability and reliability.

Goal #5. To assess institutional issues related to "electronic credentialing" implementation and operation.

- To assess issues relative to states' operation of system (public and private concerns).
- To assess issues relative to states implementation of systems (as compared to FOT states not providing systems) for public and private agencies/firms.
- To assess issues relative to motor carrier usage.

The purpose of the proposed evaluation strategy will be to ensure that an assessment of the effectiveness of the Electronic Credentialing program in achieving the goals and objectives is achieved within the resource limits of the evaluation activity.

4. PRELIMINARY EVALUATION STRATEGY

The preliminary evaluation strategy for FOT #8 is led by the evaluation goals and objectives defined by the I-95 CC CVO Evaluation Team and members of the pilot states. For each of the goals, statements of hypotheses are identified. These statements represent specific issues or criteria to be evaluated in assessing the effectiveness of the program in meeting the established goals and objectives. To aid in describing the hypotheses, specific evaluation measures or measures of effectiveness (MOE) are defined. These are the measures that will be investigated to test the hypotheses.

The preliminary strategy, organized by evaluation goal and objective, is displayed in Table 1. This strategy was developed as a result of several meetings and discussions among the I-95 CC and SAIC Evaluation Team members. Each evaluation/FGM study includes the list of objectives, hypotheses, and measures of effectiveness. For each hypothesis and measure, the proposed data sources and data requirements and analysis methods are outlined. The studies are proposed for conduct at several stages in the evaluation program to evaluate the specific programs under several levels of maturity and development. In addition, since specific programs are planned for implementation at different times (e.g. state of Massachusetts and state of New York systems) during the overall project, the timing of the studies for specific programs may vary during the study period.

To evaluate theelectronic credentialing program, a number of specific studies are proposed. It will be important, during the test, to assess and document the impacts assoicated with each states' operation of the developed electronic system as well as the manual system that will

Table 1. Preliminary Evaluation Strategy and Hypotheses

Goal #l: To determine changes in the operational efficiency related to electronic credentialing.

Objective	Hypothesis	MOE	Data Source/ Rea.	Analysis
To determine improvements in motor carrier processes for the exchange of information regarding commercial vehicle credentials.	.The electronic credentialing system will improve the operational effkiency of the CVO in the cre-dentialing process.	Reguced time spent by CVO in creden-tialing efforts	Time/cost logs by CVO in pilot states	Analysis of time mea-snres in pilot states "before" & "after" sys-tem implementation
	The electronic credentialing system will reduce the costs to the CVO in the credentialing process.	Reduced costs spent by CVO in creden-tialing efforts	.Time/cost logs by CVO in pilot states	Analysis of cost mea-sures in pilot states "before" & "after" sys-tem implementation
To determine improvements in state agency processes for the exchange of information regarding commercial vehicle credentials between states and agencies within states.	.The electronic credentialing system will improve the operational effkiency of the state in the cre-dentialing process.	Reduced time spent by state(s) in creden-tialing efforts	Time/cost logs by state in pilot states and other accompanying states.	Analysis of time mea-sures in pilot and other states "before" & after" system imple-mentation.
	.The electronic credentialing system will reduce the costs to the state in the credentialing process.	Reduced costs spent by state(s) in creden-tialing efforts	Time/cost logs by state in pilot states and other accompanying states.	Analysis of cost mea-sures in pilot and other states "before" & after" system imple-mentation.

Table 1. Preliminary Evaluation Strategy and Hypotheses (contd.)

Goal #2: To determine user acceptance of "electronic credentialing" technologies and services.

Objective	Hypothesis	MOE	Data Source/ Req.	Analysis
To determine user acceptance of the technologies and services by the motor carriers.	The electronic credentialing system will provide reliable, timely, comprehensive, efficient, and user-friendly service to CVO users.	Users' perception of reliability, timeliness, comprehensiveness, efficiency, and useful-ness/benefits of system and services.	Users survey of a sample of CVO users (stratified by size and business type)	Documentation and statistical comparison of survey/interview findings
		Reduced time spent by CVO in credentialing efforts	Time/cost logs by CVO in pilot states	analysis of time measures in pilot states "before" & "after" system implementation
		Reduced costs spent by CVO in credentialing efforts	Time/cost logs by CVO in pilot states	.Analysis of cost measures in pilot states "before" & "after" system implenienlation
To determine user acceptance of the technologies and services by the state agencies.	.The electronic credentialing system will provide reliable, timely, comprehensive, efficient, and user-friendly service to state agencies.	States perception of reliability, timeliness, comprehensiveness, efficiency, and useful-ness/benefits of system and services.	Survey of pilot states and staff users	.Documentation and statistical comparison of survey/interview findings
		Reduced time spent by state in credentialing efforts	.Time/cost logs by staff in pilot states	.Analysis of time measures in pilot states "before" & "after" system implementation
		Reduced costs spent by state in credentialing efforts	.Time/cost logs by staff in pilot states	.Analysis of cost measures in pilot states "before" & "after" system implementation

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Table 1. Preliminary Evaluation Strategy and Hypotheses (contd.)

Goal #3: To document the costs associated with the deployment of "electronic credentialing" technologies and services.

Objective	Hypothesis	MOE	Data Source/ Req.	Analysis
.To document the costs state agencies can expect to incur through documentation of equipment, software development, legacy system interface, and other costs incurred during implementation and operation of the system.	.The costs to develop, operate, and maintain an electronic credentialing system will be useful information to other parties.	. System development and operation costs by phase of the program(s)	.Cost (development, O & M, and pre-existing/pre-developed) data from state agency in each pilot state .Research on other programs nationwide (incl. CVI SN)	Definition of program costs in each pilot state
.To document the costs motor carriers can expect to incur through documentation of equipment, software development, legacy system interface, and other costs incurred during implementation and operation of the system.	.The costs to develop, operate, and maintain an electronic credentialing system will be useful information to other parties.	. System development and operation costs by phase of the program(s)	.Cost (development, O & M, and pre-existing/pre-developed) data from CVO user in each pilot state .Research on other programs nationwide (incl. CVISN)	.Definition of program costs in each pilot state

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Table 1. Preliminary Evaluation Strategy and Hypotheses (contd.)

Goal #4: To assess system functional performance.

Objective	Hypothesis	MOE	Data Source/ Rea.	Analysis
.To assess the ability of the system to meet the functional operational requirements for speed, accuracy, memory needs, versatility, stability and reliability.	.The operation of the electronic credentialing system achieves the requirements of the functional specifications.	.Comparison of speed, accuracy, memory, versatility, stability, and reliability of system w/ functional specs	.Performance logs on system reliability and operation	.Documentation and statistical comparison of data
		.Users' perception on system operation	.Users' survey of a sample of CVO users (stratified by size and business type)	.Documentation and statistical comparison of survey/interview findings
			.Survey of pilot states and staff users	.Documentation and statistical comparison of survey/interview findings

Table 1. Preliminary Evaluation Strategy and Hypotheses (contd.)

Goal #5: To assess institutional issues related to "electronic credentialing" implementation and operation.

Objective	Hypothesis	MOE	Data Source/ Req.	Analysis
To assess issues relative to states' operation of the system (public and private concerns).	.The documentation of issues relative to pilot states' operation of the system is valuable.	Institutional issues & successes and failures	Case study w/ interviews of key staff from pilot state agencies & CVO partners .Review of past meeting minutes	.Documentation of findings and lessons learned
,To assess issues relative to states' implementation of system (as compared to FOT states not providing systems) for public and private agencies/firms.	.The documentation of issues and steps relative to pilot states' plans and development/implementation of the system is valuable.	Institutional issues & successes and failures	.Case study W/ interviews of key staff from initial list of pilot state agencies & CVO partners .Review of past meeting minutes	.Documentation of findings and lessons learned
.To assess issues relative to motor carrier usage.	.The documentation of issues relative to CVO users' operation of the system is valuable.	Institutional issues & successes and failures	.Case study W/ interviews of key staff from pilot state agencies & CVO partners Review of past meeting minutes	.Documentation of findings and lessons learned

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continue in place during the FOT (and longer). The following overview presents the key aspects of these studies.

Time and Cost Logs

Goal l of the evaluation is aimed at testing the operational efficiencies and benefits gained with the electronic credentialing systems. To accomplish data collection for this goal, time/cost logs for the processes in each pilot state will be used. These time/cost logs will record the time and costs spent in the activities involved with vehicle credentialing that are impacted by each state's specific FOT #8 electronic credentialing program. They will be maintained by the CVO users (sample of CVOs from pilot states) and the state agencies responsible for processing the applications. The logs will document the time, volume of credential requests, and level of effort involved in all processes of preparing, recording, and submitting the credentialing applications under both the manual and the electronic credentialing process. For example, during the <u>manual</u> method, the recorded steps may include: preparing applications, reviewing applications, processing check for payment, traveling to and from DMV or state agency office, and time spent at DMV or state agency office in submitting, verifying, and processing applications. For the <u>electronic</u> method, the steps may include: preparing applications, reviewing applications, processing applications electronically, and verifying approval of applications and payment method.

The logs would be maintained by the CVO users and the state agencies for the pilot states providing electronic credentialing systems. The logs' use would be dependent on the application filing requirements within each state. Where credentialing applications are conducted throughout the year, the logs will be maintained for at least a three-month period "before" and "after" implementation of the electronic credentialing system. These periods would occur in identical calendar periods to maintain comparability in the application requests from year to year.

Where credentialing applications are processed on a "one time a year" basis within the state, the logs will be maintained for a two-month period "before" and "after" implementation of the electronic credentialing system. In the "after" period, monitoring of both the manual and electronic' method will be conducted. The calendar months would be based on the specific application period within each state.

Within each pilot state, a sample of up to eight CVO groups (stratified by size and business type) will be studied (This number may vary depending on the anticipated level of CVO involvement at this stage.). In addition, each pilot state agency will record the log data for its phase of the operation.

Surveys

A key component to the evaluation will be information collected from CVO users and state agency staff for the pilot states on the specific programs and their use, effectiveness, reliability, and perceived benefits. <u>CVO users surveys/interviews</u> are proposed to obtain inputs on the user acceptance issues of the CVOs planning to or actively using the system. The survey would consist of a 10- 15 question design oriented to the user acceptance issues addressed under Goal 2 of the evaluation. In addition, space for anecdotal comments would be provided. A sample of up to six users (stratified by business size and type) per FOT state (of those states providing

electronic credentialing services) would be surveyed. Items to be addressed in the survey would include:

- Frequency in use of service
- Perceived impact or benefits of services
- Perceived satisfaction of timeliness, reliability, comprehensiveness, and usefulness of service
- Perceived value/worth of services

Additional demographic information (e.g. number of vehicle units used, ownership type, availability and use of computer systems, etc.) for analysis purposes would be added. The surveys would be run both "before" and "after" implementation of the system (Note: Typically, at least a one month period is permitted following implementation to allow for system stabilization and familiarity.).

Agency surveys/interviews are proposed to solicit inputs on the user acceptance issues for the pilot agencies (i.e. Massachusetts MVD, New York DOT, etc.) actively planning to participate in the electronic credentialing program. The surveys/interviews would be conducted with up to six key staff per state (of those states providing electronic credentialing services). The staff would consist of individuals who currently conduct the current, manual credential services, supervise the activities, or are involved in maintenance of the system. The surveys/interviews would be designed as a rather extensive interview consisting of 15-20 questions reflecting the issues related to the user acceptance goals and objectives of the project plus opportunity for anecdotal input. Specific items covered during the survey/interview would include:

- Level of effort involved with the system
- Satisfaction with procedures for operation or maintenance of the system
- Staffing and resource requirements associated with 0 & M of the system
- Perceived benefits (including staff operations) received with the system
- Satisfaction with procedures and formats of information provided from system
- Satisfaction with reliability, timeliness, comprehensiveness, and usefulness of information received from the system
- Perceived value/worth of information received from the system

The interviews would be conducted during both the "before" and "after" periods of the implementation within the pilot states.

Cost Study

Goal 3 of the evaluation objectives highlights the cost-related and sustainability objectives of the program for each pilot state. From record logs, invoices, and other sources provided by the state system developers, an account and statement of project-related costs for each program and its implementation and operation will be defined. Key items in the costs will include: development costs (including associated costs or estimates of pre-developed products or services), operations costs, and system maintenance costs. These costs will identify labor, direct costs, and other related costs to effectively define the costs to develop, operate, and maintain each specific system. These costs will be documented or estimated throughout the project period.

System Performance Logs

In goal 4, system performance issues are identified as system objectives. To document the system performance, logs defining the status of the system's operation in each pilot state will be maintained by the operators within the state agency and the CVO users. These groups will consist of the parties providing information to and receiving information from the individual electronic credentialing systems. The operators will be provided a log record to daily log in the system or program status, time frame of any downtime, cause of any downtime, and other key issues. The operators will be requested to maintain the logs from the commencement of their involvement in the project to at least six months of field operation of the system (depending on the system implementation and the evaluation project completion date). In addition to serving as a measure of system performance for the evaluation objectives, the system performance data will be used to assist in explaining or defining other key findings from other studies conducted for the evaluation.

Case Study

Goal 5 of the evaluation goals is directed towards defining and outlining the institutional issues relative to the implementation, operation, and maintenance of the electronic credentialing system. Of primary importance with this study will be the identification and review of institutional considerations that may have led to the implementation of the electronic credentialing system in one state versus another state. Since, initially, five states had planned (and were provided funding) electronic credentialing systems and only two are currently planning to continue their program, issues have arisen which have resulted in a change of priority or emphasis in the program. It will be the purpose of the case study to examine each state's actions and define and outline the issues that resulted in the state's decision to proceed or withdraw (or alter its original program).

Other key institutional issues to be defined may include:

- Coordination and progress with CVISN findings and results during the FOT
- In-house support of program and system
- Availability of resources
- Cooperation with state's management information systems (MIS) group
- Compatibility of existing systems
- Support by CVO groups
- Impact of regional CVO measures
- Impact of local CVO measures
- Budget issues
- Technology issues (CVOs and state agency)

This case study will be conducted in several ways. First, a review of available meeting minutes from past CVO, electronic credentialing, and other related meetings will be obtained and reviewed. Second, interviews with both public and private partners in each state will be conducted. The interviews will involve parties (public and private) responsible for initially obtaining support and approval of the program, key officials and decisionmakers, and users of the system. Up to eight individuals per state will be surveyed. They will be interviewed prior to the states' implementation of the system (or early 1999, for states not planning to implement a system) and, at least twice following the implementation of the program. The end result will be

the identification and definition of all key institutional issues related to the implementation (or lack of) of an electronic credentialing system.

<u>Additional Note</u>

Due to the evolutionary nature of this program (with uncertainty in the number of pilot states as well as the format of the credentialing process within each pilot state), continued refinement to the evaluation strategy will be required as the program proceeds. The evaluation strategy presented herein presents a sound strategy given the current state-of-the knowledge of the Electronic Credentialing program. As the FOT is implemented and evolves, the strategy and evaluation plan should be updated.

5. MANAGEMENT PLAN

The organization and responsibilities of the evaluation project team are presented herein. The SAIC Team will lead the evaluation effort with major input in the areas of time/cost logs, system performance logs, and cost studies from the CVO users and the state agencies. On a specific study basis, the following responsibilities are proposed:

Study	Responsible Team
Surveys	SAIC
Time/Cost Logs	CVO/State (Data) SAIC (Analysis)
Case Study	CVO/State (Data) SAIC (Study & Analysis)
Cost Study	State (Data) SAIC (Analysis)
System Performance Logs	State (Data) SAIC (Analysis)

Joint approval of the evaluation strategy by FHWA (or its representative), I-95 Corridor Coalition, and SAIC is necessary. Approval of the final Evaluation Plan and the study reports will be the responsibility of the I-95 Corridor Coalition and the FHWA.