TECHNICAL REPORT STANDARD TITLE PAGE

<table>
<thead>
<tr>
<th>1. Report No.</th>
<th>FHWA-GA-01-9504</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Government Accession No.</td>
<td></td>
</tr>
<tr>
<td>3. Recipient's Catalog No.</td>
<td></td>
</tr>
<tr>
<td>4. Title and Subtitle</td>
<td>Georgia Automated Vehicle Identification (AVI) Permitting, Verification, and Enforcement</td>
</tr>
<tr>
<td>5. Report Date</td>
<td>June 2001</td>
</tr>
<tr>
<td>6. Performing Organization Code</td>
<td></td>
</tr>
<tr>
<td>7. Author(s)</td>
<td>William R. Youngblood Andrew R. Muzio</td>
</tr>
<tr>
<td>8. Performing Organ. Report No.:</td>
<td>9504</td>
</tr>
<tr>
<td>9. Performing Organization Name and Address</td>
<td>Georgia Tech Research Institute Aerospace, Transportation, and Advanced Systems Laboratory 7220 Richardson Road Smyrna, Georgia, 30080</td>
</tr>
<tr>
<td>10. Work Unit No.</td>
<td></td>
</tr>
<tr>
<td>11. Contract or Grant No.</td>
<td></td>
</tr>
<tr>
<td>12. Sponsoring Agency Name and Address</td>
<td>Georgia Department of Transportation No. 2 Capitol Square Atlanta, Georgia, 30334-1002</td>
</tr>
<tr>
<td>13. Type of Report and Period Covered</td>
<td>Final; July 1995-June 2001</td>
</tr>
<tr>
<td>15. Supplementary Notes</td>
<td>Prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration</td>
</tr>
<tr>
<td>16. Abstract</td>
<td>The final set of tasks for this project included the following: (1) add electronic clearance of permitted loads to the Advantage I-75 system, (2) develop overweight citation software for use with portable computers, (3) develop requirements for an electronic interface between carriers and Office of Permits and Enforcement (OPE), (4) install the Mainline Automated Clearance Software (MACS, the Advantage I-75 software) Operations Center and develop screening criteria, and (5) incorporate this project’s products into Georgia’s Commercial Vehicle Information Systems and Networks (CVISN) Top-Level Design. Project accomplishments included the following: (1) electronic clearance of permitted loads was added to Advantage I-75 system, but activation was delayed until a critical CVISN component is developed; (2) citation software was developed, tested, documented, and delivered; (3) requirements for an electronic interface between carriers and all motor carrier oversight agencies were defined and documented; (4) the MACS Operations Center was placed into operation at GTRI and connected to the weigh stations along I-75, to be transferred to GDOT’s Office of Traffic Operations or the Georgia Department of Motor Vehicle Safety when transition plans are firm; and (5) all products of this project were incorporated into Georgia’s CVISN Top-Level Design. Georgia’s CVISN project is based in part on the results of this project, and the CVISN project will complete the capabilities envisioned in this project.</td>
</tr>
<tr>
<td>17. Key Words</td>
<td>Electronic truck clearance, weigh stations, Commercial Vehicle Operations, electronic permitting, ITS</td>
</tr>
<tr>
<td>18. Distribution Statement</td>
<td></td>
</tr>
<tr>
<td>19. Security Classif. (of this report)</td>
<td>Unclassified</td>
</tr>
<tr>
<td>20. Security classif. (of this page)</td>
<td>Unclassified</td>
</tr>
<tr>
<td>21. No. of Pages</td>
<td>13</td>
</tr>
<tr>
<td>22. Price</td>
<td></td>
</tr>
</tbody>
</table>

Form DOT 1700.7 (8-69)
FINAL REPORT

GDOT Research Project 9504

GEORGIA AUTOMATED VEHICLE IDENTIFICATION (AVI) PERMITTING, VERIFICATION, AND ENFORCEMENT

June 18, 2001

Prepared by
William R. Youngblood and Andrew R. Muzio
of the
Georgia Tech Research Institute
Aerospace, Transportation, and Advanced Systems Laboratory
7220 Richardson Road
Smyrna GA 30080

Prepared for the
Georgia Department of Transportation
Office of Permits and Enforcement
and
Office of Materials and Research
# 2 Capitol Square, S.W.
Atlanta GA 30334-1002
EXECUTIVE SUMMARY

This final report documents the most important aspects of Georgia Department of Transportation (GDOT) Research Project No. 9504, entitled Georgia Automatic Vehicle Identification (AVI) Permitting, Verification, and Enforcement.

Project tasks evolved due to several external events that affected the primary and supporting objectives. These events included an unplanned re-development of the Advantage I-75 system (also called the Mainline Automated Clearance System (MACS), two changes in the Office of Permits and Enforcements (OPE) management, and the development of Georgia’s Commercial Vehicle Information Systems and Networks (CVISN) program. The final set of tasks for this project were:

- Add an electronic clearance capability for permitted Oversize (OS) and Overweight (OW) loads to the Advantage I-75 system,
- Develop overweight citation software for use with OPE’s portable computers,
- Develop requirements for an electronic interface between carriers and OPE to support electronic application for and issuance of OS/OW permits,
- Install the MACS Operations Center at OPE’s central office and develop electronic screening criteria, and
- Incorporate this project’s products into Georgia’s CVISN Top-Level Design.

Project accomplishments were:

- Electronic clearance of permitted loads was added to Advantage I-75 system, but activation was delayed until a critical CVISN component is developed.
- Citation software was developed, tested, documented, and delivered.
- Requirements for an electronic interface between carriers and all motor carrier oversight agencies were documented. The interface will be developed in the CVISN Implementation project.
- The MACS Operations Center was placed into operation at GTRI and will be transferred to the future operators of the weigh stations, assumed to be GDOT’s Office of Traffic Operations (OTO) or the Georgia Department of Motor Vehicle Safety (DMVS).
- All products of this project were incorporated into the CVISN Top-Level Design.

The electronic clearance concepts and software developed under this project form the basis for the electronic clearance portion of Georgia’s CVISN architecture. Georgia’s CVISN Implementation project will, in turn, complete the implementation of Georgia’s electronic clearance capability, provide the specified electronic interface between carriers and OPE, provide the information necessary for knowledgeable issuance of permits, and provide enforcement of electronic clearance of trucks at Georgia’s weigh stations.
# TABLE OF CONTENTS

1 PURPOSE ..........................................................................................................................1

2 BACKGROUND ..................................................................................................................1

   2.1 ADVANTAGE I-75 PROJECT .......................................................................................1
   2.2 THE AVI PROJECT ....................................................................................................2
   2.3 OPE MANAGEMENT CHANGES .................................................................................3
   2.4 THE CVISN PROGRAM .............................................................................................3

3 DOCUMENTS GENERATED IN THE PERFORMANCE OF THIS PROJECT .............4

4 PROJECT OBJECTIVES ..................................................................................................4

   4.1 INITIAL OBJECTIVES ...............................................................................................4
   4.2 SECOND PHASE OF PROJECT ....................................................................................5
   4.3 FINAL PHASE OF PROJECT .......................................................................................5
   4.4 CONSOLIDATED OBJECTIVES ....................................................................................5

5 ACCOMPLISHMENTS ......................................................................................................6

   5.1 ADD AN OS/OW ELECTRONIC CLEARANCE CAPABILITY TO THE ACVO SOFTWARE FOR USE AT GEORGIA’S WEIGH STATIONS ..................................................................................................................6
   5.2 EXTEND THE ELECTRONIC CLEARANCE OF PERMITTED LOADS CAPABILITY TO TWO PORTABLE TEAMS ..................................................................................................................7
   5.3 DEVELOP A CAPABILITY FOR THE PARTICIPATING WEIGH STATIONS AND PORTABLE TEAMS TO ISSUE OS/OW PERMITS ..................................................................................................................7
   5.4 IMPLEMENT AN ELECTRONIC CLEARANCE CAPABILITY FOR TRUCKS LEAVING THE PORT OF SAVANNAH ..................................................................................................................7
   5.5 DEVELOP CITATION PREPARATION SOFTWARE FOR USE AT WEIGH STATIONS AND PORTABLE COMPUTERS ..................................................................................................................7
   5.6 DEVELOP REQUIREMENTS FOR AN ELECTRONIC INTERFACE BETWEEN CARRIERS AND OPE FOR THE OS/OW PERMITTING FUNCTION ..................................................................................................................7
   5.7 ASSESS VIRGINIA’S PORTABLE ELECTRONIC CLEARANCE SYSTEMS FOR POSSIBLE USE IN GEORGIA ..................................................................................................................8
   5.8 INSTALL THE MACS OPERATIONS CENTER AND DEVELOP SCREENING CRITERIA..................................................................................................................8
   5.9 INCORPORATE THIS PROJECT’S PRODUCTS INTO GEORGIA’S CVISN DESIGN AND PLAN ..................................................................................................................9

6 RECOMMENDED FUTURE EFFORTS ................................................................................9

   6.1 OS/OW ELECTRONIC CLEARANCE CAPABILITY AT GEORGIA’S WEIGH STATIONS ........9
   6.2 ELECTRONIC CLEARANCE OF PERMITTED LOADS BY PORTABLE TEAMS .................9
   6.3 WEIGH STATIONS AND PORTABLE TEAMS ISSUANCE OF OS/OW PERMITS .................9
   6.4 ELECTRONIC CLEARANCE OF TRUCKS LEAVING THE PORT OF SAVANNAH .................9
   6.5 CITATION PREPARATION SOFTWARE ........................................................................9
   6.6 CARRIERS – AGENCY INTERFACE FOR ELECTRONIC CREDENTIALING .........................10
   6.7 GEORGIA’S ELECTRONIC CLEARANCE OPERATIONS CENTER AND SCREENING CRITERIA ..................................................................................................................10
   6.8 CVISN TOP LEVEL DESIGN AND IMPLEMENTATION PLAN .......................................10
PURPOSE
This final report provides a single report of the most important aspects of Georgia Department of Transportation (GDOT) Research Project No. 9504, entitled Georgia Automatic Vehicle Identification (AVI) Permitting, Verification, and Enforcement. This document provides a project background discussion, references the major technical documentation produced, defines project objectives as they evolved during the course of the project, summarizes project accomplishments with respect to these objectives, and suggests future efforts that should be considered regarding these objectives.

BACKGROUND
To assist the reader in following the course of this project, background information on the following subjects is provided:

- The Advantage I-75 project and its successors,
- This project (referred to as the AVI project),
- Georgia’s Commercial Vehicle Information Systems and Networks (CVISN) program, and
- Two management changes in GDOT’s Office of Permits and Enforcement (OPE) during the AVI project.

Advantage I-75 Project
The Advantage I-75 project was a Field Operational Test (FOT) initiated in the early 1990s to demonstrate the technology for an electronic clearance system for trucks along I-75 from Florida into Canada. Kentucky’s Transportation Cabinet was chosen to lead the project, and they in turn chose the University of Kentucky’s Kentucky Transportation Center (KTC) to execute and manage the project. The Advantage I-75 system allowed registered trucks (with legal dimensioned and weight loads and operated by ‘trusted’ carriers) with appropriate transponder. A ‘trusted’ carrier is one with a good record of compliance with motor carrier regulations. The transponder equipped truck was required to be weighed at the first weigh station encountered, the measured weight and time was written to the transponder, and the time of truck passage was communicated to the next downstream weigh station. At each downstream weigh station, the elapsed time since the last weigh station passage was calculated and the weight on the transponder read. If the elapsed time was too long, the truck was stopped and weighed again.

After development, installation, and a period of testing, the participating States decided to continue using the system operationally. At some time after this decision, the KTC decided that the weigh station software component, called Mainline Automated Clearance System (MACS), must be redeveloped to operate reliably and allow alternate electronic clearance philosophies. This upgrade of the MACS software, begun in late 1996 or early 1997, was to require about six months. In fact, the upgraded MACS and its documentation were released in February of 2001.

The alternate electronic clearance philosophies added to the MACS include that intended to be used in Georgia, which is a sampling approach to selecting trucks for weighing, with no communication required between stations and no writing of data to the transponder. The
truck selection (for pull-in and weighing) algorithm chooses a random sample of trucks that adds to a fixed percentage of the carrier’s trucks based on the carrier’s compliance record. The pull-in percentage is recalculated periodically to account for changes in the carrier’s compliance record.

During this period, the Advantage I-75 project was renamed Advantage Commercial Vehicle Operations (ACVO), and then merged with similar projects in other parts of the country under the name NORPASS. After merging into NORPASS, KTC no longer provided a registration function for carriers nor operated a system wide Operations Center. The NORPASS organization was to provide carrier recruiting, carrier certification (to be a ‘trusted’ carrier), and transponder administration. Each state was required to develop and operate its own Operations Center.

The AVI Project
This project was initiated during the time the Advantage I-75 system was being field tested in Georgia, with the primary objective of adding trucks with permitted loads (oversize (OS) and/or overweight (OW)) to the electronic clearance capability. Several other tasks were involved in support of the primary objective and to enhance OPE’s computer tools at Georgia’s weigh stations.

Under the initial Scope of Services, the Advantage I-75 integration contractor was to modify the MACS software (under KTC oversight) to accommodate permitted loads, based on a Requirements Document to be provided by the Georgia Tech Research Institute (GTRI). However, during the lengthy delay in the AVI project resulting from a change in OPE management, KTC decided not to use the contractor further on the Advantage I-75 project. Shortly after the AVI Project was allowed to proceed, GTRI decided to do the software changes internally. However, shortly thereafter Kentucky decided to redesign the MACS software to improve its reliability and to support alternate electronic clearance philosophies (see discussion in paragraph 2.1). At this time, KTC agreed to have the upgrade contractor develop the OS/OW electronic clearance capabilities as a part of the upgraded MACS, in accordance with requirements to be provided by GTRI.

During the approximately two and a half years of delay in delivery of the redesigned MACS software and its documentation, several efforts were ongoing and specific events occurred that affected the AVI Project. Specifically:

- Other AVI Project tasks that could be accomplished were completed,
- OPE management changed again, and
- The CVISN program blossomed in the nation and in Georgia.

The redesigned MACS software and its documentation, with the capability for electronic clearance of permitted OS/OW trucks incorporated, were delivered shortly after the second change in OPE management. The new OPE Office Administrator decided that electronic clearance of permitted OS/OW loads could not be performed effectively until a critical component of Georgia’s CVISN is implemented*. He therefore redirected, through the Office of Materials and Research (OMR), the remaining AVI Project efforts toward more critical efforts in implementing the MACS electronic clearance capability in Georgia (with the
incorporated OS/OW capability) and to preparing for implementation of the critical CVISN component.

*This critical CVISN component is called the Commercial Vehicle Information Exchange Window (CVIEW), which will integrate all carrier credential, enforcement, and safety information from all state and federal agencies. The CVIEW will provide this integrated information in real-time to both the OPE office for permitting decisions and to the roadside for checking credentials and safety of particular carriers, trucks, and drivers.

**OPE Management Changes**
The AVI project was initiated under the Administrator that began OPE’s participation in the Advantage I-75 project, and its Statement of Work was decided based on the circumstances at that time.

Shortly after the AVI Project began in 1995, that OPE Administrator retired and was replaced by a second Administrator. The AVI project was essentially on hold for a time; until the second Administrator decided to proceed with the project, albeit with some changes.

In late 2000, while the project was still waiting for KTC to deliver the upgraded MACS software, the second Administrator retired and was succeeded by the current Administrator. The current Administrator had been the Assistant OPE Administrator and so was very familiar with electronic clearance and the AVI Project. He decided that electronic clearance of permitted OS/OW loads could not be performed effectively without a more automated mechanism for (1) collecting credentials and compliance information and (2) making that data available to OPE and the weigh stations.

**The CVISN Program**
Electronic clearance, or more generally electronic screening, is just one example of how technology is being applied to support Commercial Vehicle Operations (CVO). CVO is in turn just the motor carrier element of the national Intelligent Transportation Systems (ITS) program. In the national effort to implement ITS, a national architecture and several subordinate architectures have been developed. For that portion of CVO that involves government oversight of motor carriers, the national architecture has been labeled Commercial Vehicle Information Systems and Networks (CVISN). Georgia and many states have been involved in an intensive effort to define requirements for and design a CVISN that would integrate all motor carrier oversight functions throughout the State and with the relevant federal agencies. In this effort, Georgia has:

- Formed a CVISN Working Group composed of key managers from each agency with a motor carrier oversight function,
- Developed a CVISN Business Plan that has been approved by the Federal Motor Carrier Safety Administration (FMCSA),
- Participated (the CVISN Working Group) in a series of FMCSA sponsored workshops to identify requirements and to develop a Top Level Design and an Implementation Plan for Georgia’s CVISN,
- Identified funding for the initial implementation phase of Georgia’s CVISN, and
Selected a program manager, system architect, and integrating contractor for Georgia’s CVISN Phase I Implementation Project.

The primary impact of the CVISN program on the AVI Project was to define the overall State context (CVISN) in which OPE’s OS/OW permitting and weigh station systems will operate. CVISN subsystems common to all motor carrier oversight agencies will:

- Provide a single electronic interface between carriers and all agencies, and
- Share information between agencies about the carriers’, trucks’, and drivers’ credentials, outstanding enforcement issues, and safety records.

DOCUMENTS GENERATED IN THE PERFORMANCE OF THIS PROJECT

The following is a general list of documents produced, at least partially, through the efforts of this project:

- Requirements documents for OS/OW permitted truck electronic clearance, communicated to KTC,
- Various documents on the Port of Savannah OS/OW clearance capability,
- Users Manual for OPE’s Overweight Citations Software,
- Requirements document for the Electronic Carrier Credentialing System (ECCS),
- Georgia’s CVISN Top Level Design Document, and
- Georgia’s CVISN Implementation Plan.

All deliverable documents, in accordance with the Statement of Work, were provided to GDOT.

PROJECT OBJECTIVES

The objectives of this project were modified twice. The primary objective was unchanged, but supporting and ancillary tasks, as well as emphases, evolved due to changes in the Advantage I-75 and CVISN contexts. The objectives are listed below for each of the three phases, and then integrated into a single list of objectives for discussions of project achievements and suggested future work.

Initial Objectives

Under the initial Scope of Services, effective May 1, 1995, the project objectives, as translated into current concepts and language, were:

- Add electronic clearance for OS/OW trucks capability to the Advantage I-75 software for use at the six I-75 weigh stations, including the database necessary to support this capability,
- Extend the electronic clearance of permitted loads capability to two portable teams,
- Develop citation software for use by OPE’s fixed and portable field computers,
- Develop a capability for the participating weigh stations and portable teams to issue OS/OW permits.
Second Phase of Project
After the first change in the Scope of Services, effective September 9, 1998, the project objectives were:
- Add an OS/OW electronic clearance capability to the ACVO software for use at Georgia’s weigh stations,
- Implement an electronic clearance capability for trucks leaving the Port of Savannah,
- Develop citation preparation software for use at weigh stations and portable computers, and an ability to upload the citations to OPE’s central office,
- Develop requirements for, and implement if feasible, an electronic interface between carriers and OPE for the OS/OW permitting function, and
- Assess Virginia’s portable electronic clearance systems for use in Georgia.

It must be noted that these were joint OPE, DOAS, and GTRI objectives. Specifically, GTRI was to provide the coordination and technical lead on all objectives, but GDOT was to do the site construction and related work for the Port of Savannah site, and DOAS (later GDOT and OPE Information Technology staff) was to provide the expertise and programming efforts to modify existing OPE permitting and citation software/databases. It was also recognized that implementation of the electronic interface could be beyond the funding resources of this project.

Final Phase of Project
After the second change in the Scope of Services, effective September 6, 2000, the project objectives were:
- Develop an OS/OW electronic clearance capability to be added to the ACVO system at a later time,
- Develop citation preparation software for OPE’s portable field computers,
- Develop requirements for an electronic/digital interface between carriers and OPE for the OS/OW permits function,
- Install the MACS Operations Center and develop screening criteria for use at the weigh stations, and
- Incorporate this project’s products into the CVISN Top Level Design.

It must be noted that the full realization of these objectives (1) was the joint responsibility of GTRI and OPE, and (2) depended on the KTC for the MACS software and documentation. GTRI was responsible for defining requirements and coordinating joint action by all involved entities to meet the objectives.

Consolidated Objectives
The following is a list of all objectives that existed at some time during the course of the AVI Project:
- Add an OS/OW electronic clearance capability to the ACVO software for use at Georgia’s weigh stations,
- Extend the electronic clearance of permitted loads capability to two portable teams,
- Develop a capability for the participating weigh stations and portable teams to issue OS/OW permits.
• Implement an electronic clearance capability for trucks leaving the Port of Savannah,
• Develop citation preparation software for use at weigh stations and portable computers,
• Develop requirements for an electronic interface between carriers and OPE for the OS/OW permitting function, and
• Assess Virginia’s portable electronic clearance systems for possible use in Georgia.
• Install the MACS Operations Center and develop screening criteria for use at the weigh stations.
• Incorporate this project’s products into the CVISN Top Level Design and Implementation Plan.

This consolidated list of objectives will be used to document the accomplishments of the project.

ACCOMPLISHMENTS
Accomplishments are identified for each of the objectives in the consolidated list above. In those cases where the objective was modified the full scope of the objective is addressed. In those cases where the objective was dropped, progress toward the objective is provided. Where appropriate, the rationale for that action is provided.

Add An OS/OW Electronic Clearance Capability To The ACVO Software For Use At Georgia’s Weigh Stations
Under the initial Scope of Services, GTRI was to develop the requirements for this capability and provide them to KTC in the form of an appendix to the Advantage I-75 system specification. The AVI project was to pay the Advantage I-75 integrating contractor to implement the capability under the oversight of KTC (with GTRI participation).

Because the integrating contractor’s services were discontinued, GTRI decided to do this task internally, but soon thereafter KTC decided to have the MACS software redesigned by a contractor. KTC agreed to have the OS/OW clearance capability added by the new contractor in accordance with requirements provided by GTRI.

This capability was fully developed and can be placed in operation at any time in the future with minimal effort. To place this capability in operation, an ability to pass information from the OPE permits database to the MACS Operations Center software will be required.

In the last phase of the project, the OPE administrator decided that electronic clearance of permitted loads could not be placed in operation until the CVIEW component of Georgia’s CVISN is implemented (see the description of CVISN above). The CVIEW will provide current information about credentials, enforcement actions, and safety inspection results for carriers, trucks, and drivers. This information is essential to make knowledgeable permitting decisions at OPE and to make meaningful screening decisions at the weigh stations.
Extend The Electronic Clearance Of Permitted Loads Capability To Two Portable Teams
This objective was dropped in view of the difficulty in implementing electronic clearance technology for portable weighing operations. An objective to evaluate Virginia’s portable electronic screening system for possible use in Georgia was substituted for this one.

Develop A Capability For The Participating Weigh Stations And Portable Teams To Issue OS/OW Permits
This objective was dropped, as it was decided that permits would only be issued at OPE’s central office.

Implement An Electronic Clearance Capability For Trucks Leaving The Port Of Savannah
This objective was added in lieu of dropped objectives above. GTRI was to determine the requirements and develop a design for the site. GDOT was to be responsible for the site construction.

Two trips were made to the Port of Savannah. The first was a joint GDOT and GTRI trip to meet with the Port management and to solicit their support for the effort. That support was obtained but no official commitments were made on either side. A second trip was made by GTRI to develop requirements for the capability. A complete set of photographs and measurements were made of all Port exits. Requirements work performed at GTRI included determination of potential locations for the transponder readers, consideration of potential computer locations, collection of reader pricing information, etc. Exit queue back-up over the reader locations was of particular concern. Since this site would differ significantly from a weigh station, the potential need for changes to the MACS software was identified. Settling of the MACS software issues and selection of the final location for readers could not be completed until the updated MACS software was available from KTC.

This objective was dropped since the I-16 and I-95 weigh stations would not be upgraded for some time and electronic clearance capability for permitted loads would not be activated until the CVIEW is implemented.

Develop Citation Preparation Software For Use At Weigh Stations And Portable Computers
This was an original objective that survived all phases of the project. The citation software was developed, underwent extensive review and testing by OPE, and was delivered and documented.

Develop Requirements For An Electronic Interface Between Carriers And OPE For The OS/OW Permitting Function
This objective was added in lieu of dropped objectives. GTRI was to determine requirements for such an interface and then a decision would be made as to if and how it could be implemented.
During the course of this project, two separate projects (CVO Institutional Issues Study (IIS) and CVISN) developed a similar requirement for all credentialing; i.e., an ability for motor carriers to apply for, pay for, and receive all credentials electronically (to the degree possible). Since the IIS and CVISN requirement was larger in scope, this objective was reduced to assuring that the products of those projects satisfied this objective.

*This objective was fully accomplished.* The requirements for the Electronic Carrier Credentialing Subsystem (ECCS) from the IIS were analyzed and adjusted where necessary to assure that OPE’s requirements for electronic OS/OW permitting were accommodated. Later, the CVISN plans were also analyzed and adjusted to assure that the implementation of the ECCS (called the Carrier – Agency Interface in the CVISN documents), also reflected OPE’s priorities.

**Assess Virginia’s Portable Electronic Clearance Systems For Possible Use In Georgia**
This objective was added in lieu of the objective to extend the ACVO electronic clearance capability to two portable teams.

Existing documentation on Virginia’s mobile electronic screening system was collected and analyzed. The system was not in operation at that time, but did undergo some field tests. A demonstration of the system was witnessed, but it was still not fully operational at that time. The status of the system was periodically updated.

This objective was dropped due its low priority, and higher priority objectives were substituted.

**Install The MACS Operations Center And Develop Screening Criteria**
The ACVO system had now been absorbed by NORPASS and KTC indicated their intent to discontinue the ACVO Operations Center. Electronic clearance in Georgia could not continue without a State Operations Center.

Although not within the scope of this project, it was determined that it would be more efficient for GTRI to upgrade the computers and install the MACS 75 software at the six I-75 weigh stations. The operating systems and several items of hardware were replaced for each screening computer. The weigh stations were also connected to the GDOT network.

The MACS Operating Center software was successfully installed on a GDOT owned PC at GTRI. This was connected to the weigh stations via dial-up modems. The complete operation of the Electronic Screening System (ESS) was demonstrated. Because of the transition of OPE functions to the Georgia Department of Motor Vehicle Safety (DMVS), and the transition of ITS responsibility to Office of Traffic Operations (OTO), it was decided that the Operations Center computer should remain at GTRI until a follow on contract could be implemented to train OTO and/or DMVS personnel in its operation.

Screening criteria must be determined in cooperation with the future operators of the ESS (assumed to be either GDOT/OTO or DMVS). Once the screening criteria are set and the CVISN information is available, the sampling rate (for pull-in and weighing of trucks) can be
maintained for each carrier. This can currently be accomplished at the Operations Center and downloaded to all weigh stations or can be set locally at individual weigh stations.

Virtual networking software was also installed for maintenance purposes.

This objective was fully accomplished, but must wait for the transitions mentioned to be placed in operation.

**Incorporate This Project’s Products Into Georgia’s CVISN Design and Plan**

This objective was added to assure that this electronic screening capability, as reflected in the products of the project, are incorporated into the CVISN Top Level Design and Implementation Plan documents.

*This objective was fully accomplished.* The current CVISN Top-Level Design and Implementation Plans fully incorporate the AVI Project products. The OS/OW Permitting and Electronic Screening functions defined in the CVISN design and implementation documents reflect OPE’s plans to continue the efforts begun in this project.

**RECOMMENDED FUTURE EFFORTS**

Since not all project objectives were fully accomplished, recommendations are offered for work efforts to complete these objectives in the future. The recommendations are organized by the consolidated list of project objects, as was accomplishments.

**OS/OW Electronic Clearance Capability At Georgia’s Weigh Stations**

Any unfinished efforts on this objective will be completed in Georgia’s CVISN project.

**Electronic Clearance Of Permitted Loads by Portable Teams**

This objective is included in Georgia’s CVISN project, but is not scheduled for CVISN Phase I implementation. It will come in a later phase.

**Weigh Stations And Portable Teams Issuance of OS/OW Permits**

With established network communication to all weigh stations, this would be rather simple to implement at the weigh stations. When wireless communication is established with mobile units, this capability would be equally simple to implement for them.

**Electronic Clearance of Trucks Leaving The Port Of Savannah**

This is an objective that can be revived at a later date if desired. Documentation of preliminary work performed will be kept for some time.

**Citation Preparation Software**

While this objective was fully achieved, OPE did plan to revisit its use of this software once a new Citation System was developed. This function will move to the new Department of Motor Vehicle Safety (DMVS) in mid 2001 and that agency will make future decisions on this software. A standard software package for completing all field enforcement forms/reports is being developed for use throughout Georgia. This software, called Traffic and Criminal Software (TraCS), will be ready for deployment in late 2001.
Carriers – Agency Interface for Electronic Credentialing
This objective is included in Georgia’s CVISN project as its top priority. The CAI will be the first subsystem implemented, and OPE’s OS/OW permitting function will be one of the first implemented.

Georgia’s Electronic Clearance Operations Center And Screening Criteria
While this objective was fully accomplished, OPE decided that due to the transition of its OS/OW enforcement function to DMVS, it could not staff an operations center at this time. The computer for this function remains at GTRI until transition plans become firm. In getting the Model MACS software and the Operations Center up and running, GTRI identified a number of integration issues between Model MACS and other systems at Georgia’s weigh stations. OPE and OMR have issued another project to GTRI to determine how to deal with these integration issues.

In the future, the CVISN project will integrate the Operations Center (as well as other OPE and DMVS systems) into an overall CVISN architecture.

CVISN Top Level Design and Implementation Plan
No follow up is necessary for this objective.