ITS/CVO
STRATEGIC & BUSINESS PLAN
For The State Of Georgia

December 1997
(Revised May 1998)

Prepared by
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With the Assistance of:
William R. Youngblood, Georgia Tech Research Institute (Consultant)


DEPARTMENT OF REVENUE
GEORGIA

AGREEMENT TO WORK COOPERATIVELY TO IMPLEMENT THIS JOINT ITS/CVO PROGRAM

Acknowledging that we can more effectively execute our responsibilities to the public by working cooperatively, we pledge to continue the joint effort that produced this plan. We believe that modern, integrated information systems and technologies, such as those proposed in this plan, are the key to better communication among ourselves and to more efficient performance, both mutually and separately. Recognizing the uncertainties in our political, legislative and funding processes, we further commit our agencies to make a good faith effort to implement the concepts of this plan (which will be refined as the plan is made more specific).

_____
Wayne Shackelford, Commissioner
Georgia Department of Transportation

_____
Stan Wise, Chairman
Georgia Public Service Commission

_____
T. Jerry Jackson, Commissioner
Georgia Department of Revenue

_____
Col. Sid Miles, Commissioner
Georgia Department of Public Safety

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Ed Crowell, Executive Director
Georgia Motor Trucking Association

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EXECUTIVE SUMMARY

This document records the State of Georgia's strategic and tactical plans for employing ITS/CVO technology to improve its Commercial Vehicle Administration (CVA) functions. The process by which this plan was developed included a detailed assessment of the agencies' credentialing and enforcement processes. The information gathered in this assessment was used to identify desired improvement areas and technical approaches to realizing this improvement.

Commitment. A major strength of Georgia's ITS/CVO program is the commitment of the Working Group and agency top-level Administrators. Most Working Group members have participated actively in all of its meetings, and the agency Administrators have committed to continue this effort and to implement this plan (demonstrated by signing this document).

Motivation for Improvement. The Working Group identified several problem areas that they would like to improve through the use of technology:

- Cooperative interactions between CVA agencies - The agencies are desirous of such interactions but their current information systems cannot support efficient data sharing.
- Improved functional efficiency within each CVA agency - This objective can also be realized with improved information systems and information sharing between the agencies.
- Focusing of limited resources - The few problem carriers should receive full enforcement attention, but the impact of enforcement activities on responsible carriers should be reduced.

Overall Program Foundation. The overall program plan presented herein is based on the desired improvement areas and:

- Georgia's complete CVISN architecture, which is presented herein.
- Georgia's substantial on-going ITS/CVO projects, which will contribute significantly to each of the desired Major Capabilities identified below.
- A logical progression of projects that build on the on-going ITS/CVO projects to complete Georgia's CVISN system.

Major Capabilities To be Developed. This plan would develop the following capabilities:

- An integrated carrier-agency credentialing interface
- An integrated capability among agencies for sharing interstate/national CVA information
- An integrated capability among agencies for sharing intrastate CVA information
- Common computer and software aids for field enforcement activities
- A common digital wireline communications capability for enforcement
- A common wireless digital communications for enforcement's mobile/vehicle systems
- A full electronic screening capability for enforcement's roadside facilities and vehicles

Preliminary Planning Estimates. This plan estimates that Georgia's *initial* CVISN capability can be realized in about two years at a cost of about $2,000,000 plus about $300,000 for Requirements Engineering. Continuing expenses have not been estimated. These estimates are subject to revision as the detailed plans are completed and *do not imply agency commitments at this time*.

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ACRONYMS AND DEFINITIONS

Adv CVO	- Abbreviation for Advantage CVO, the Electronic Clearance project formerly known as Advantage I-75
App	- Abbreviation for application, referring to a software program
ATIS	- Advanced Traveler Information Systems, a primary category of ITS
ATMS	- Advanced Traffic (or Transportation) Management Systems, a primary category of ITS
AVI	- Automatic Vehicle Identification, a name for the process of identifying vehicles via use of an on-board transponder
Browser	- A standard type of program used to access the Internet and interact with World Wide Web (WWW) sites via the Internet, the most popular Browsers are Netscape's Navigator and Microsoft's Explorer.
CATS	- Carrier Automated Transaction System, the CVISN defined software that interfaces between the carriers and credentialing agencies
CDL	- Commercial Drivers License, as distinct from a standard drivers license.
CDLIS	- Commercial Drivers License Information System, a national level database concerning commercial drivers credentials and problems
CI	- Credentialing Interface, the CVISN component that hosts all interfaces between carriers/agents/local credentialing offices and CVA agencies' legacy systems
Credentialing	- The process of providing credentials to carriers, their vehicles, and their loads. Includes drivers licensing, vehicle registration, operating authority issuance, fuel tax registration, and permitting of unavoidable oversize or overweight loads.
CTCs	- County Tax Commissioners, who are responsible for Registration of intrastate carrier vehicles as well as ad valorem taxes on all vehicles.
CVA	- Commercial Vehicle Administration, the total of governmental functions involved in the oversight of carriers in the state of Georgia.
CVIEW	- Commercial Vehicle Information Exchange Window, a CVISN component that hosts the State CVA Databases and, in versions under development, a portion of Georgia's IAI component
CVISN	- Commercial Vehicle Information Systems and Networks, the national level program for defining and implementing the CVO portion of the national ITS architecture.
CVO	- Commercial Vehicle Operations, a primary category of ITS
DB	- Abbreviation for database
DOAS	- Department of Administrative Services, a Department in Georgia's state government that provides computer support to other state agencies
DOR	- Department of Revenue, Georgia's agency responsible for collecting state taxes, and overseeing vehicle titling and vehicle registration
DPS	- Department of Public Safety, Georgia's state level agency responsible for law enforcement, drivers licensing, and accident investigation & reporting
EDI	Electronic Data Interchange, a standard high level communication protocol the defines data elements and transaction sets for ITS/CVO uses

Electronic Permitting	- The use of electronics to issue and check permits for oversize or overweight loads. Works in conjunction with Electronic Clearance
Electronic Screening	- Use of electronics to identify approaching vehicles, carriers, and drivers and deciding whether to stop the vehicle for enforcement purposes
FARS	- Fatality Analysis Reporting System, a national database of fatal accidents
FHWA	- Federal Highway Administration, the US DOT agency for highways
GDOT	- Georgia DOT, responsible for the state's transportation system
HAZMAT	- Hazardous Materials, those materials being transported that are dangerous to people and the environment
HW	- Abbreviation for hardware, usually computer system hardware
IAI	- Inter-Agency Interface, the Georgia CVISN component that hosts all interfaces between CVA agencies' legacy systems and between the legacy systems and the National and State CVA Database components
IFTA	- International Fuel Tax Agreement, an agreement between the States for collecting and sharing fuel taxes from interstate carriers.
IFTA, Inc	- A national level clearinghouse for exchange of IFTA related information and funds, one of the National CVA Database components
IRP	- International Registration Plan, an agreement between the States for registering interstate carriers' vehicles and distributing associated fees.
IRP, Inc	- A national level clearinghouse for exchange of IRP related information and funds, one of the National CVA Database components
ITS	- Intelligent Transportation Systems, a term for advanced technology aids to transportation related functions.
LSI	- Legacy System Interface, a CVISN component that resides with the CVA agencies' legacy system that enables it to exchange data with either the CI or the IAI
LSI/Mod	The combination of the LSI and Mod CVISN components
MCSAP	- Motor Carrier Safety Assistance Program, a federal program for State agencies responsible for oversight of carrier safety that provides operating funds and equipment
Mod	- Abbreviation for modification, referring to changes to the CVA agencies' legacy systems to support exchange of data with the CI and IAI
OMC	- Office of Motor Carriers, the FHWA Office responsible for the federal oversight role of motor carriers
OPE	- Office of Permits and Enforcement, the GDOT Office responsible for enforcement of truck size/weight laws and those regulating DOR's functions, and issuing permits for nondivisible OS/OW loads.
OS	- Oversize
OW	- Overweight
Permitting	- The process for granting permits for nondivisible loads that are over the legal limits for size and weight
PC	- Abbreviation for Personal Computer
PC-CATS	- The PC hosted version of CATS
PSC	- Public Service Commission, Georgia's state agency responsible for granting carrier's Operating Authority, and for assuring safe operations

RFP	- Request for Proposal, a solicitation for proposals on a piece of work
RPC	- Regional Processing Center, in this case the IFTA RPC in New York that provides support for the IFTA functions of several states
Rqmts	- Abbreviation for requirements
SAFER	- Safety and Fitness Electronic Records, a National CVA Database of safety related carrier information
SafetyNet	- The FHWA/OMC software system that supports PSC's record keeping and federal reporting of carrier audits and vehicle inspections
SSRS	- Single State Registration System, the base-state system for granting Operating Authority to interstate carriers for all jurisdictions in which they operate and distributing the fees involved.
Stakeholder	- An organization or person who has a stake in ITS, in this case referring to CVO and CVA; namely the CVA agencies, carriers, drivers, etc.
Stds	- Abbreviation for standards
SW	- Abbreviation for Software, usually meaning application software, but frequently including the database for a function.
Sys	- Abbreviation for system
Transponder	- An electronic device that supports an electronic exchange of information between the transponder carrying vehicle and a 'reader' at an infrastructure location or in another vehicle.
VISTA	- Vehicle Information System for Tax Apportionment, a commercial support service for IFTA provided by the Lockheed-Martin Corporation
Web-CATS	- The web site version of CATS, hosted on the CI component of CVISN, and accessed by the carrier through a standard browser
Wireless Communication	- The communication of information, usually digital for current purposes, via radiation (e.g., radio or infrared signal), as opposed to through wires
Wireline Communication	- The communication of information, usually digital for current purposes, via metallic or optical fiber wires, as opposed to through radiated signal

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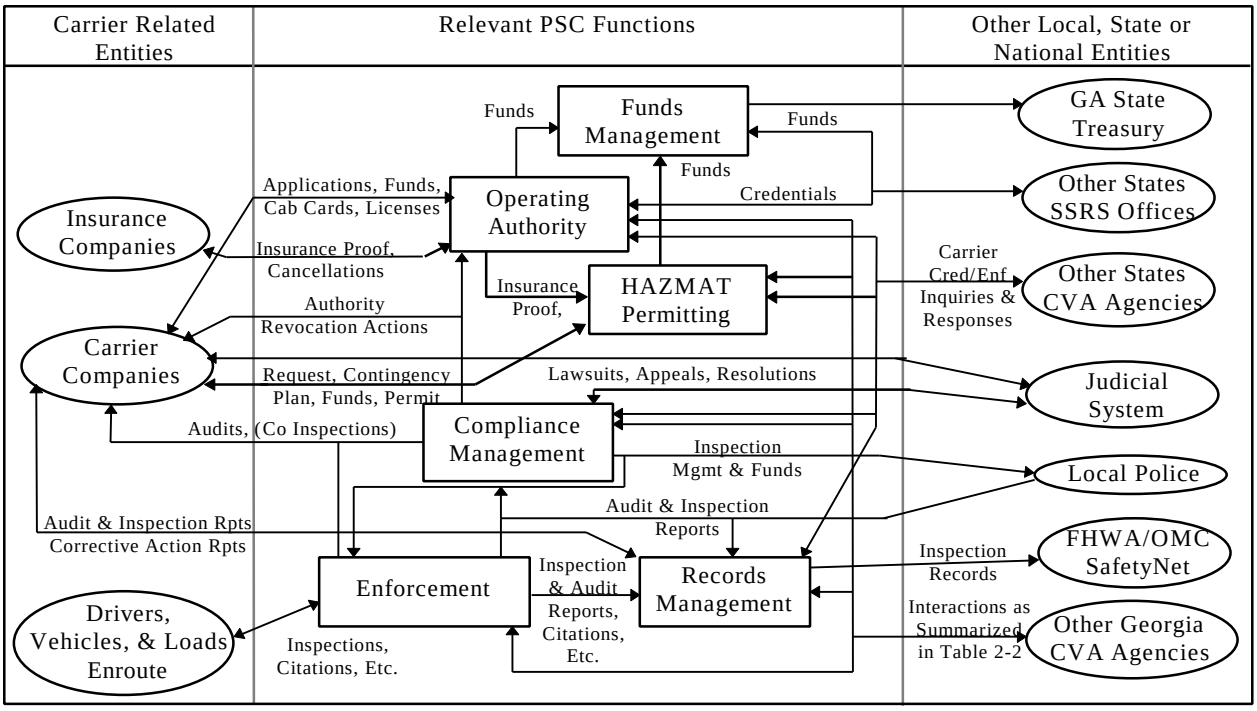

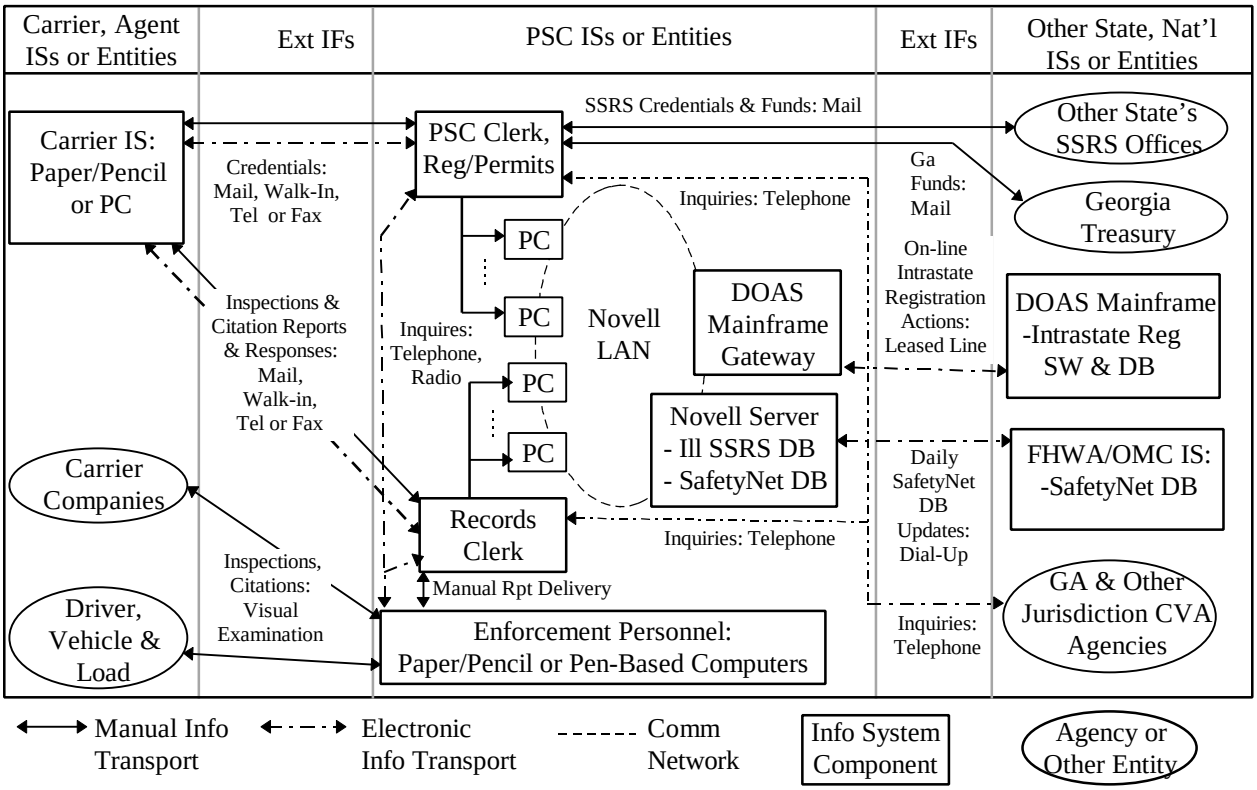

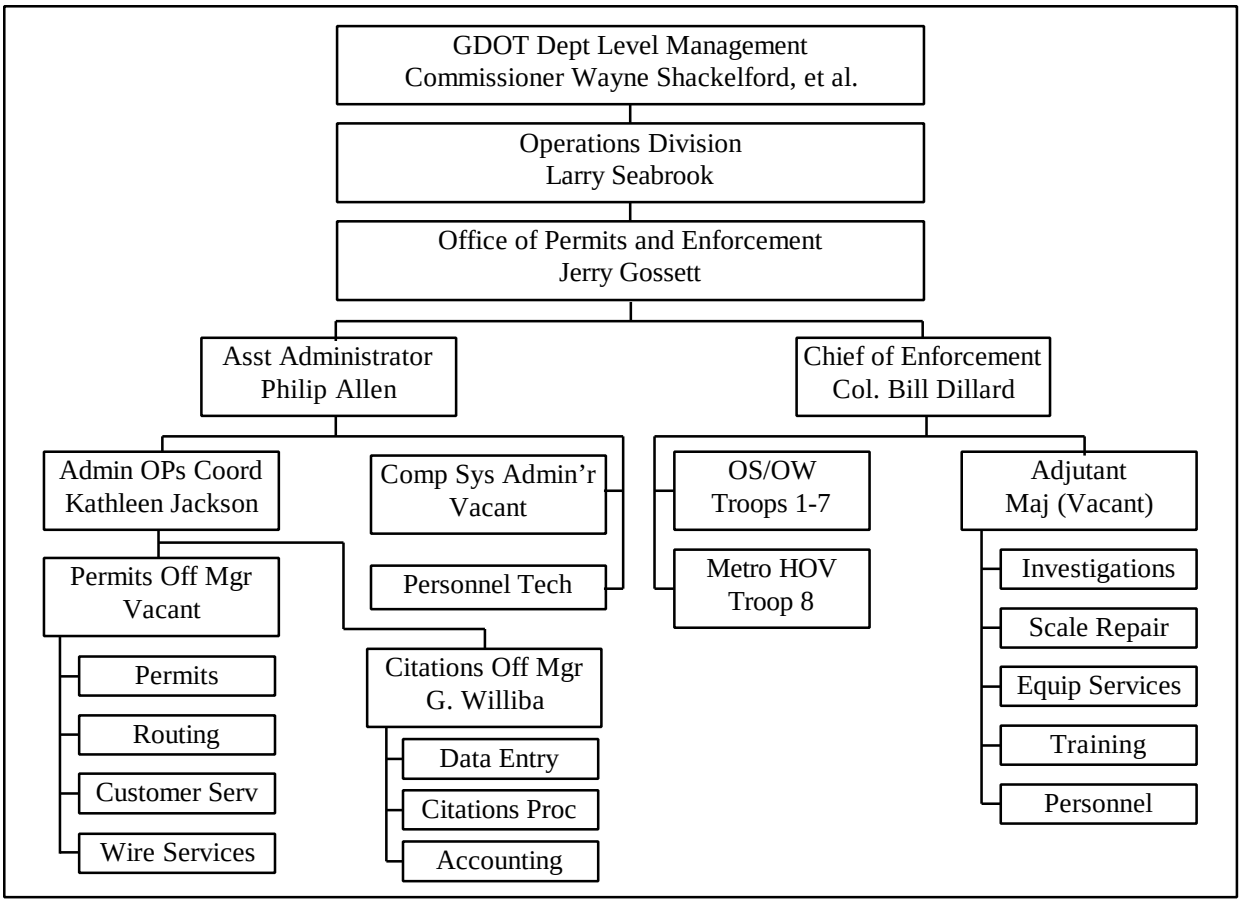

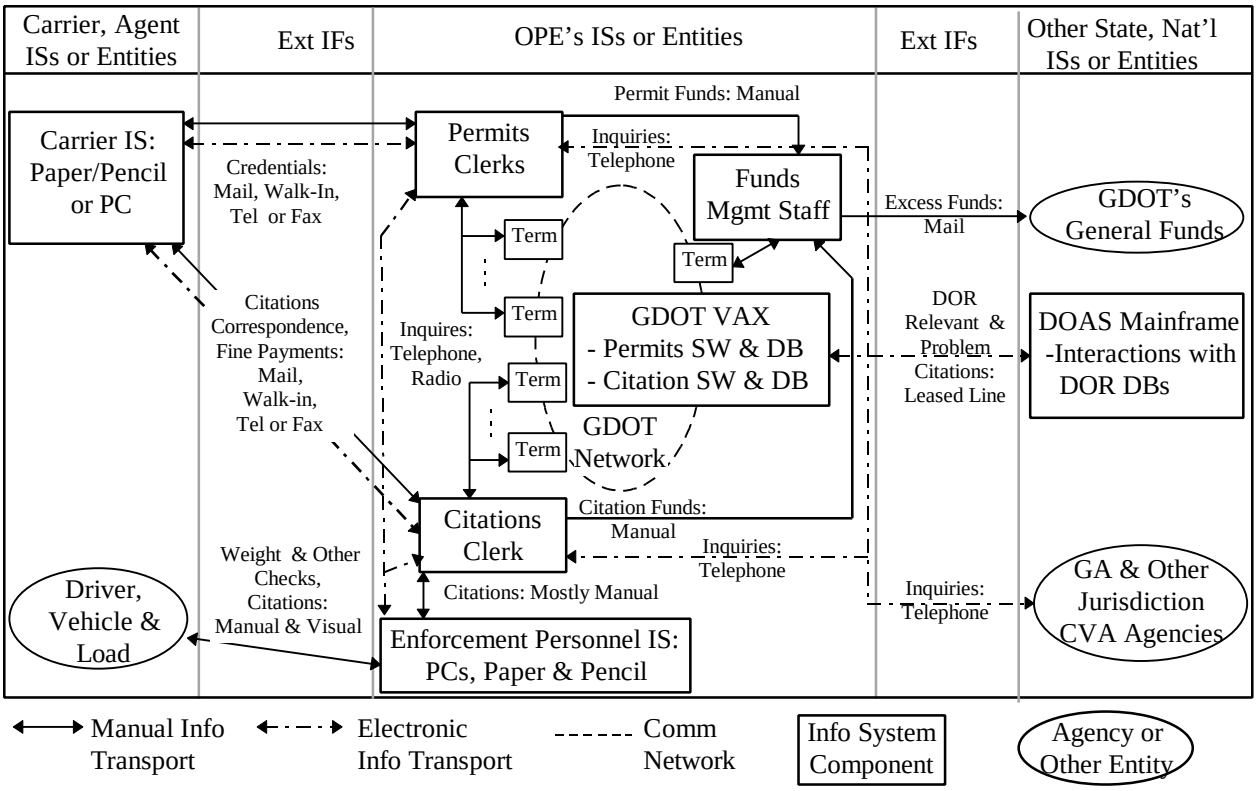

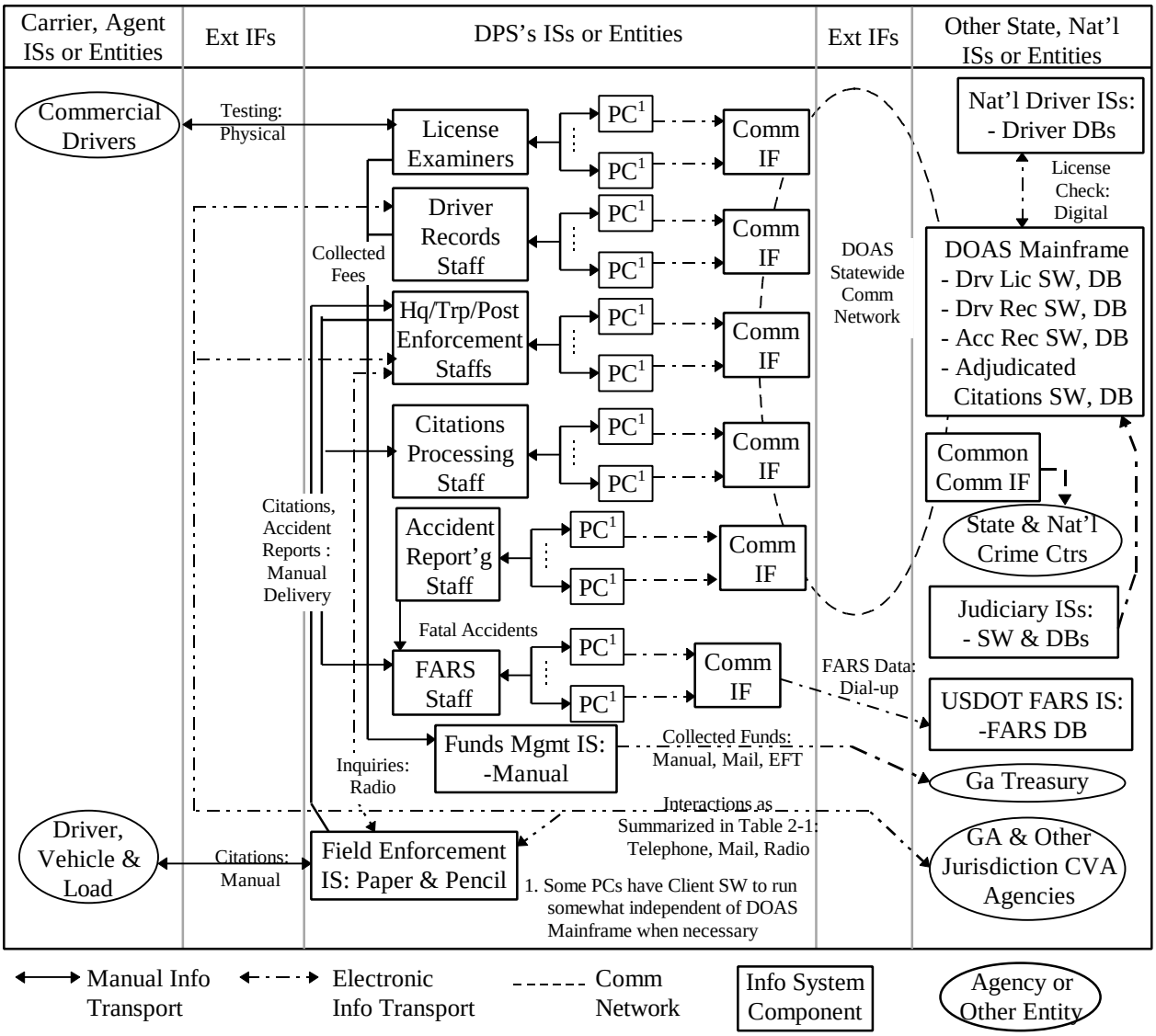

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INTRODUCTION

This section identifies the purpose and scope of this document, provides the background and context in which it was generated, describes the process by which it was created, and finally summarizes its content.

1.1 PURPOSE AND SCOPE

This document is a strategic plan for developing and implementing an integrated set of Intelligent Transportation System (ITS) User Services that specifically addresses the needs of those agencies responsible for the oversight of property and passenger carriers in the state of Georgia. The primary product of this plan is a recommended set of projects to implement these ITS User Services in each of the agencies involved.

1.2 BACKGROUND/CONTEXT

At the national level, the Federal Highway Administration (FHWA) has developed a National ITS Architecture which defined the major components and structure of ITS, particularly those aspects that must be standardized to ensure national compatibility. Georgia is nearing completion of its own ITS Strategic Deployment Plan, which defines the State's compatible ITS architecture and provides plans (at a high level) for the major efforts required to implement that architecture. *See Appendix A for an overview of Georgia's ITS Strategic Deployment Plan, focusing on the Commercial Vehicle Administration (CVA) stakeholder category and the CVA functions for which ITS aids could be beneficial.*

The FHWA has continued to develop the National ITS Architecture, particularly for Commercial Vehicle Operations (CVO). The national ITS/CVO development program is called Commercial Vehicle Information Systems and Networks (CVISN). *This plan represents the further development of Georgia's ITS Strategic Deployment Plan for CVO in a manner compatible with CVISN and faithful to Georgia's needs.* This plan was developed under the CVO Mainstreaming program.

1.3 OVERVIEW OF THE BUSINESS PLANNING PROCESS

This overview of the process by which this plan was created addresses the following topics:

- Members of Georgia's ITS/CVO Mainstreaming Working Group,
- Selection of a consultant to assist in preparation the plan,
- A summary of the business meetings of the committee.

1.3.1 Members of the ITS/CVO Mainstreaming Committee

Each of Georgia's commercial vehicle functions had primary and usually alternate members of the committee. These individuals and contact information are identified in Table 1-1 below.

Table 4-1 ITS/CVO Working Group Members and Contact Information

Member, Position and Address	Telephone & Fax Number, E-Mail Address
Lucia Ramey, Director of Compliance and Quality Control Public Service Commission 1007 Virginia Avenue, Suite 310 Hapeville GA 30354	Tel: 404-559-6626 Fax: 404-559-4906 e-mail luciar@psc.state.ga.us
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Table 4-1 ITS/CVO Working Group Members and Contact Information

Member, Position and Address	Telephone & Fax Number, E-Mail Address
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Art Carey, Asst to Dale, Motor Fuel Tax Unit Sales and Use Tax Division Georgia Department of Revenue Trinity Washington Bldg, Room xxx Atlanta GA 30334	Tel: 404-657-1590 Fax: 404-657-7076 e-mail: acarey@rev.state.ga.us
Guy Young Georgia Motor Trucking Association 1280 West Peachtree St., Suite 300 Atlanta GA 30309	Tel: 404-876-4313 Fax: 404-874-9765 e-mail:

1.3.2 Selection of a Consultant and the Consultant's Role

It was anticipated that a significant effort would be required to adequately document current processes and systems within Georgia's Commercial Vehicle Administration agencies. The time necessary for that effort and to prepare a quality plan was expected to be more than the ITS/CVO Working Group members could devote to the effort. For these reasons, the Group elected to hire a consultant to do the primary data collection, facilitate their efforts, and assist in preparing this plan. The Georgia Tech Research Institute was chosen based on their involvement in developing other ITS and information system plans for the Georgia DOT, including Georgia's ITS Strategic Deployment Plan.

1.3.3 Approach to Developing This Plan

This plan was prepared via a systematic collection and development of the knowledge necessary to improve the service, efficiency, and effectiveness of Commercial Vehicle Administration in the State of Georgia. This effort consisted of the following efforts:

- The first order of business was to document the current situation in order to have a common understanding of each other's functions, organizations, key personnel, and current information systems.
- The second step was to translate the Working Group's overall goals into a mission statement, and then define ITS/CVO program objectives that would accomplish the mission.
- The next critical step was to determine the project sets that would be necessary to realize the ITS/CVO program objectives.
- Thereafter, the project sets were organized into a high-level plan, including priorities, approximate schedules, planning estimates of costs, and initial agency roles in the project sets.
- This ITS/CVO Strategic and Business Plan was prepared to document the above efforts and results.

Specific activities involved in all but the last of these efforts are described in subordinate paragraphs.

1.3.3.1 Documenting the Current Situation

The current situation was documented by the consultant via interviews of key individuals within each of the agencies, including the Working Group members. These descriptions of the CVA agencies, functions, organizations, key personnel, interactions, and information systems were first reviewed by the subject agencies for accuracy and then presented to the whole Working Group.

1.3.3.2 Developing Working Group Mission and Objectives Statements

This effort began with preliminary discussions between the Working Group members and the consultant. Thereafter, the consultant prepared suggested mission and objectives statements, along with guiding principles. These suggestions were discussed by the Working Group, several changes made, and final versions agreed upon.

1.3.3.3 Identifying ITS/CVO Project Sets

The consultant developed an information system architecture for the overall CVA function that would achieve the Working Group's objectives, identifying those components that must be developed from scratch or upgraded from current systems. The Working Group identified several on-going projects within their agencies aimed at improving their information systems. Project sets were then defined to integrate and build upon these on-going projects to develop the new or upgraded components necessary to realize the desired CVA information system architecture. All results of these efforts were presented to the Working Group, discussed at length, and approved as the basis for the next phase.

1.3.3.4 Developing a High-Level Implementation Plan

The consultant took the project sets resulting from the previous step and identified rough priorities, developed planning cost estimates for the early phases of the project sets, suggested an overall rough schedule, and recommended agency roles in each project set. These results were reviewed and accepted by each member of the Working Group.

1.3.3.5 Documenting the Plan

The Preliminary Draft of the Plan was prepared by the consultant. The Preliminary draft was reviewed by the Working Group and others within their agencies and comments provided. The consultant incorporated the Working Group's inputs to create an Initial Draft. The Kentucky Transportation Center's (the regional ITS/CVO champion) reviewed the Initial draft and provided comments. These comments were incorporated by to produce the Final Draft of the Plan. FHWA's comments have been incorporated into this version of the document.

1.3.4 Summary of Committee Business Meetings

The committee met a number of times during the preparation of this plan. Those conducted after the consultant was hired are documented herein. These meetings are documented as to the primary purpose of the meetings, the nature of the discussions held, and the substantial results of the meetings.

1.3.4.1 Initial Meeting

The initial meeting was held on July 2, 1997 for the purposes of:

- Reviewing the objectives and approach in planning Georgia's Mainstreaming Program,
- Establishing the relative roles of the consultant and the committee, and
- Setting the agenda and schedule for the consultant's data gathering visit to each agency.

The purposes of the meeting were accomplished.

1.3.4.2 Second Meeting

The second meeting of the Committee was held on September 5, 1997 for the purposes of:

- Reviewing descriptions of the agencies' current processes and systems,
- Developing a mission statement, guidelines, and general goals and objectives for Georgia's ITS/CVO Mainstreaming Program.

The purposes of the meeting were accomplished.

1.3.4.3 Third Meeting

The third meeting was held on November 20, 1997 to receive the consultants' recommendations for specific project sets to implement the program's goals and objectives. These project sets were described in general, but detailed discussions were postponed to give the working group more time to consider the proposed project sets.

1.3.4.4 Fourth Meeting

The fourth meeting was held on December 3, 1997 for detailed discussions of the proposed projects. After detailed discussions the working group agreed that these were the desired project sets to develop the desired long term capability. At this meeting, the Working Group also decided that a mechanism was needed to obtain the commitment of top level management within each agency to the plan. A signature page in the front of the plan was the agreed upon mechanism.

1.4 ORGANIZATION OF THE PLAN

This plan leads the reader through the logic used to develop Georgia's ITS/CVO Strategic and Business Plan.

Section 2 describes the current situation within Georgia's Commercial Vehicle Administration agencies in terms of their organizations, processes, and information systems.

Section 3 provides a Strategic Overview of Georgia's ITS/CVO Program. The program will be described in terms of the vision that the Work Group sees for Commercial Vehicle Administration in Georgia, the mission it has set for itself, and the goals and objectives implied by the mission.

Section 4 presents Georgia's ITS/CVO Program Summary, which identified the projects proposed to satisfy the Georgia's ITS/CVO Working Group mission, goals, and objectives.

Section 5 presents the Organization and Management Approach to implementing the projects presented in Section 4. The topics of cost, schedule, and roles are addressed.

Appendix A reviews Georgia's ITS Strategic Deployment Plans, focusing on ITS Aids to Commercial Vehicle Administration (CVA).

2. CURRENT SITUATION WITHIN GEORGIA'S COMMERCIAL VEHICLE ADMINISTRATION (CVA) AGENCIES

The section defines the CVA functions and the agencies responsible for those functions, describes the Georgia agencies that performs these CVA functions, and then identifies current or planned use of ITS related technology use within these agencies.

2.1 THE CVA FUNCTIONS

This subsection provides a state level view of the CVA function, which is the total of Georgia agency functions involving oversight of commercial vehicles. This overall view identifies the:

- Commercial Vehicle Administration functions,
- Georgia agencies that perform these functions, and
- Relevant interactions between these functions/agencies and with external agencies.

Each of these topics are addressed in the following subsections.

2.1.1 Commercial Vehicle Administration Functions

The carrier vehicle 'system' is composed of a carrier company, vehicle, driver and load. Each of these system components requires credentials and is subject to rules/laws of operation. The processes that issue credentials and those that enforce compliance with the applicable rules/laws (in addition to credentials requirements) will be referred to as CVA 'functions,' and are identified in Table 2-1 below. In addition, though not shown in the table, there are adjudication/appeal functions to resolve disputes over credentials and enforcement actions. These credentials requirements and enforcement issues differ somewhat between Commercial Vehicles that operate intrastate and those that operate interstate.

Table 2-1 Commercial Vehicle Administration Functions

CV 'System' Component	Intrastate		Interstate	
	Credentials	**Enforcement Issues (beyond Credentials)**	**Credentials**	**Enforcement Issues (beyond Credentials)**
Carrier (Company)	-Operating Authority -Insurance	-Operation/Business Records	-Operating Authority -Insurance	-Operation/Business Records
Driver	-Commercial License -Medical Exam	-Traffic Laws -Work Rules -Operation Log	-Commercial License -Medical Exam	-Traffic Laws -Work Rules -Operation Logs
Vehicle/ Equipment	-Title or lease docs -Registration	-Safe Operation	-Title or lease docs -Registration -Fuel tax license	-Safe Operation -Fuel/Use Tax Payment
Load	-OS/OW Permits -HAZMAT Permits	-Size and Weight Laws -HAZMAT transport laws	-OS/OW Permits -HAZMAT Permits	-Size and Weight Laws -HAZMAT transport laws

Only those credentialing and enforcement functions performed by state and local Georgia agencies will be addressed in this analysis, which leaves out the Medical Exam credentials. Items shown in parentheses are presented, verified or certified as part of the function with which they appear.

2.1.2 Commercial Vehicle Administration Agencies

The agencies responsible for the identified CVA functions are:

The Department of Revenue (DOR) has the relevant functions of Vehicle Titles, Vehicle Registration/Tags (Interstate), and Fuel and Road Use Taxes (Registration and Payment). All Vehicle Registration records are maintained by the DOR. Ad Valorem tax payment receipts are required by DOR when registering interstate carrier vehicles.

The Public Service Commission (PSC) has the relevant functions of issuing Operating Authority, maintaining proof of insurance for all for-hire carriers, issuing Permits for transport of Hazardous Materials (HAZMAT) when necessary, assuring Safe Operation of/by all carriers, drivers and vehicles, and Enforcement of laws regarding Operating Authority and Safe Operations.

The Department of Public Safety (DPS) has the relevant functions of Commercial Drivers Licensing and Law Enforcement (in general), and Accident Investigation and Reporting.

The Department of Transportation (DOT) has the relevant functions of Enforcement of laws governing truck size and weight, Permitting of necessary exceptions to the size and weight laws. DOT Enforcement also enforces all laws on Georgia DOT (GDOT) property, and specific laws under some circumstances. DOT is also responsible for Enforcement of DOR's Vehicle Titling, Vehicle Registration and Fuel and Road Use Taxation functions for carriers.

Other State and Local Agencies involved include:

- *County Tax Commissioners (CTC),* who perform the Vehicle Registration (Intrastate) and Trailer Registration/Tags functions, and collect Ad Valorem taxes on vehicles and trailers.
- *Local Police,* who participate in and assist PSC, DPS and DOT Enforcement functions;
- *Judicial system,* which adjudicates traffic citations and legal challenges; and
- *Office of Administrative Hearings,* which adjudicates appeals on overweight (OW) citations.

These agencies and their primary responsibilities (CVA functions) are summarized in Table 2-2 .

Table 2-2 Summary of CVA Agency Functional Responsibilities

Agency	Commercial Vehicle System Component			
	Carrier	**Driver**	**Vehicle/Equip**	**Load**
DOR	C(Fuel Tax License)		C (Interstate)	
PSC	C, E	E (safety)	E (safety)	C(HAZMAT), E(Safety)
DPS		C, E		
DOT			E (Veh reg, Fuel Tax)	C (OS/OW), E (OS/OW)
County Tax Commissioner			C, (Intrastate trucks & charter buses), P	
Local Police		E	E (OS)	E (OS/OW)
Judicial System	A	A	A	A(OS)
Adm Hearings	A(PSC & DOR)	A(DPS)	A(DOT)	A(DOT-OW)

C = Credentialing, E = Enforcement, F = Fuel Tax, P = Property Tax, A = Adjudication or Appeal

2.1.3 CVA Statistics for Georgia's Agencies

Statistics relevant to Georgia's CVA agency functions are summarized below. These numbers are approximate in some cases.

DOR:
Number of IRP and intrastate carrier vehicles/equipment registered in 1997……...595,000
Number of IFTA Licenses in effect in 1997…….……..…5,000
Number of fuel tax returns processed in 1997…….…..…...20,000
Number of company audits in 1997 (program started in 1998).……..…none

PSC:
Number of SSRS carriers registered in 1997…….5,178
Number of intrastate carriers registered in 1997……..……..471
Number of exempt carriers registered in 1997……..……946
Number of vehicle safety inspections in 1997…….35,484
Number of carrier compliance reviews (safety audits) in 1997 year……..54
Number of citations issued each year……1,074

DPS:
Number of CDLs in effect in Georgia……238,959
Number of CDLs issued in 1997……..53,323
Number of citations to Georgia's commercial drivers in 1997……..…17,555

DOT:
Number of trucks weighed and checked in 1997……..……3,000,000
Number of OS/OW permits issued in 1997……325,000
Number of citations issued in 1997……122,000

2.1.4 Relevant Interactions Between Georgia's CVA Agencies

Current interactions between the Commercial Vehicle Administration agencies are summarized in Table 2-3.

Table 2-3 Interactions Between Commercial Vehicle Administration Functions

	DOR	PSC	DOT	DPS
DOR	Internal Interactions	↗ Responses to inquiries about DOR credentials	↗ Responses to inquiries about DOR credentials	↗ Responses to inquiries about DOR credentials
PSC	↗ Citation records relevant to DOR	Internal Interactions	↗ Coord Enforcement	↗DPS Relevant Citations
DOT	↗ Credentials Inquiries; Citation Flags in DB; DOR Relevant Citations	↗ Coord Enforcement; Credentials Inquiries; PSC Relevant Actions	Internal Interactions	↗ Coord Enforcement; DPS Relevant Citations
DPS	↗ Credentials Inquiries	↗ Credentials Inquiries; CV Accident Records	↗ Credentials Inquiries; All accident records	Internal Interactions

The most prevalent interactions between the CVA agencies can be summarized as follows:

- DOT enforcement personnel frequently inquire PSC and DOR (and DOT) offices about the credentials of a vehicle that has been stopped,
- Enforcement actions are frequently coordinated between the DOT, PSC, DPS, and local police,
- Citations are forwarded from DOT and PSC to DOR for annotation of their databases to avoid issuance of credentials in the presence of unresolved citations, and
- DPS provides all accident records to DOT, and those involving commercial vehicles to PSC.

2.2 GEORGIA DEPARTMENT OF REVENUE (DOR) AND COUNTY TAX COMMISSIONERS (CTCs)

This section will describe the current situation within the Georgia DOR and CTCs using the following topics:

- The DOR/CTCs' missions and major functions with respect to motor carriers,
- The DOR/CTCs' organizational structure relevant to motor carriers,
- The DOR relevant subfunctions, correlation to the organization, and interactions, and
- Descriptions of current information systems supporting the DOR functions.

County Tax Commissioner functions are described here since they are interconnected to the DOR functions.

2.2.1 DOR/CTCs' Mission and Major Functions With Respect to Motor Carriers

The Georgia Department of Revenue's primary mission is to collect and distribute various state taxes and to oversee similar revenue operations at the local government level. In addition, DOR administers the titling and registration of vehicles for the state. County Tax Commissioners perform a similar mission at the county level.

The major functions performed by DOR and County Tax Commissioners relevant to the motor carrier industry are:

- Registering Vehicle Titles for all Georgia based vehicles, including carrier vehicles (DOR),
- Issuing Vehicle Licenses (Tags) for all Georgia based vehicles, including carrier vehicles, and
- Registering and processing returns for Fuel/Use Tax for all Georgia based interstate carriers (DOR).

2.2.2 DOR/CTCs' Organizational Structure Relevant to Motor Carriers

The current organization of DOR is as shown in Figure 2-1, including the CTCs (which are not a part of DOR). The units of primary interest are the Motor Vehicle, Taxpayer Accounting, Internal Administration, Sales and Use Tax, and Central Audit Divisions, with other divisions providing support to these primary divisions. The roles of each of these organizational units are addressed in the discussions that follow DOR's relevant subordinate functions.

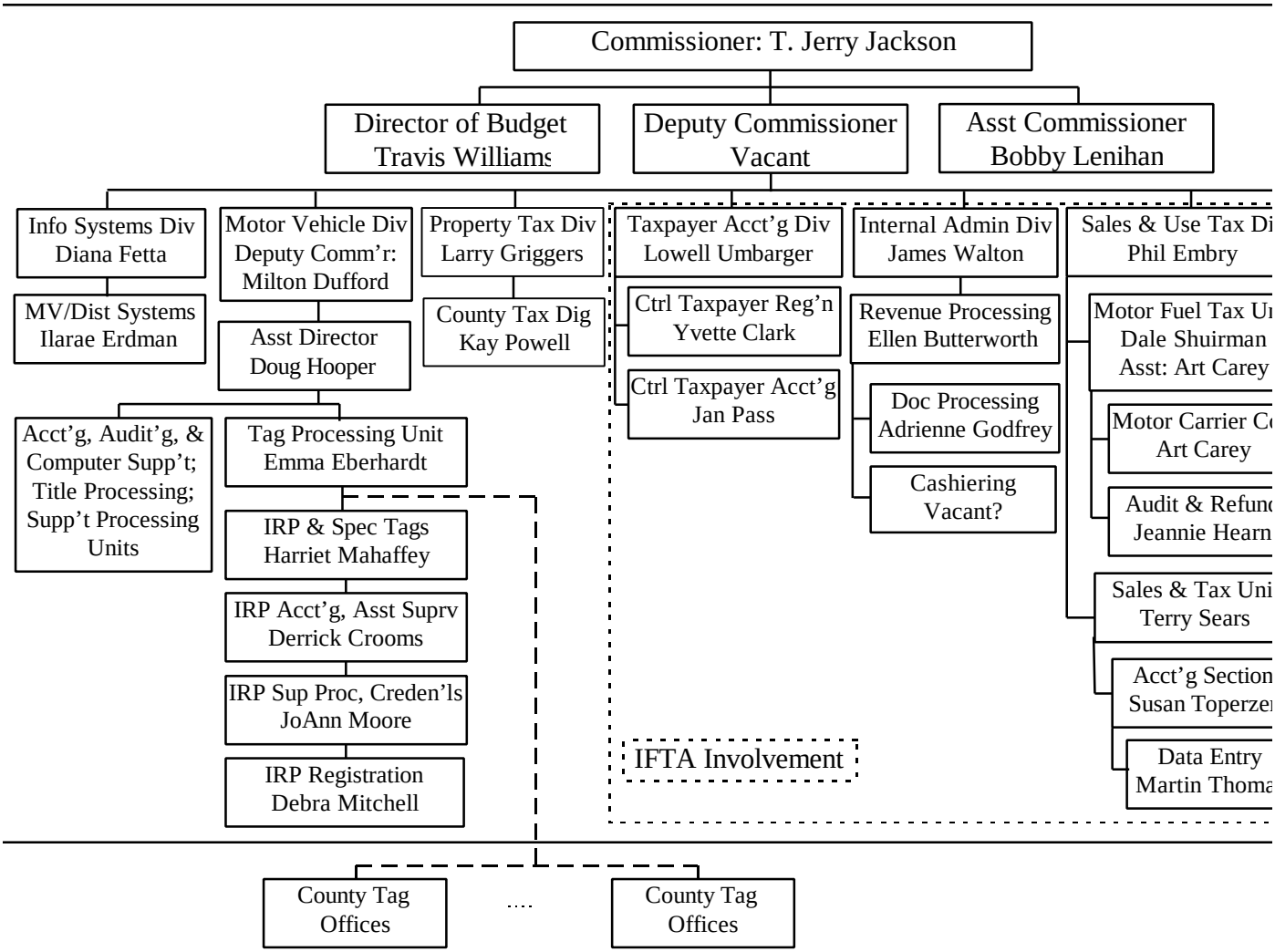

Figure 2-1 Georgia DOR/CTCs Organization (Commercial Vehicle Related)

2.2.3 Subordinate Functions Within DOR's Major Carrier Functions

For commercial vehicles (also referred to as motor carriers), the DOR's overall mission is achieved via the following subordinate functions:

- Vehicle Titling, which maintains the official ownership records for all vehicles.
- Vehicle Registration, which issues tags and proof of registration for all vehicles, including those of intrastate and interstate (International Registration Plan (IRP)) carriers.
- Fuel Taxation, which collects taxes from all fuel dealers and interstate carriers who use fuel in other states. The interstate carriers must accomplish:
  - International Fuel Tax Agreement (IFTA) Registration, and
  - Quarterly file Fuel Tax Returns with the IFTA Tax Return Processing function,
- Funds Management function, imbedded in the IRP Registration and IFTA Tax Return Processing functions, which:
  - Distribute fuel taxes to other IFTA jurisdictions,
  - Distribute IRP registration fees to other IRP jurisdictions
- IRP and IFTA Auditing functions, which audits carriers to assure compliance.

2.2.4 Correlation Between DOR's Functions and Organizational Structure

The correlations are as follows:

- The Titling function is performed by the Title Processing unit of the Motor Vehicle Division.
- Vehicle Registration for interstate carriers (IRP registration) is performed by the IRP Section of the Tag Processing Unit within the Motor Vehicle Division. Vehicle registration for intrastate carriers is accomplished at the County Tag Offices, with central records maintained by DOR.
- IFTA Registration by interstate carriers is performed by the Central Taxpayer Registration unit of the Taxpayer Accounting Division.
- IFTA Tax Returns are received by the Revenue Processing unit of the Internal Administration Division, and processed by the Motor Fuel Tax Unit of the Sales and Use Tax Division.
- Funds Management is accomplished independently for IRP by the IRP Section and for IFTA by the Motor Fuel Tax Unit.
- IRP and IFTA Audit are performed by the IRP/IFTA Audit group within the Central Audit Division.

2.2.5 Interactions Between DOR Functions and With External Entities

These interactions are diagrammed in Figure 2-2. The more significant aspects of these interactions are as follows:

- Interactions between the DOR functions and other Georgia CVA agencies were identified in Table 2-2.
- All interactions between DOR and the carriers involve applications forms, credentials/tags, tax returns, audits, and correspondence to correct problems with these items.
- Vehicle registration checks Title records to assure ownership or valid leasing arrangements for interstate carriers (IRP registration).
- The IRP and IFTA functions, via the Funds Management function, interact with similar offices in all other jurisdictions (US States and Canadian Provinces).

- The IRP and IFTA functions both interact with external entities to perform their functions. The nature of these relationships are addressed in more detail under the information systems discussions.

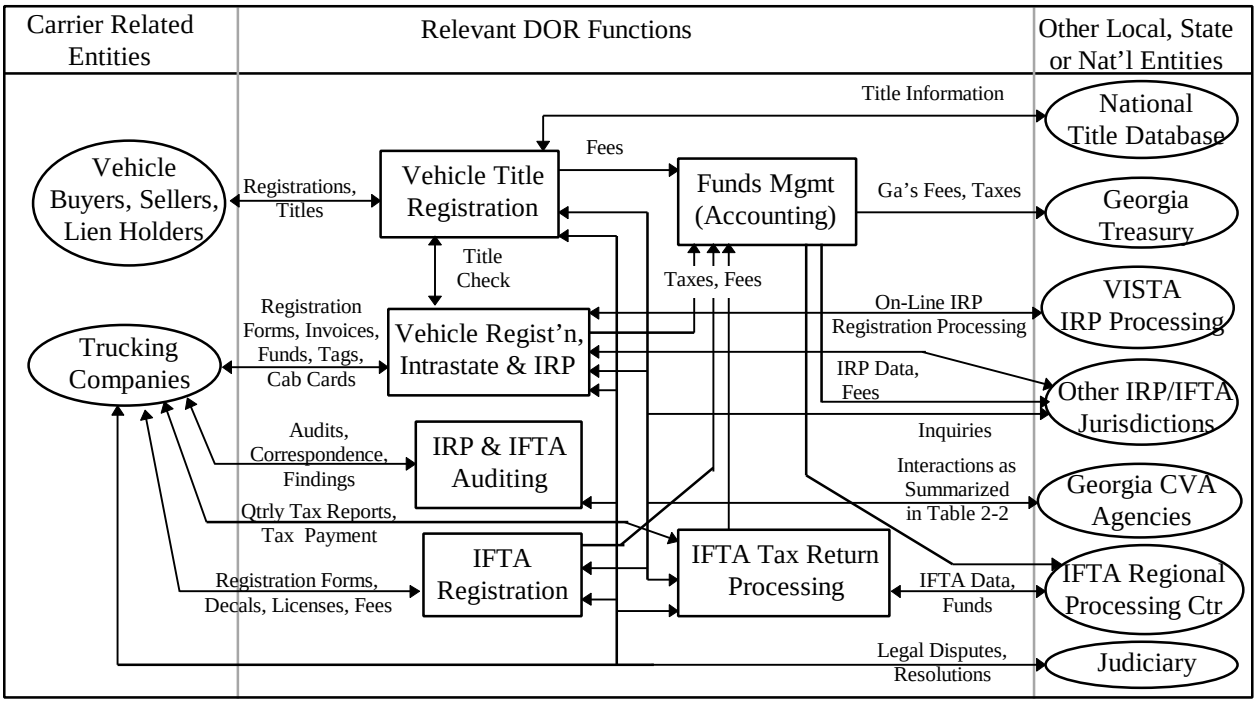

Figure 2-2 Interactions Between DOR Functions and With External Functions

2.2.6 Information Systems Supporting DOR's Functions and Interactions

These information systems are diagrammed in Figure 2-3. The more significant aspects of these information systems are:

- The interfaces with the carriers are usually by mail, walk-in, facsimile or telephone. The telephone is used primarily, but not exclusively, to clear up minor discrepancies with credential applications or fuel tax returns.
- The Title software and databases, intrastate Vehicle Registration database, Taxpayer Registration software and databases (including IFTA registration), and all accounting software and databases (presumed) are hosted on the DOR mainframe. The Quarterly Fuel Tax reports are received by the Internal Administration Division, where they are entered into DOR mainframe databases.
- The IRP software and databases are hosted on the VISTA information system in New Jersey, and accessed on line for all IRP activities.
- Initial and renewal IFTA registrations and fuel tax distributions to other states (from quarterly tax reports) are transferred to the IFTA Regional Processing Center via custom software hosted on a server within the Fuel/Use Tax unit. The books are balanced and net taxes due are forwarded to the RPC about once per month.

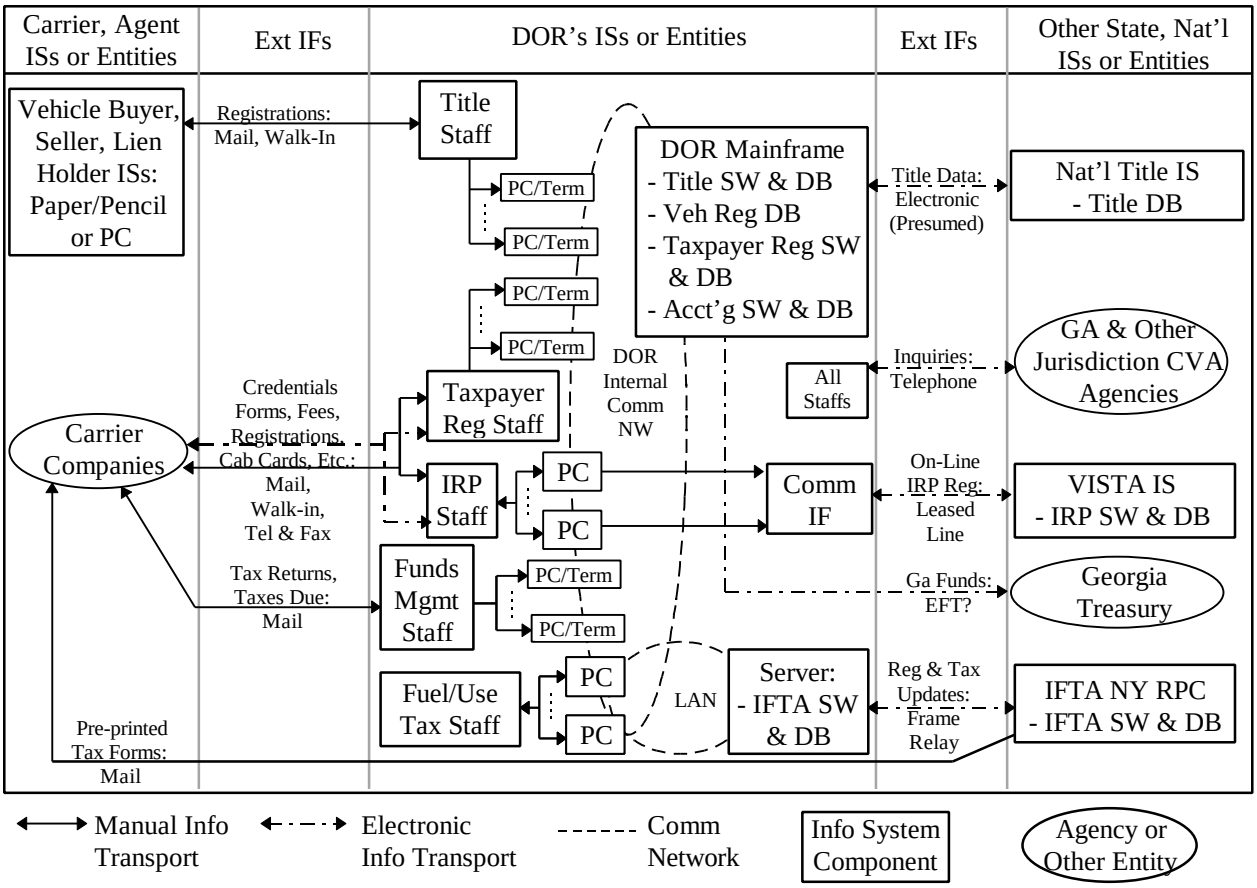

Figure 2-3 DOR's Current Information Systems

2.2.7 DOR's Current and Already Planned Use of ITS Technologies

DOR has the following on-going or planned ITS related efforts:

- Interfaces are being developed to use the IRP and IFTA Clearinghouses when they become operational,
- Plans are being made to allow carriers to file their Fuel Tax Returns electronically via the commercial TAXCONNECT service.

2.3 GEORGIA PUBLIC SERVICE COMMISSION (PSC)

This section describes the current situation within the PSC, addressing the following topics:

- The PSC's mission with respect to motor carriers,
- The PSC's organizational structure relevant to motor carriers,
- The PSC's basic functions, correlation to the organization, and their interactions, and
- Descriptions of current information systems supporting the functions.

2.3.1 PSC's Mission and Major Functions With Respect to Motor Carriers

The published mission statement for the PSC is as follows:

The mission of the Georgia Public Service Commission is to ensure that consumers receive the best possible value in telecommunications, electric and natural gas services, and to improve transportation and pipeline safety.

The major functions performed by PSC relevant to the motor carrier industry are:

- Issuing Operating Authority for all Georgia based carriers that require such authority,
- Issuing HAZMAT Permits when transport of hazardous materials is necessary, and
- Insuring Safety of Operations by all carriers, drivers, and vehicles (trucks and buses) traveling in Georgia.

2.3.2 PSC's Organizational Structure Relevant to Motor Carriers

The current overall organization of Georgia's PSC is as shown in Figure 2-4 below. Notice that all commercial vehicle oriented functions are in the Transportation Division. The Transportation Division interfaces with the Administrative Division in support areas, including information systems. The specific roles of these organizational units will be discussed after PSC's functions have been introduced.

2.3.3 Subordinate Functions Within PSC's Major Carrier Functions

Through interviews of key individuals and subsequent analysis of the organization's activities, the following functions were identified within the Transportation Division of PSC, which are necessary to perform the agency's mission and major functions relevant to motor carriers:

- Compliance Management oversees carrier compliance with Operating Authority and Safety laws, including revoking Operating Authority for non-compliance,
- Operating Authority, issued after assuring insurance coverage and safety compliance,
- HAZMAT Permits, issued for the necessary transport of Polychlorinated Biphenyl (PCB), Liquefied Natural Gas (LNG), and radioactive materials in the State,

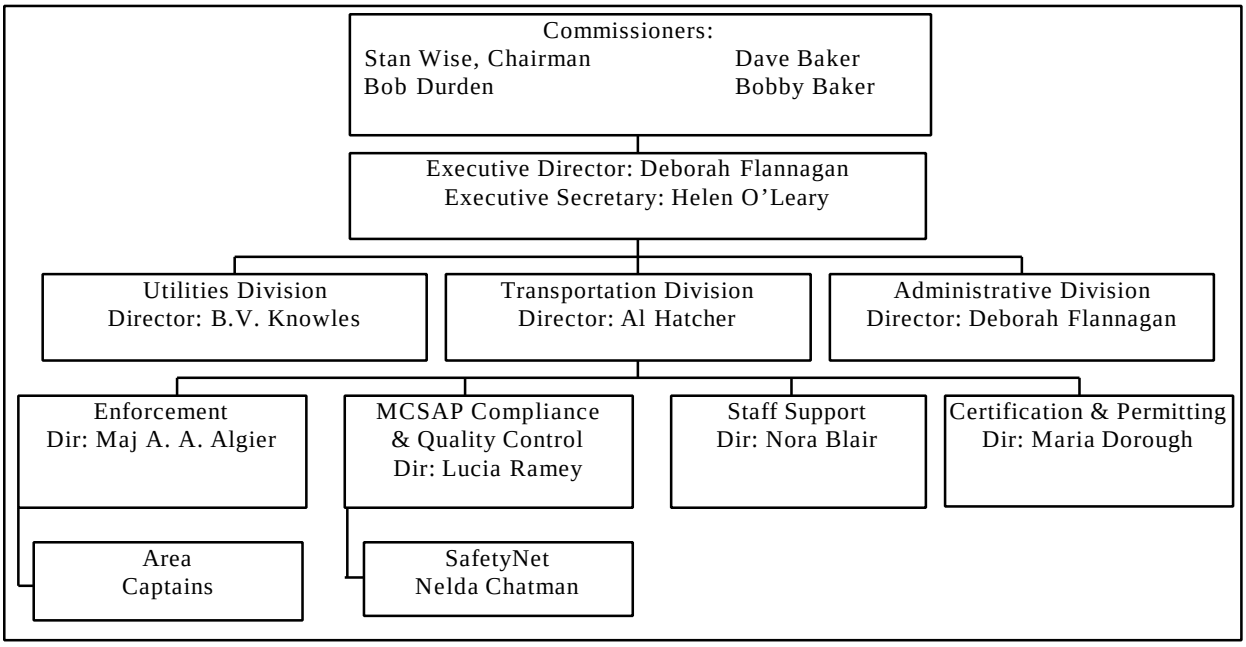

Figure 2-4 Georgia PSC, Relevant Organizational Structure

- Funds Management to manage the collection and disbursement of Operating Authority fees,
- Enforcement, which enforces Operating Authority and Safety Laws on the highways and conducts carrier audits, and
- Records Management, which performs all activities associated with inspection and audit records.

2.3.4 Correlation Between PSC's Functions and Organizational Structure

The roles of the organizational units within the Transportation Division are as follows:

- Enforcement performs the Enforcement function, providing uniformed officers for field operations and company audits, patrolling the highways, and vehicle inspections.
- Motor Carrier Safety Assistance Program (MCSAP) Compliance and Quality Control performs Company Audits, Compliance, HAZMAT Permits, and Records Management functions.
- Staff Support performs the Funds Management and personnel functions.
- Certification and Permitting performs the Operating Authority function.

2.3.5 Interactions Between PSC's Functions and With External Entities

These interactions are diagrammed in Figure 2-5 below. The more significant aspects of these

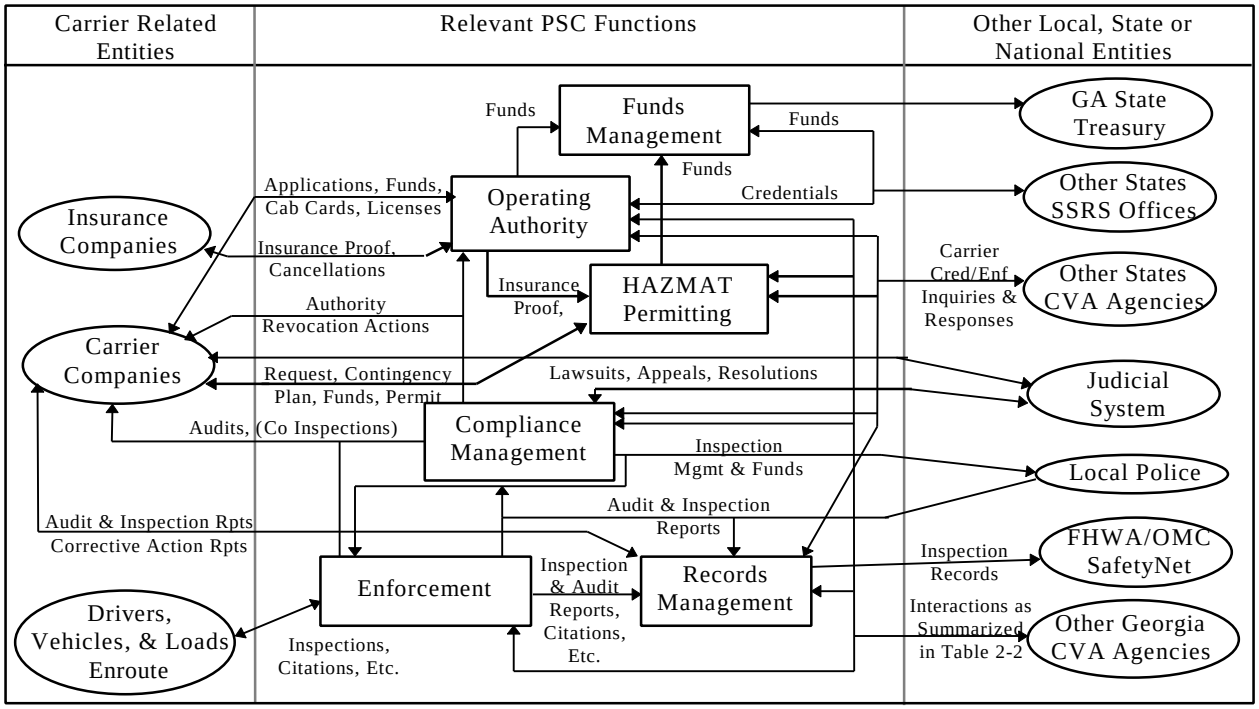

Figure 2-5 Interactions Between PSC Functions and With External Entities

interactions can be summarized as follows:

- Interactions between the PSC functions and other Georgia CVA agencies were identified in Table 2-2.
- Interactions between PSC and carriers consist of :
  - Applications forms, credentials, and correspondence to correct problems with these items.

- Inspection of vehicles and driver records on the road, and actions taken as a result of these inspections,
- Audits (inspections) of carrier safety programs and other records
- Correspondence to resolve inspection and safety audit discrepancies.

- The carrier's proof of insurance and cancellation notices must be provided directly to PSC by the insurance companies, and must be checked by the Operating Authority function before issuing such authority.
- Enforcement inspection reports and other action documentation, as well as audit reports, are passed to the Records Management function for handling.
- The Operating Authority function for interstate carriers (the Single State Registration System-SSRS) distributes and receives funds from similar offices in other SSRS jurisdictions.
- Compliance Management interacts with the Enforcement function and local police to fund and direct the inspection program.
- All inspection and audit reports, as well as carrier actions to resolve discrepancies, go to the FHWA/OMC's SafetyNet central database.

2.3.6 Information Systems Supporting PSC's Functions and Interactions

The information systems supporting the relevant PSC functions are diagrammed in Figure 2-6. The more significant aspects of these information systems can be summarized as follows:

- Carrier to PSC interactions are supported primarily by mail, walk-in, telephone and facsimile, except for vehicle and company inspections.
- The Operating Authority function is supported by PCs connected to a local server and to the

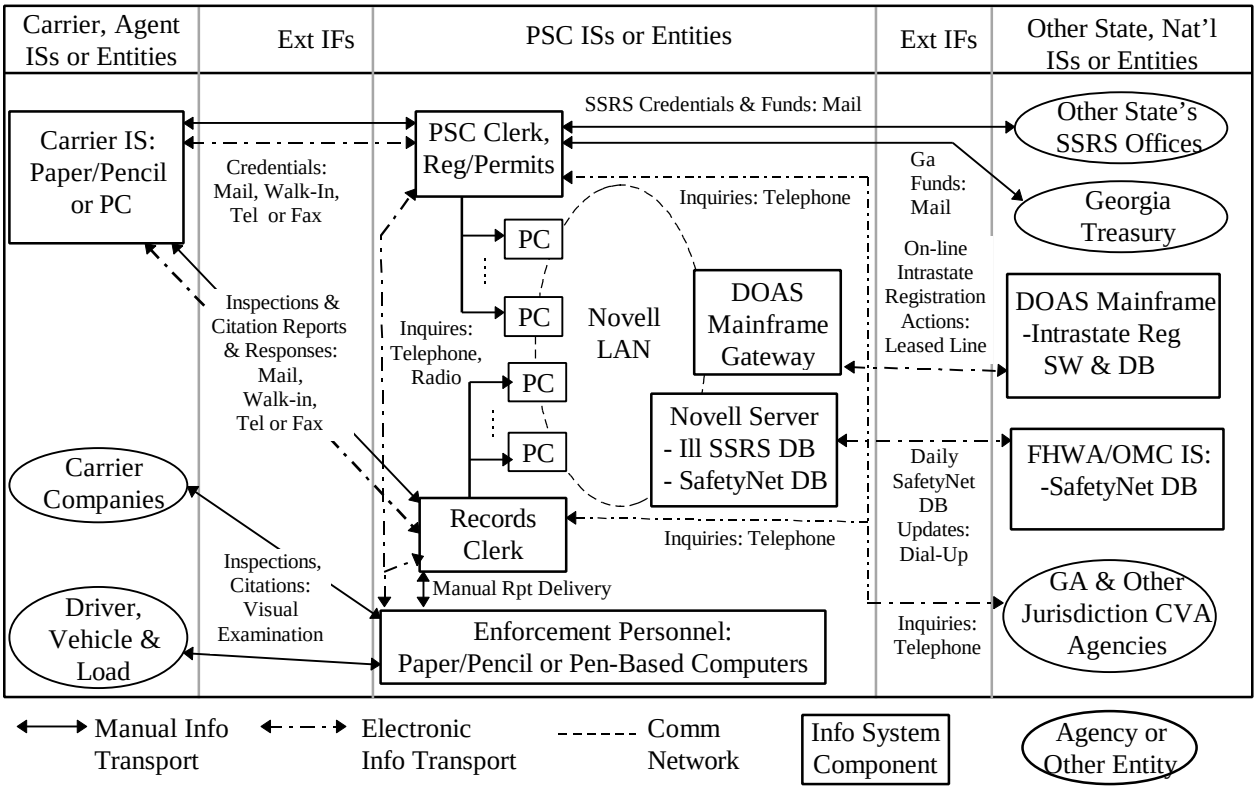

Figure 2-6 Current Information Systems Supporting PSC's Functions and Interactions

DOAS mainframe. The local server executes the Illinois SSRS software for registering interstate carriers. The DOAS mainframe executes custom software for registering intrastate and exempt carriers.

- HAZMAT Permitting is supported by a ***manual information system (check this)***,
- The SSRS credentials and funds are distributed to other jurisdictions by mail,
- The local server also executes the SafetyNet software for inspection Report Processing and provides daily updates to FHWA/OMC's central SafetyNet system.

2.3.7 PSC's Current and Already Planned Use of ITS Technologies

PSC has the following on-going or planned ITS related efforts:

- PSC is in the process of redeveloping its information system that supports intrastate carrier credentialing.
- PSC (jointly with OPE) has a grant from FHWA to install computers at a number of OPE's weigh stations to access the SAFER database (referred to as the Joint PSC/OPE Project).
- PSC has about 35 Fujitsu pen-based computers and is using the Aspen software for carrier vehicle inspections.

2.4 GEORGIA DEPARTMENT OF TRANSPORTATION'S OFFICE OF PERMITS AND ENFORCEMENT (OPE)

This section describes the current situation within OPE, addressing the following topics:

- The OPE's mission with respect to motor carriers,
- The OPE's organizational structure relevant to motor carriers,
- The OPE's functions, correlation to the organization, and their interactions, and
- Descriptions of current information systems supporting the OPE functions.

2.4.1 OPE's Mission and Major Functions With Respect to Motor Carriers

The OPE's overall mission is to enforce the state's laws on GDOT property, particularly as related to carrier trucks using the State's highways.

The major functions performed by OPE relevant to motor carriers are:

- Enforcement of Size and Weight laws applicable to carrier vehicles and loads,
- Permitting the transport of nondivisible loads exceeding legal limits when justified, and
- Enforcement of Vehicle Registration and Fuel/Use Tax laws for DOR.

2.4.2 OPE's Organizational Structure Relevant to Motor Carriers

The current overall organization of OPE is shown in Figure 2-7 below. The roles of each OPE organizational unit will be addressed in more detail after the discussions of OPE's functions.

2.4.3 Subordinate Functions Within OPE's Major Carrier Functions

For the purposes of this study, OPE's operation will be divided into the following functions:

- Enforcement, which includes enforcing:
  - Legal weight and size limits for trucks and their loads,
  - IFTA/IRP laws, and

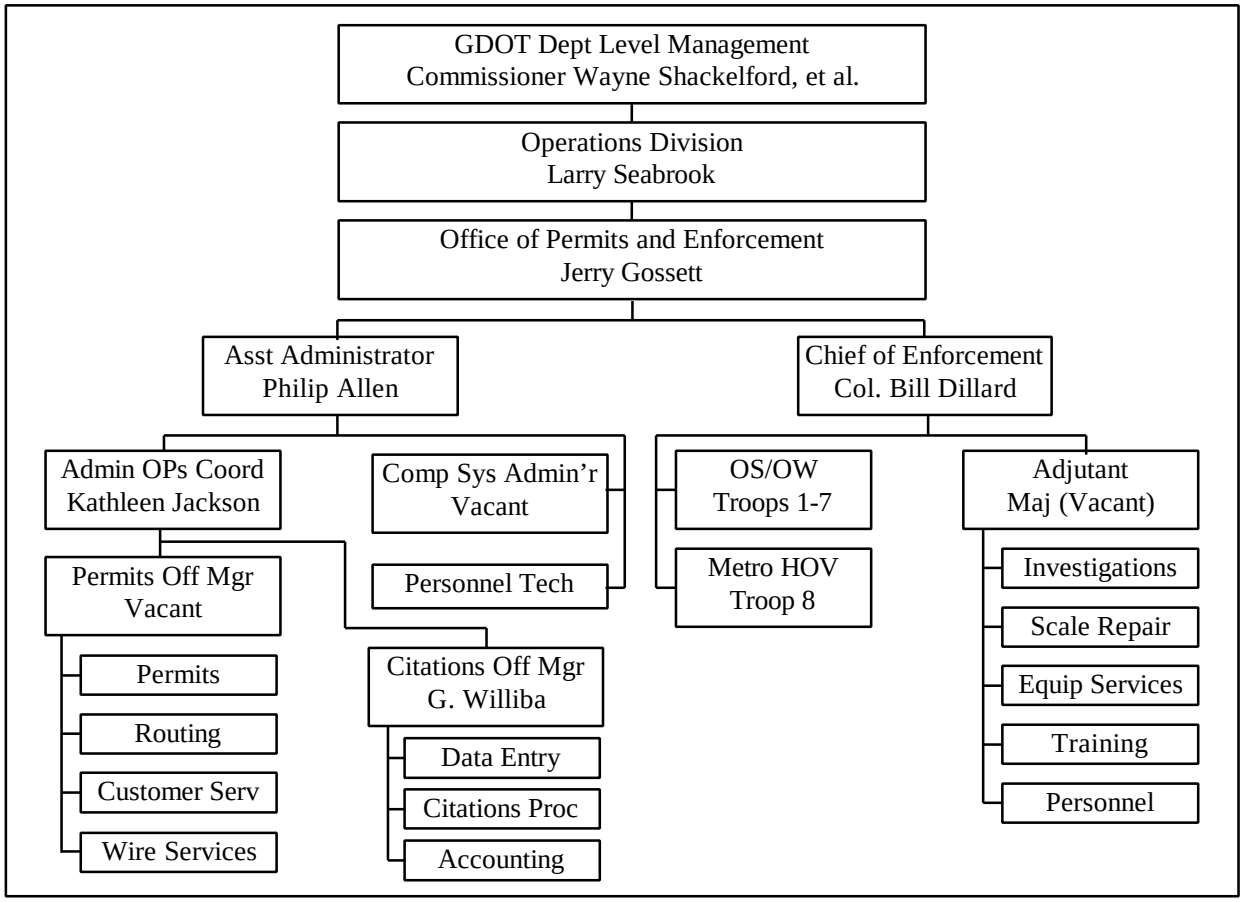

Figure 2-7 GDOT OPE's Organizational Structure

- Violations of vehicle safety and driver laws, and certain traffic laws.

- Permitting, which involves determining the legitimacy of need and issuing permits for oversize and overweight vehicles/loads, and assigning travel routes for such vehicles.
- Citations Processing, which includes data entering, correspondence, and other processing necessary to collect fines for citations issued to overweight vehicles or loads.
- Funds Management for collecting permit fees and overweight citation fines.
- In addition, an implicit function called Compliance Management exists to assure enforcement results are fed back to the Permitting and Enforcement functions.

These functions are used to organize the discussions that follow.

2.4.4 Correlation Between OPE's Functions and Organizational Structure

These correlations are very straightforward for OPE and are as follows:

- All Enforcement activities of interest to this study are performed by the Enforcement unit.
- All Permitting activities are performed by the Permits unit.
- Citations Processing is performed by the Citations unit.
- Funds Management is performed by both the Permits and Citation units.

- The Compliance Management function is mostly performed by OPE management. The other units within OPE perform functions not relevant to this study or provide support to the functions of interest.

2.4.5 Interactions Between OPE's Functions and With External Entities

These interactions are diagrammed in Figure 2-8. The significant aspects of these interactions are:

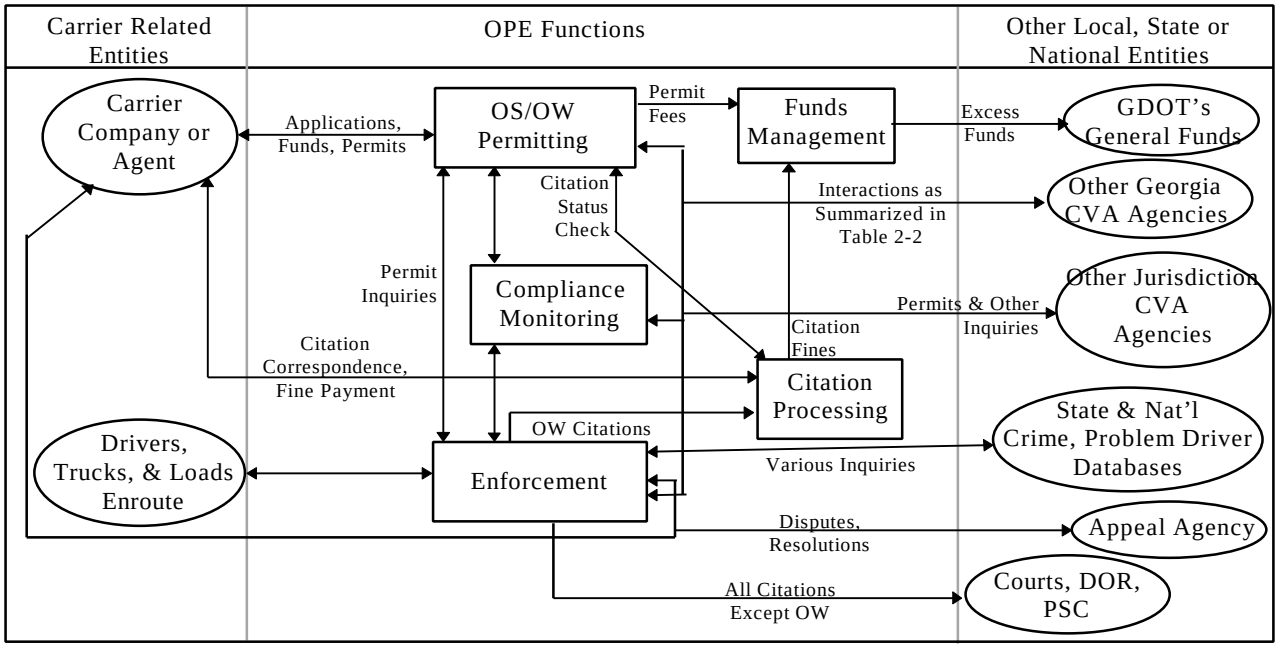

Figure 2-8 Interactions Between OPE's Functions and With External Entities

- Interactions between the OPE functions and other Georgia CVA agencies were identified in Table 2-2.
- Interactions between OPE and carriers consist of :
  - Permit applications, permits, telephone conversations to correct, and permit fees.
  - Measurements and visual inspections of drivers/vehicles/loads at weigh stations and on the road, and citations issued or other actions taken as a result of these measurements and inspections.
  - Correspondence and fines to resolve citations.
- Enforcement citations for overweight conditions go to the Citations Processing function for handling, and other citations go to the judicial system or other agencies as appropriate.
- The Funds Management functions exists within both the Permitting and Citations units and forward funds in excess of the Office's needs to the DOT's general funds.
- Compliance Management, basically Office management, interacts with both the Permits and Enforcement functions to assure feedback of enforcement results; this interaction will be stronger in the future with electronic permitting and electronic clearance.

2.4.6 Information Systems Supporting OPE's Functions and Interactions

These information systems are diagrammed in Figure 2-9 below. The significant aspects of these

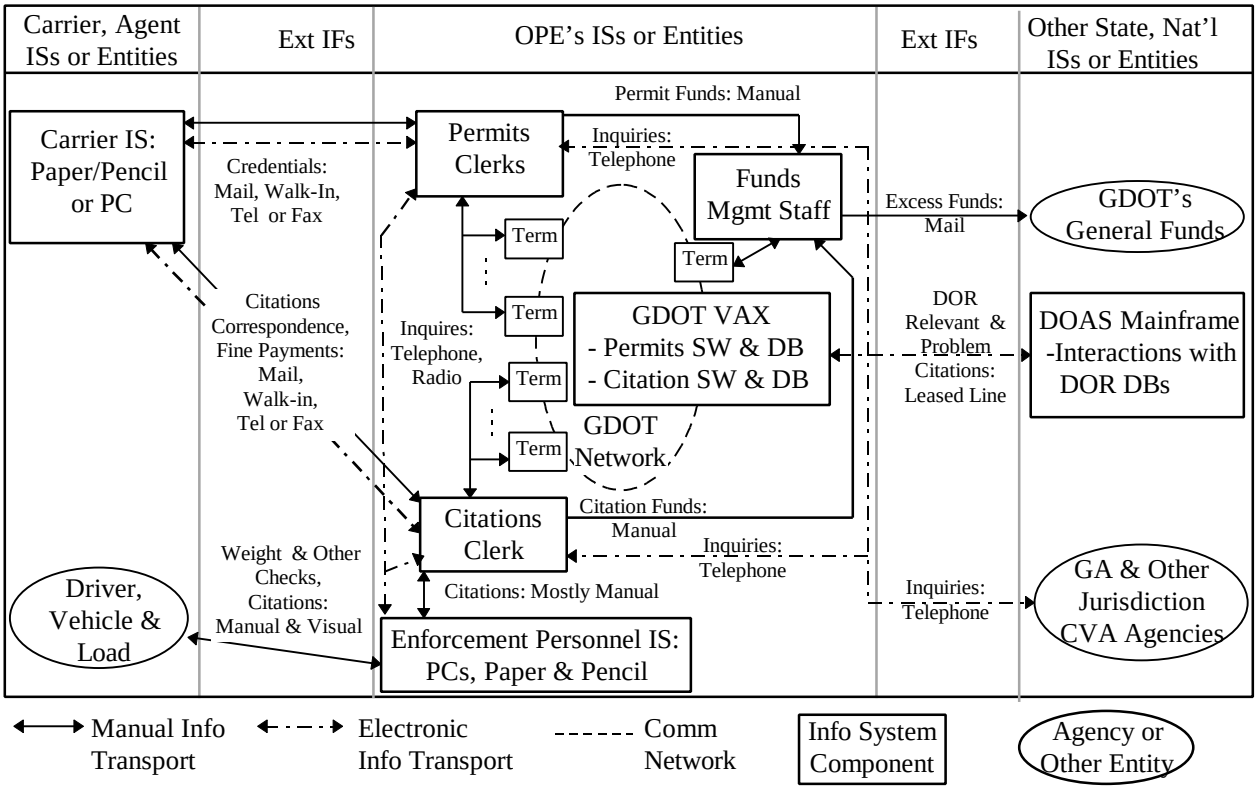

Figure 2-9 Current Information Systems Supporting OPE's Functions and Interactions

information systems are:

- Interactions between carriers and OPE to obtain oversize and overweight permits, handling of citations, and funds for each are supported primarily by mail, walk-in, telephone, and facsimile.
- Both the Permitting and Citations Processing functions are supported by custom software executing on the GDOT VAX computer. The OPE clerks use 'dumb' terminals (or PCs acting as terminals) to access the GDOT VAX via the GDOT internal network.
- Enforcement personnel are mostly supported by manual information processing, except for those weigh stations that have PCs and are being upgraded for the Advantage CVO system of electronic clearance system.

2.4.7 GDOT/OPE's Current and Already Planned Use of ITS Technologies

GDOT and OPE have the following on-going or planned ITS related efforts:

- GDOT's Office of Traffic Operations, along with all Atlanta area counties and the city of Atlanta, operates one of the most extensive Advanced Traffic Management Systems (ATMS) in the world. This ATMS consists of a Transportation management Center (TMC) operated by GDOT, and Traffic Control Centers (TCCs) operated by the local jurisdictions. There are several hundred video cameras and traffic detectors in the area providing input to the TMC/TCCs and various devices to control traffic and provide information to motorists (including Variable Message Signs, Highway Advisory Radio, and cell phone response). One

of the more significant features of this effort, from a CVO perspective, is the planned statewide expansion of the ATMS communications backbone and the development of a network of regional TMCs. Several other Georgia cities are developing or planning to develop TCCs (Athens, Savannah, and Macon).

- GDOT has also developed a statewide Advanced Traveler Information System (ATIS). This ATIS has kiosks, cable TV channel, and a very sophisticated World Wide Web site. These subsystems provide extensive traffic, routing, other mode, special events, weather, and tourism information.
- GDOT is redeveloping its entire information system, including its statewide communications network based on modern concepts and technology. The resulting Transportation Information System (TIS) will optimize information sharing and synergy across all Department functions. The TIS is very much an ITS, and is the basis for integration of ITS aids for the various Department functions.
- GDOT is using Dedicated Short Range Communications (DSRC: i.e., transponders and roadside readers) for electronic toll collection on the GA400 toll facility in the Atlanta area.
- GDOT/OPE has been using low speed Weigh-In-Motion (WIM) sensors on all weigh station ramps to provide electronic clearance to legal weigh trucks for about 20 years.
- GDOT/OPE has been a major participant in the Advantage I-75/CVO project since its inception, spending approximately $4 Million to equip all of Georgia's I-75 weigh stations to use the Advantage CVO electronic clearance technology.
- GDOT/OPE will adapt all of Georgia's weigh stations to use Advantage CVO electronic clearance technology within four years, including those on I-16 and I-95 beginning in 1998.
- GDOT/OPE has an active $350,000 project (known as the AVI Permitting Project) that will:
  - Add an electronic permitting function to the Advantage CVO system.
  - Install Advantage CVO readers at the Savannah port to indicate when an electronic permit exists for trucks leaving the port.
  - Develop software for preparation/upload of citations on fixed and mobile computers.
  - Examine the potential of a Web Site for issuing OS/OW permits.
- GDOT/OPE is the manager of a 12 state consortium project called the Inter-Regional CVO Institutional Issues Project. This project is examining all credentialing processes for interstate carriers in the participating states, developing a baseline for the long-term objective of common credentialing criteria, processes, and systems. The project has produced 'Operational Summaries' of the credentialing processes, and has or will produce several documents necessary to develop a common electronic credentialing system for carriers in these states.
- GDOT/OPE (with PSC) has a grant from FHWA to install computers at a number of weigh stations to provide access to the SAFER database (referred to as the Joint PSC/OPE Project).
- GDOT/OPE is in the process of redeveloping its OS/OW Permits information system to current technology, which will support more efficient processing and electronic interchanges with carriers.

2.5 GEORGIA DEPARTMENT OF PUBLIC SAFETY

This section will describe the current situation within the DPS, addressing the following topics:

- The DPS's mission with respect to motor carriers,
- The DPS's organizational structure relevant to motor carriers,
- The DPS's basic functions, correlation to the organization, and their interactions, and
- Descriptions of current information systems supporting the DPS functions.

2.5.1 DPS's Mission and Major Functions With Respect to Motor Carriers

The DPS is Georgia's state-level uniformed police agency, primarily charged with enforcing the laws of the State. This mission is performed in consonance with the Georgia Bureau of Investigation and local police agencies. The DPS and other police agencies have initial responsibility for controlling crime/accident/incident/disaster scenes and providing assistance to citizens in need of aid.

The major functions of DPS relevant to motor carriers are:

- Issuance of Commercial Vehicle Driver Licenses,
- Enforcement of traffic and other laws relevant to drivers and vehicles, including carriers, and
- Investigating and reporting vehicle Accidents, i.e., the circumstances, causes, etc., including those involving carriers.

2.5.2 DPS's Organizational Structure Relevant to Motor Carriers

The current overall organization of the DPS is as shown in Figure 2-10 below. The roles of these organizational units will be addressed after the subordinate functions are introduced.

2.5.3 Subordinate Functions Within DPS's Major Carrier Functions

The functions of the DPS, for the purposes of this study, are identified to be:

- Driver License Issuance, which includes all activities necessary to receive applications from, determine fitness for, and issue licenses to drivers (Commercial Driver License (CDL) of most direct interest), and
- Enforcement, which enforces all laws regarding vehicle operation; focusing on, but not limited to, driver licenses, vehicle registration, insurance coverage, and traffic law compliance.
- Drivers License Management, including activities to acquire information about convictions, determine appropriate action, suspend/revoke licenses, reinstate licenses, and provide driver record information in accordance with state law (CDLs of most direct interest), and
- Accident Reporting, including activities to collect, enter, analyze, and provide accident records in accordance with State requirements, and to report accident data to national recipients as appropriate (those involving commercial vehicles of most direct interest).

2.5.4 Correlation Between DPS's Functions and Organizational Structure

The DPS functions correlate well with the organizational structure:

- The Drivers Licensing function is performed within the Drivers Licensing Division,
- The Enforcement function is performed within the North and South Divisions,

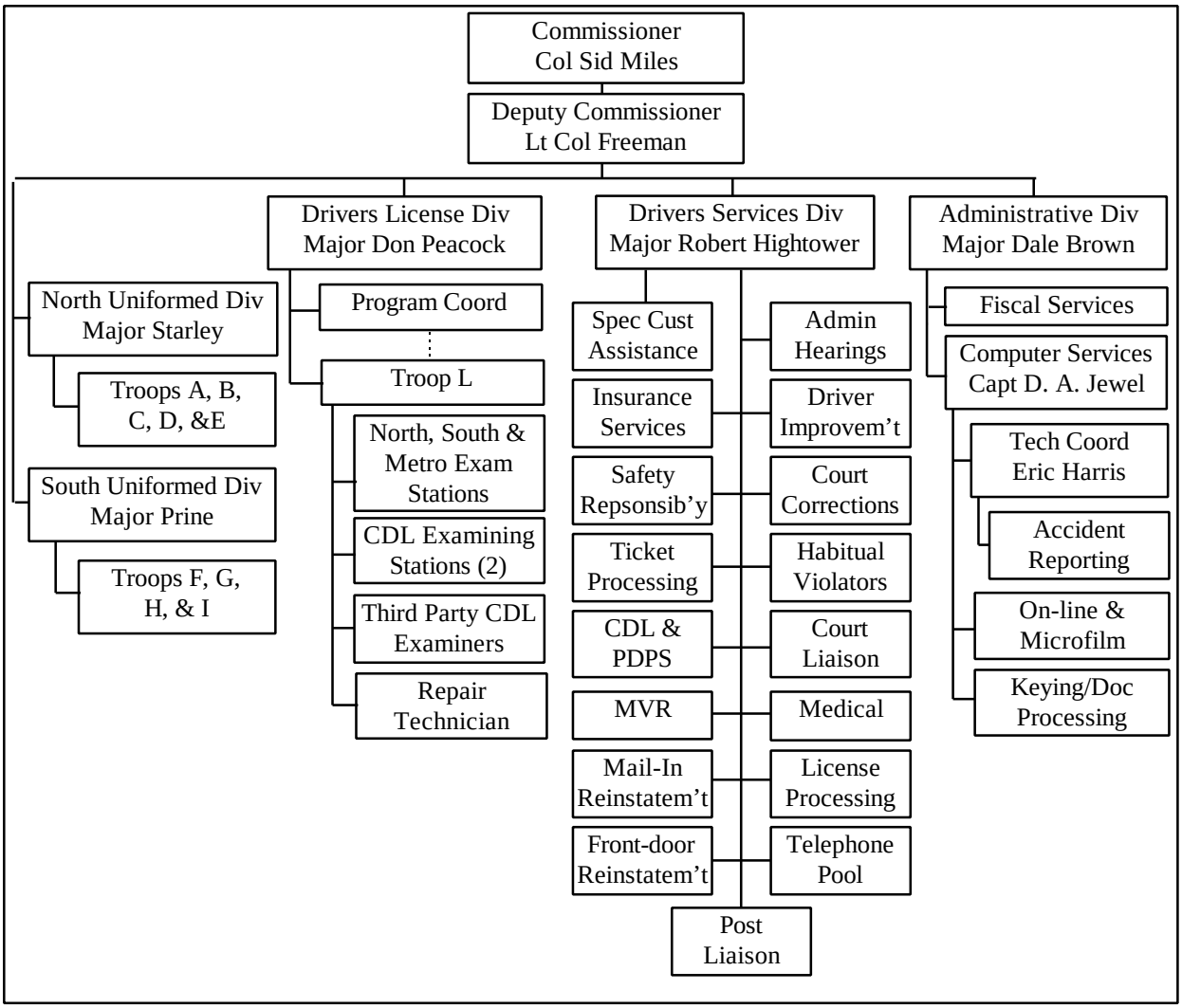

Figure 2-10 Relevant DPS Organizational Structure

- The Drivers License Management function is performed within the Drivers Services Division of DPS with the support of Computer Services, and
- The Accident Reporting function is performed jointly by the Enforcement Divisions (North and South) and the Accident Reporting unit within Computer Services.

2.5.5 Interactions Between DPS's Functions and With External Entities

These interactions are diagrammed in Figure 2-11 below. The more significant aspects of these interactions are as follows:

- Interactions between the DPS and other Georgia CVA agencies are as identified in Table 2-2.
- Interactions between the DPS and drivers are conducted mostly in person for Driver licensing and on-the-road interactions (visual inspections and issuing citations). Interactions involving license actions are conducted via mail and walk-ins.
- Drivers Licensing function checks national driver databases for other licenses or problems prior to issuing a new license.

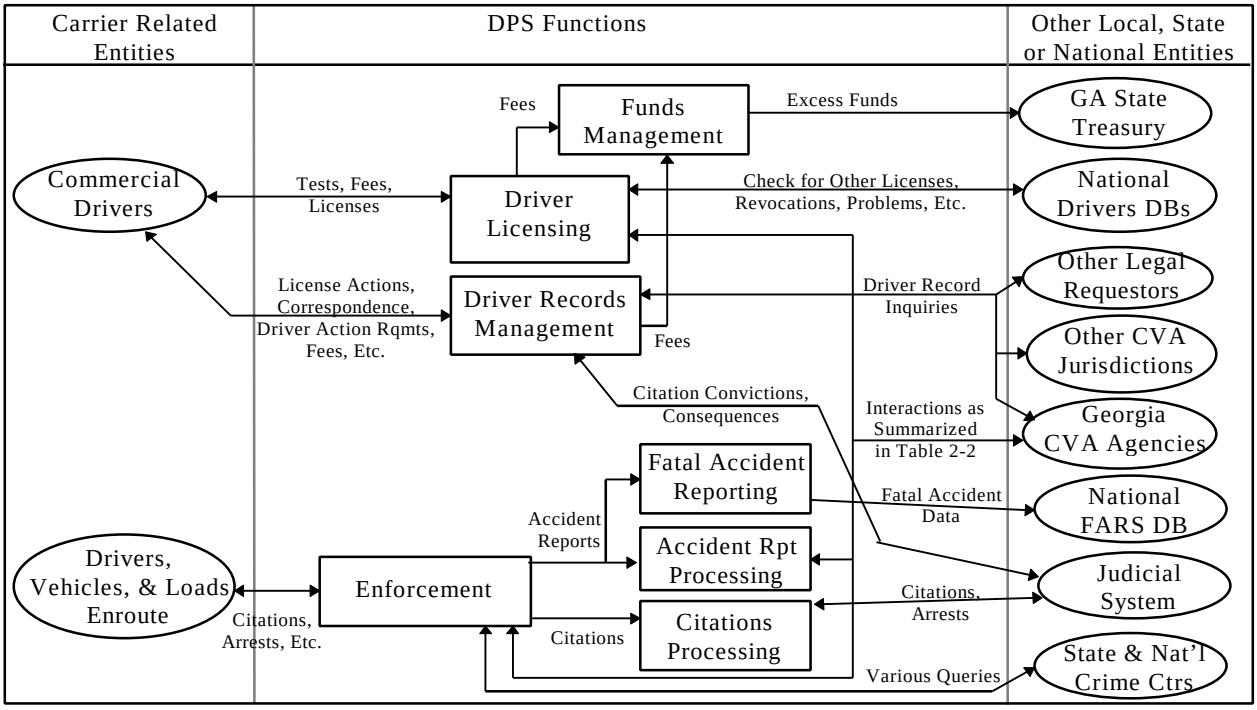

Figure 2-11 Interactions Among DPS Functions and With External Entities

- Driver Licensing create new driver records for Driver Records Management when the license is issued.
- Citations issued by Enforcement are passed to the Citations Processing function and from there to the judicial system for resolution.
- License actions ordered for resolved citations are passed from the judicial system to the Driver Records Management functions for execution.
- Accident Reports are passed from Enforcement to the Accident Records Processing function for entering into the accident database. More information is collected by that function for fatal accidents, which are then reported to the national Fatality Analysis Reporting System (FARS).
- Legitimately interested parties may request and receive Driver Record reports from the Driver Records Management function.

2.5.6 Information Systems Supporting DPS's Functions and Interactions

These information systems are diagrammed in Figure 2-12. Significant aspects of these information systems are:

- All interfaces with drivers and their vehicles are physical and manual.
- The Drivers Licensing software runs on PCs at all licensing stations, updating the driver files on the DOAS mainframe in real-time. When the DOAS mainframe is down, the local PC applications can issue some standard driver licenses and then update the central database via a batch process. CDLs and possibly others (new licenses?) can only be issued when the central computer is up (because the national driver databases must be checked).

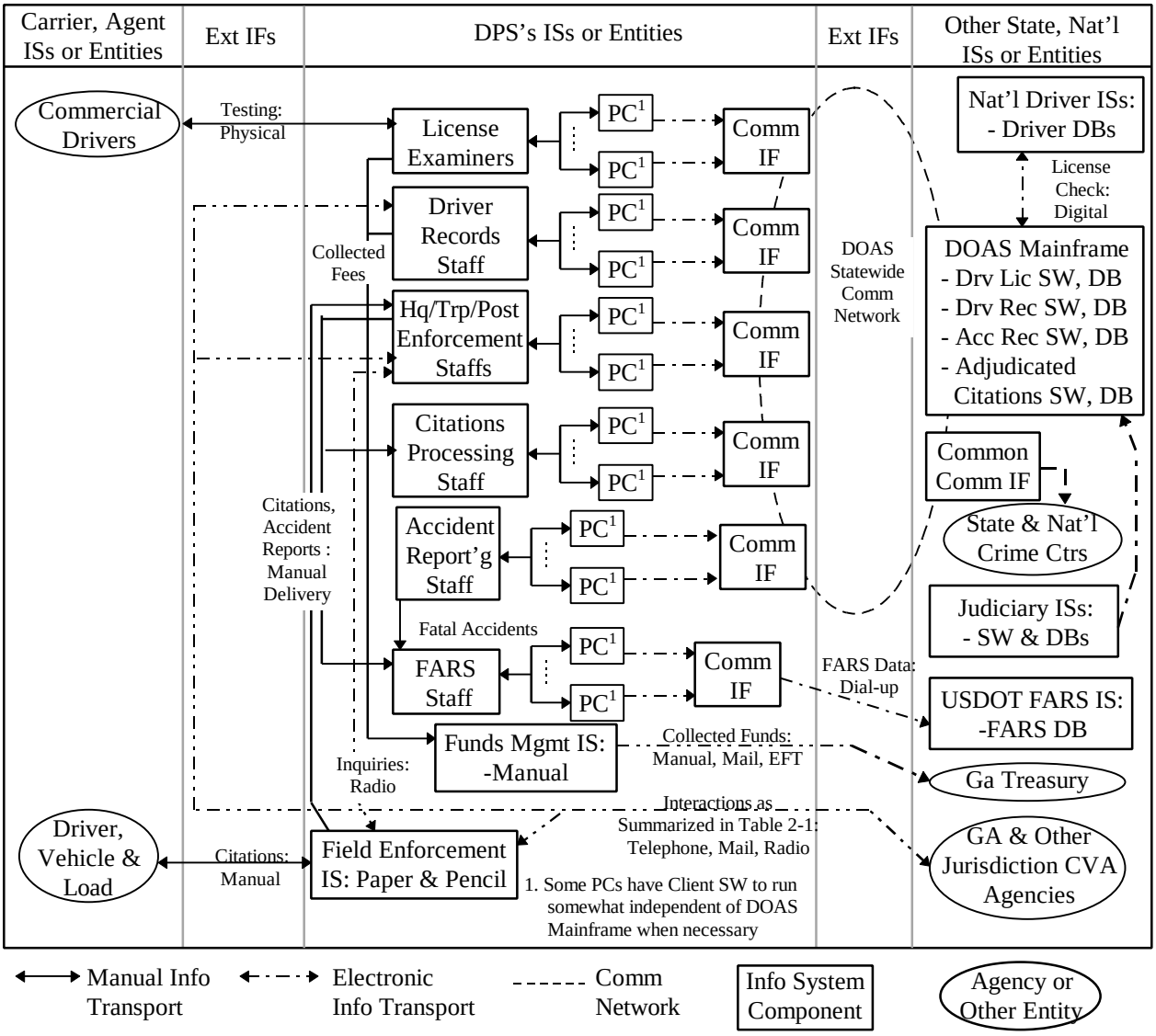

Figure 2-12 Current Information Systems Supporting DPS Functions and Interactions

- The Drivers Records software and databases are hosted entirely on the DOAS mainframe.
- The Accident Records software and database are hosted entirely on the DOAS mainframe, but will move to a local PC based Client-Server network in the near future.
- The FARS reporting software and database is hosted on an FHWA information system at some remote location, accessed by a local PC over a dial-up communications circuit.
- Information system support for Enforcement personnel at Headquarters, Troop and Post locations, as well as connectivity with external information systems, is via the DOAS mainframe and a communications interface to external systems such as the state and national crime centers.
- Field enforcement personnel interface with the Post primarily by radio and deliver citations and accident reports manually.

- Citations Processing is mostly accomplished locally by manual means and delivered to the appropriate judicial system (city, county, state, etc. court clerks). After adjudication, the citations with adjudication results are returned to DPS either manually or electronically.
- Those returned automatically are entered into a DOAS Adjudicated Citations database, and DPS Computer Services enters those returned manually into this same database. The Adjudicated Citations software notifies the Driver Records functions so that driver records can be updated and appropriate action can be taken.

2.5.7 DPS's Current and Already Planned Use of ITS Technologies

DPS has the following on-going or planned ITS related efforts:

- DPS is a primary participant in Georgia's Court Automation Project, which will provide for electronic collection, communicating, and processing of citations.
- DPS is currently redeveloping its Accident Reporting system to operate in a PC based Client-Server networking environment. This system will allow all agencies to electronically query and search the accident files on-line.
- DPS is also developing a Web Site to provide daily fatality accident information to all interested agencies.
- DPS has been authorized to implement and test a wireless digital communications capability in certain regions of Georgia using the Southern Company's commercial digital radio system. Further funding is subject to the success of the pilot project and funds availability. OPE is tracking this DPS effort.

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3. STRATEGIC OVERVIEW OF GEORGIA'S ITS/CVO PROGRAM

This section develops a foundation for Georgia's ITS/CVO implementation program in Georgia. This foundation will be developed in a top down fashion; i.e., by beginning with a mission statement for the agencies' group overseeing the implementation, converting that mission statement into goals, identifying specific ITS/CVO implementation objectives, and identifying the principles that will guide the implementation effort. Finally, the need for standardized functions and interfaces as defined by the CVISN program is emphasized.

3.1 MISSION STATEMENT FOR THE CVA COORDINATION COMMITTEE

A mission statement is an expression of the committee's rationale for undertaking the task of implementing ITS aids to the CVA function. The following mission statement has been adopted by the committee:

"We the public agencies charged with Commercial Vehicle Administration in the State of Georgia and the motor carrier industry will work cooperatively to apply modern technologies toward improving communications among ourselves, safety of carrier operations, and the quality, efficiency and effectiveness in our mutual performance of responsibilities to the public and carriers operating in the State."

3.2 AGENCY GOALS IMPLIED BY THE MISSION STATEMENT

The above mission statement is interpreted to imply these three general goals for the agencies represented by the committee:

- Improved efficiency of interactions between agencies and carriers;
- More efficient performance of agency responsibilities via:
  - improved operations within each agency, and
  - improved synergy between all agencies;
- Focusing limited agency resources on problem carriers to:
  - more effectively fulfill responsibilities to the public,*especially safety of carrier operations,* and
  - reduce the impact of agency activities on responsible carriers.

3.3 SPECIFIC ITS/CVO IMPLEMENTATION OBJECTIVES

The above goals can be realized via the following set of specific objectives for the CVA agencies:

- An integrated interface between carriers and the agencies for credentialing, including an option to interact electronically via computer,
- Information systems within each agency that are capable of:
  - efficient information sharing with other agencies, and
  - using information shared by the other agencies

- Efficient and secure information exchange mechanisms interconnecting agency locations, the agencies among themselves, and other legitimate users of the agencies' information, and
- ITS systems and technologies that provide:
  - tools for more efficient performance of enforcement tasks at the roadside, and
  - direct wireless access from the roadside to appropriate agency databases.

3.4 GUIDING PRINCIPLES FOR CVA ITS IMPLEMENTATION

The following are general principles that will guide the implementation of CVA in Georgia:

- Any systems developed for the CVA will be compliant with the National ITS and CVISN Architectures and all standards necessary to make the systems compatible with other such systems nationwide,
- CVA implementation will be coordinated and kept consistent with Georgia's ITS Deployment Plan, and
- CVA development efforts will, where possible, be pursued jointly with other ITS programs, particularly within Georgia.

3.5 COMMITMENT TO CVISN ARCHITECTURE

As stated in the above guiding principles, these Georgia agencies are committed to the need for standardization of the various ITS/CVO User Services and particularly the interfaces involved. The CVISN architecture is the mechanism for achieving this standardization. It must be noted however, that the CVISN architecture is a work in progress and does not yet have all issues solved, and not all of the current CVISN prototype systems and concepts will be the final ones. Georgia looks forward to contributing to the refinement and continuing development of the CVISN architecture. Toward this end, these Georgia agencies will strive to participate more fully in the CVISN program.

4. PROGRAM SUMMARY

The purpose of this section is to translate Georgia's ITS/CVO Working Group's objectives (from the previous Section) into projects. This purpose will be achieved through the following sequence:

- Develop an integrating concept for the CVA agencies' current information systems,
- Define a Georgia CVISN architecture that will realize the proposed integration concepts, identifying components that must be developed or upgraded,
- Identify the major efforts (which will be called project sets) necessary to develop or upgrade the Georgia CVISN components identified in the previous step,
- Develop descriptions of the identified project sets,
- Analyze the relationships of on-going or already planned ITS/CVO relevant projects within the CVA agencies to the identified Georgia CVISN project sets, and
- Identify future projects (within each of the project sets) that would logically extend on-going and planned projects toward realization of the desired Georgia CVISN architecture.

4.1 AN INTEGRATING CONCEPT FOR CVA AGENCIES' INFORMATION SYSTEMS

Figure 4.1 illustrates the information system components and interfaces involved, both current and desired, in an aggregate view of the various agencies. This diagram supports the following discussion of the entities involved, processes, databases, and interfaces.

Notice that the diagram is divided into five columns. The left column contains the carrier entities, the center column contains the CVA agencies, and the right column contains the other state and national entities of interest. The second and fourth columns contain the interfaces between the three entity categories.

The carrier related entities are the drivers, carrier companies, carrier agents (wire services), and the combination of driver, vehicle, and load while on the road.

The carrier entities to agency interfaces of most interest for present purposes are the:

- Credentialing Interface between the Carrier Companies (or Carrier Agents) and the CVA agencies, and
- Vehicle-Enforcement Interface between the enroute combination of driver/vehicle/load and field enforcement personnel and systems.

The other interfaces between carrier entities are of less interest for present purposes since it is less clear how ITS technology could improve these interfaces. These are the commercial driver to DPS interface for driver licensing, and the DOR and PSC to carrier company interfaces for auditing purposes.

The CVA agency items of interest include the major processes, databases, and interfaces. The major generic processes that exist within the agencies are Credentialing, Enforcement, Compliance Management, and Funds Management. Credentials and Enforcement databases also

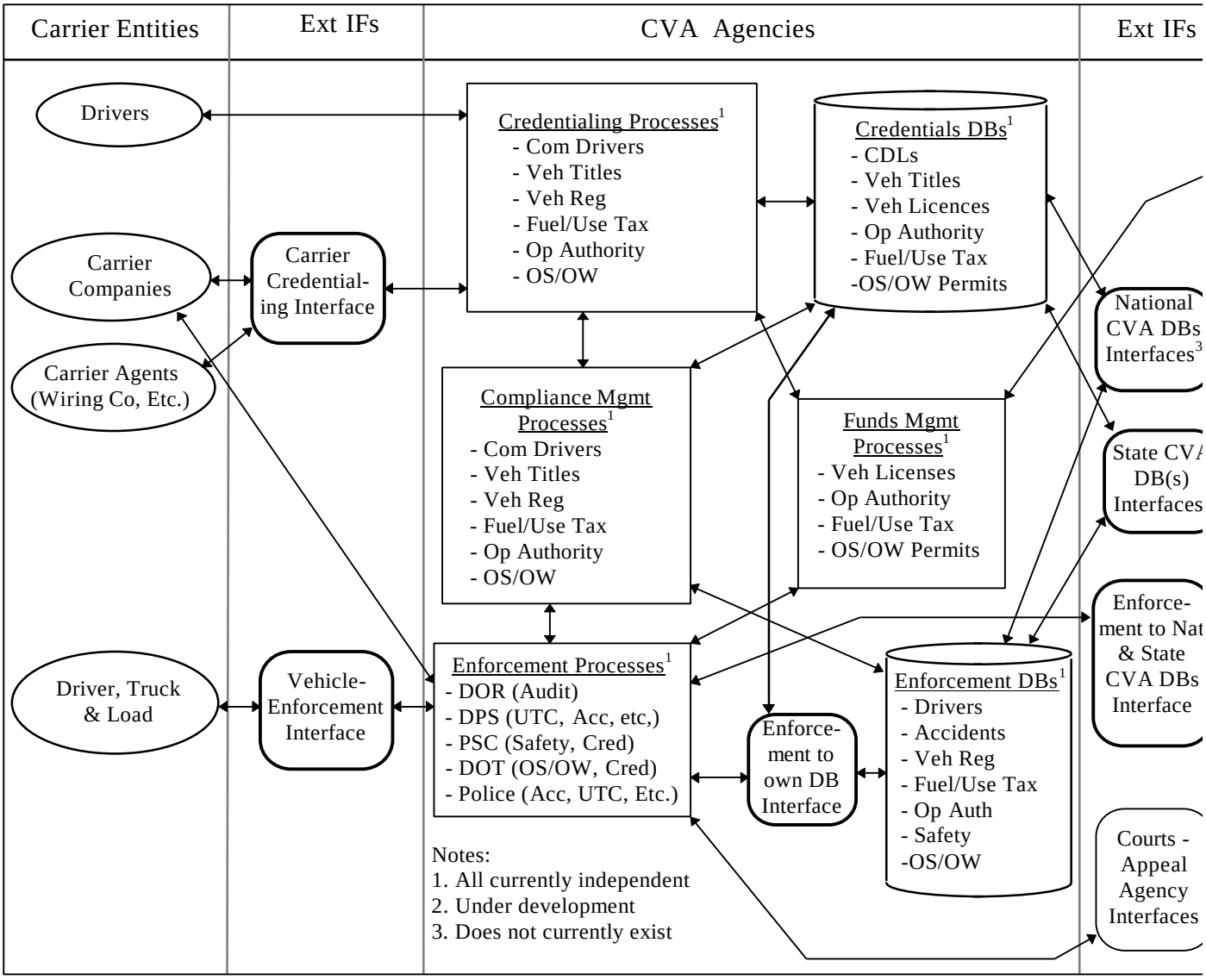

Figure 4-1 Integrated View of the Desired CVA Agencies' Information System

typically exist within the agencies. The interfaces between field enforcement and their own databases are of strong interest because these interfaces can be significantly improved. It must be noted that these processes and databases are currently unique to the agencies with minimal interactions or information sharing. It is also worth noting that the Credentialing and Enforcement databases are independent within each agency, with the exception of DPS which has an integrated database for all driver credentials and adjudicated citation results. The Compliance Management process, which uses enforcement results as criteria for Credentialing and to guide Enforcement, is most functional in PSC and DPS, and less so in DOR and DOT.

External Interfaces between the CVA agencies and Other State and National entities are of very strong interest because they are key to near term integration of the CVA agency processes, and providing Enforcement with roadside access to all Credentialing and Enforcement Databases. These interfaces, which do not currently exist, are:

- CVA Agency to National CVA Databases, which would enable the CVA Agencies to place their data into the national files and access information placed there by other jurisdictions (other states, Canadian provinces, etc.).
- CVA Agency to State CVA Databases, which would enable the CVA Agencies to place their data into the state files and access information placed there by the other Georgia CVA agencies.
- Field Enforcement to National and State CVA Databases, which would support wireless access from the roadside to any information needed by the enforcement officer.

The National and State Entities of interest for current purposes include 'clearinghouses' that host the various Credentials and Enforcement Databases. *It is assumed that the national clearinghouses will contain information on interstate carriers, and the state clearinghouses will contain information on intrastate carriers.* The current trend at the national level seems to be separate clearinghouses for each type of credential and enforcement information. There *may* be advantages to that approach, but at a minimum these various clearinghouses must be consistent in content and user interface, and must be integrated in the sense that information must be efficiently obtained and used from any combination of them. A state clearinghouse does not currently exist in Georgia, but is the proposed near term method for sharing information among the CVA agencies. The interface between the agencies' Enforcement processes and the Courts-Appeal Agency is considered outside the scope of this project, but could possibly be improved.

4.2 GEORGIA'S PROPOSED CVISN ARCHITECTURE

The national CVISN program has developed an architecture based on the general integrating concept outlined above. This section develops a Georgia CVISN architecture that is compliant with the national CVISN program and accommodates Georgia's integrating concept.

Figure 4-2 diagrams the proposed Georgia CVISN architecture. The following paragraphs will identify the major functions of each physical component.

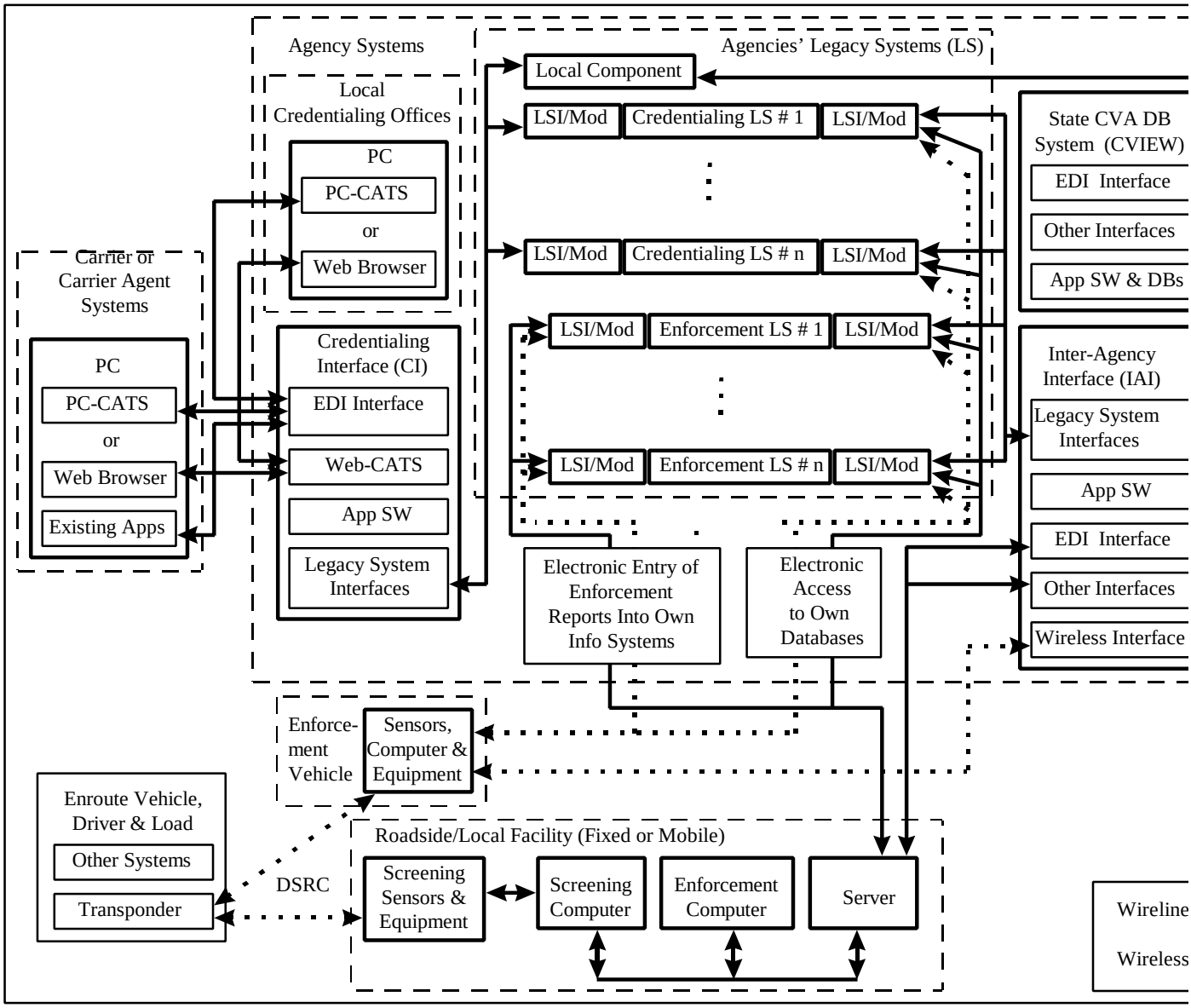

Figure 4-2 Proposed Georgia CVISN Architecture

4.2.1 Carrier or Carrier Agent Systems/Components

To interact electronically with Georgia's CVA agencies, the carriers will need a Personal Computer (PC). The software that allows the carrier to interact with the agencies is referred to as Carrier Automated Transactions System (CATS) in the CVISN architecture. The CATS is being developed in two versions, one that is totally PC based software program (which will be referred to as PC-CATS) and a server based web site that can be accessed with a standard web browser (which will be referred to as Web-CATS). Standard browsers include Netscape's Communicator or Microsoft's Explorer. The carrier/agent system should also be able to transfer information from other carrier software directly into the PC-CATS or the web browser. For the larger carriers, a direct connection between their existing information systems and the Carrier Interface (CI) component should also be supported via standard EDI transactions.

Each of the two CVISN Prototyping states, Maryland and Virginia, appear to be developing both PC and web based versions of CATS, which should be evaluated for use by Georgia.

4.2.2 Local Credentialing Office Component

The local credentialing offices, if they exist, have the same options as the carrier or carrier agents; i.e., a PC-CATS or Web-CATS. The local credentialing office clerks would interact with the CI for a walk-in carrier just as a carrier or carrier agent would on his/her own system.

4.2.3 Credentialing Interface

A single Credentialing Interface is necessary to interconnect all carriers, agents, and local credentialing offices with the central credentialing office staffs and information systems (legacy systems). This CI must support all electronic interchanges between the agencies' central offices/systems and carriers, agents, and local credentialing offices. This includes supply of electronic forms, submission of credentialing applications, error notices and correction responses, invoices and payments, and issuance of both temporary, short term, and annual credentials to the degree possible.

4.2.4 Legacy System Interfaces and Modifications (LSI/Mod)

There are conceptually two LSI/Mod components, which may be combined into a single physical component if desired.

The first component provides all additional hardware and software necessary to support all electronic interactions between the agencies and carriers, agents and local credentialing offices (via the CI) for purposes of providing credentials and allowing access to information from agencies' databases that is shareable with carriers and agents.

The second LSI/Mod component provides all additional hardware and software necessary to support all electronic interactions *between agencies* (via the IAI) for both credentialing and enforcement purposes, particularly the exchange of all information from the agencies' databases that is shareable with other agencies (which may differ with various agency pairs).

4.2.5 Agencies' Legacy Systems

These are the information systems currently in use by the agencies to support their credentialing activities for the drivers, carriers, vehicles and loads. Necessary changes to these systems to support electronic interchanges with carriers and other agencies are included in the LSI/Mod component.

4.2.6 Inter-Agency Interface

A single Inter-Agency Interface (IAI) component is preferred to interconnect all of the agencies with each other and with the National and State CVA Database components. This will provide a single point of access to obtain *any* credentialing and enforcement data that is shareable between agencies (within the state, with other states' agencies, and with national entities). In the CVISN architecture being implemented in Maryland and Virginia, the interfaces between state agencies' legacy systems and several existing or planned National CVA databases are independent of each other. The interfaces between state agencies' legacy systems and the State CVA Database in these two pilot states' CVISN implementation is incorporated into a component called the Commercial Vehicle Information Exchange Window (CVIEW).

4.2.7 State CVA Database Component

The State CVA Database component hosts and manages all routinely shareable credentialing and enforcement information on intrastate, exempt, and other carriers based in Georgia who do not have federally issued credentials. This is equivalent to the most significant of the functions of the Maryland and Virginia CVIEW components.

4.2.8 National CVA Databases

The National CVA Database component hosts and manages all routinely shareable credentialing and enforcement information on interstate or other carriers with federally issued credentials. This component is called the 'Core Infrastructure Systems' in the CVISN architecture, and consists of several independent databases and clearinghouses that exist, are under development, or are planned. The independent development of these many National CVA Databases will result in significant complications in the interfaces to state agencies' legacy systems and in systems that must access information in these databases.

4.2.9 Enforcement Agencies' Roadside Facilities (Fixed and Mobile)

These are primarily the GDOT/OPE weigh stations and mobile weigh scales. These facilities support both PSC and OPE enforcement activities, and sometimes DPS and local police enforcement activities involving carrier vehicles. These facilities are envisioned to consist of a server and one or more computers running specific application software. One computer will be required to operate the Electronic Screening system, one will support preparation and electronic communication of enforcement activity reports, citations, etc. The CVISN concepts for these roadside facilities have various names, such as the Roadside Operations Computer (ROC), abd the ASPEN software being developed to support electronic recording and reporting of inspection results.

4.2.10 Enforcement Agencies' Vehicles

All enforcement vehicles are envisioned to be equipped with computer systems and other technology as necessary to optimally support mobile enforcement activities. These vehicular components will provide technology aids to support mobile Electronic Screening; electronic citation, inspection, accident reporting; and other enforcement needs. Of particular interest is the ability to wirelessly connect to the IAI component to access credentials and enforcement information on any driver, carrier, vehicle, and load, regardless of the location of the information.

4.3 MAJOR PROJECT SETS FOR ITS/CVO IMPLEMENTATION

Considering the integrated view of the CVA Agencies' processes, databases, and interfaces presented above, the Working Group's objectives identified in Section 4 can be translated into a set of proposed projects. The planned projects are divided into three categories, which are, in general priority order:

- Near term agency integration,
- Enforcement roadside facilities and vehicles, and
- Long-term upgrades of CVA agencies' information systems.

4.3.1 Agency Integration Project Sets

There are significant political, legal, and technical issues to be resolved in order to develop optimally integrated information system(s) for the CVA agencies. Time, effort and funds will be required to solve these issues, and the outcomes are at not all predictable. Therefore, the near-term integration projects assume minimum changes to current agency structures and information systems, but does not restrict these changes. These projects are, in general priority order:

- Develop an integrated carrier-agency credentialing interface.
- Develop an integrated information sharing capability between all agencies for interstate and other carriers with federally issued credentials.
- Develop an integrated information sharing capability between agencies for intrastate and other carriers with Georgia issued credentials.

Note that these projects create a *virtual integration* of the agencies.

4.3.2 Enforcement's Roadside Facilities and Vehicles Project Sets

The second priority set of projects addresses improved aids and interfaces for the Enforcement functions within the CVA agencies. These project sets are, in general priority order:

- Develop common hardware and software aids for such Enforcement activities as citation and inspection report preparation. The selected hardware and software must be able to support longer term applications such as electronic clearance and access to State and National CVA Databases.
- Develop wireline digital communication capability between Enforcement roadside facilities and their own legacy systems and the common Inter-Agency Interface, through which access to the National and State CVA databases will be provided. This capability would support downloading of credentials and enforcement information to the roadside facility and uploading of citation/inspection/other information to the agencies' legacy databases.

- Develop a common wireless communications capability between Enforcement agencies' field and central components. The field systems of interest include mobile roadside and vehicle based components. Central components include both the agencies own central legacy systems and the IAI for access to the State, and National CVA Databases.
- Develop a full electronic screening capability for all Enforcement agencies' roadside facilities and vehicles. This electronic screening capability would consider all available credentials information and enforcement histories for the driver, carrier, vehicle and load.

4.3.3 Project Sets to Redevelop Agencies' Information Systems

The long term objective is to develop information systems that optimally integrate the CVA functions and are inherently able to share information efficiently. Precisely what this optimum integration entails need not be decided at this time. The experiences gained in working together via the interim integrated system (as developed in the agency integration projects) will provide insight into the issues and potential solutions. These longer term projects include, in priority order:

- Developing standards for all data items involved in the CVA processes.
- Adopting or developing database standards, including an integrated design, for all databases involved in the CVA processes.
- As necessity dictates or opportunity arises, redevelop each agency's' information system with the following, and probably other, objectives in mind:
  - Using the developed standards for CVA data items and databases,
  - Absorbing the carrier-agency side of the LSI/Mod into the system,
  - Absorbing the inter-agency side of the LSI/Mod into the system, and
  - Developing a fully functional Compliance Management process that integrates the Credentialing and Enforcement processes within each agency to optimize the performance of both using Enforcement results.
- Physically integrating some or all of the major CVA functions if and when politically feasible.

4.4 DESCRIPTIONS OF PROJECT SETS

Each of the project sets identified above are described in more detail.

4.4.1 Integrated Carrier-Agency Credentialing Interface

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.1.1 Project Set Objective(s)

This project set will provide a unified and integrating interface between the carriers and all of Georgia's CVA agencies, primarily to support credentialing but possibly carrier audit as well. Physical integration of forms and credentialing functions is a possible approach but is not assumed. The focus will be on an electronic interface, which could facilitate some integration of agency functions (such as integrated local credentialing offices around the state).

4.4.1.2 Major Functions Included

Operating Authority, Vehicle Licenses/Tags, Fuel/Use Taxation, special load permits (OS/OW and HAZMAT) for all carriers, vehicles, and loads.

4.4.1.3 Georgia CVISN Components Developed

This project set would involve development of a PC-CATS, a Web-CATS, a CI, and the carrier-agency LSI/Mod components for each credentialing agencies' legacy systems(s).

4.4.1.4 Technical Discussion and Approach

Current interfaces between the carriers and CVA functions are via mail, fax, or walk-in transport of unique documents to each of the involved CVA function locations. A common electronic interface is the primary focus of this project set, but other possibilities that should be addressed in fully developing this interface are:

- To what degree can and will the current mail, fax, and walk-in interfaces be integrated?
- To what degree can and will the current documents needed for Credentialing be integrated?
- To what degree can and will the credentialing schedules and effective periods be integrated?

If the mail, fax, and walk-in interfaces are to be integrated, current local County Tag Offices may process walk-ins, and the current centralized location(s) could process mailed, faxed, and electronic applications. The same computerized interface could be used by both carriers/agents and local credentialing office personnel (to process walk-ins); both resulting in the application going to the central location(s).

Whether the current documents and schedules/periods can be integrated primarily affects the complexity of the integrated interface and the legacy systems for each of the CVA functions. The intent is to integrate forms and schedules as much as feasible.

The technical approach to developing the electronic interface is as follows:

- Determine and document the detailed requirements for each of Georgia's CVISN components of the integrated carrier-agency credentialing interface.
- Evaluate the PC-CATS, Web-CATS and CI versions now under development by the CVISN Prototype and Pilot states for possible use in Georgia. Also evaluate the experiences of these states in developing the LSI/Mod components for their legacy systems.
- Select/adapt existing versions or develop Georgia's versions of the PC-CATS, Web-CATS, CI; and develop carrier-agency LSI/Mod components for all agencies' legacy systems.
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

The integrated carrier-agency credentialing interface may be developed for some subset of the major functions (e.g., the IRP and IFTA) initially, with the other major functions added incrementally.

4.4.2 Integrated Capability for Interstate/National Information Sharing

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.2.1 Project Set Objective(s)

This project set will fully develop Georgia CVA agencies' ability to exchange all shareable credentialing and enforcement information among themselves about interstate carriers and driver, carrier, vehicle, and special load credentials related information that are issued or monitored by federal CVA agencies.

4.4.2.2 Major Functions Included

All of the major functions dealing with interstate carriers will be involved; i.e., Commercial Driver Licenses, Operating Authority, Safety of Operations, Titles, Vehicle Licenses/Tags, Fuel/Use Taxes, and OS/OW.

4.4.2.3 Georgia's CVISN Components Developed

This project set would develop the inter-agency LSI/Mod component for Georgia CVA agencies' interstate carrier legacy systems, the IAI, and interfaces between the IAI and the National CVA Databases (CVISN's Core Infrastructure Systems).

4.4.2.4 Technical Approach

The technical approach to developing this capability to share interstate drivers, carriers, vehicles, and special loads information between agencies is as follows:

- Determine and document the detailed requirements for each of Georgia's CVISN components of the integrated inter-agency information sharing capability.
- Evaluate the experiences of the CVISN prototype and Pilot states in developing interfaces between state agencies' legacy systems and the CVISN Core Infrastructure. Also evaluate the relevant portions of the CVIEW components being developed by these states for possible uses in Georgia.
- Select, adapt or develop Georgia's versions of the inter-agency LSI/Mods, the IAI, and the interfaces between the IAI and the National CVA Databases (Core Infrastructure Systems).
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

This integrated inter-agency information sharing capability may be developed for some subset of the major functions (e.g., the IRP and SSRS) initially, with the other major interstate credentialing and enforcement functions added incrementally.

4.4.3 Integrated Capability for Intrastate Information Sharing

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.3.1 Project Set Objectives

This project set will fully develop Georgia CVA agencies' ability to exchange all shareable credentialing and enforcement information among themselves about intrastate carriers and driver, carrier, vehicle, and special load credentials related information that are issued or monitored by Georgia CVA agencies.

4.4.3.2 Major Functions Included

All of the major functions dealing with intrastate, exempt, and other state credentialed drivers, carriers, vehicles, and special loads will be included; i.e., Commercial Driver Licenses, Operating Authority, Safety of Operations, Titles, Vehicle Licenses/Tags, and OS/OW.

4.4.3.3 Georgia CVISN Components Developed

This project set would develop the remaining portion of the inter-agency LSI/Mod component for each credentialing and enforcement agencies' intrastate carrier legacy systems, the intrastate portion of the IAI, and interfaces between the IAI and the State CVA Database component (CVIEW).

4.4.3.4 Technical Approach

The technical approach to developing this capability to exchange intrastate information between Georgia's CVA agencies is as follows:

- Determine and document the detailed requirements for each of Georgia's intrastate CVISN components of the integrated inter-agency information sharing capability.
- Evaluate the experiences of the CVISN prototype and Pilot states in developing interfaces between state agencies' legacy systems and their CVIEW. Also evaluate the intrastate database portions of these states' CVIEW for possible uses in Georgia.
- Select, adapt or develop Georgia's versions of the intrastate elements of the inter-agency LSI/Mods, the IAI, and the interfaces between the IAI and the State CVA Database component (CVIEW).
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

This integrated inter-agency information sharing capability may be developed for some subset of the major functions (e.g., Operating Authority and Vehicle Registration) initially, with the other major intrastate credentialing and enforcement functions added incrementally.

4.4.4 Common Enforcement Field Computer Systems and Software Aids

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.4.1 Project Set Objective(s)

The objective of this project set is to provide effective computer systems and software to support field enforcement functions. The initial effort will focus on electronic preparation and upload of enforcement action reports, such as citation and inspection report preparation. The selected hardware and software must be able to support longer term enforcement technology goals such as electronic clearance and access to State and National CVA Databases.

4.4.4.2 Major Functions Included

All CVA agencies with Enforcement processes are potentially involved in these project sets; i.e., DPS, PSC and DOT.

4.4.4.3 Georgia CVISN Components Developed

The Roadside Facility's Enforcement Computer and a computer for Enforcement Vehicle use are to be developed in this project set. In addition, software to support the selected enforcement functions will be developed.

4.4.4.4 Technical Approach

The technical approach to developing this capability to develop common computer and software aids is as follows:

- Determine and document the detailed requirements for each of Georgia's CVO enforcement agencies for common computers and software.
- Evaluate any relevant efforts from the CVISN Prototype and Pilot states in developing such enforcement computers and software, such as the ASPEN and pen-based computers for safety inspections.
- Select, adapt or develop common computers and software for use by Georgia's enforcement agencies.
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

These common computers and software will be developed first for PSC's safety inspections and DPS/PSC/OPE prepared citations, such as Uniform Traffic Citations, Overweight citations, and those associated with other credentials violations.

These computers and software will be developed to be compatible with electronic uploading to the agencies' legacy systems. This will require coordination with the wireline and wireless digital communications capabilities to be developed in other project sets.

4.4.5 Enforcement's Wireline Digital Communications Capability

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.5.1 Project Set Objective(s)

The objectives of this project set is to provide OPE's fixed Roadside Facilities with digital access to OPE and PSC legacy systems (for each agencies' officers), and to provide access to the National and State CVA Databases via the IAI. This capability would support downloading of credentials and enforcement information to the Roadside Facility, and uploading of enforcement action reports.

4.4.5.2 Major Functions Included

All CVA agencies with Enforcement processes are potentially involved in these project sets; i.e., DPS, PSC and DOT.

4.4.5.3 Georgia CVISN Components Developed

The Georgia CVISN components to be developed are the Roadside Enforcement Server with wireline interfaces, the wireline communications media, the LSI/Mod wireline interface (assuming the LSI/Mod already exists), and the IAI wireline interfaces (assuming the IAI already exists). The potential wireline media include dial-up, Internet, or a commercial service (such as frame

relay). In addition, application programs will be developed for the Roadside Facility Server, the agencies' LSI/Mod, and the IAI to support the desired functional capabilities (uploading/downloading credentialing and enforcement data).

4.4.5.4 Technical Approach

The general approach is to use commercially available hardware and/or services for the wireline media and all wireline interfaces. Server computers will be procured for each of OPE's fixed Roadside Facilities. The software applications for the Roadside Facility Servers, the LSI/Mod and the IAI will be developed using the following approach:

- Determine and document the detailed requirements for each function requiring uploading and downloading of credentialing and enforcement data from OPE's fixed Roadside Facilities. This specifically includes the Advantage CVO project.
- Evaluate any relevant results from the CVISN Prototype and Pilot states and from non-related efforts to develop a wireline digital communications capability to fixed Roadside Facilities.
- Select, adapt or develop the wireline communications capability for OPE's fixed Roadside Facilities.
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

This wireline communications capability will be developed first for uploading of safety inspections and various citations, support of the Advantage CVO project, and for access to SAFER. Adaptations of the capability for exchanging data via the IAI (with all CVA agencies and the State and National CVA Databases) will be developed as that component is developed.

4.4.6 Enforcement's Common Wireless Digital Communications Capability

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.6.1 Project Set Objective(s)

The objective of this project set is to provide a standard wireless digital communications capability from Georgia enforcement agencies' mobile Roadside Facilities and vehicles with their own agencies and the State and National CVA Databases (via the IAI). This capability would support downloading of credentials and enforcement information and uploading of enforcement action reports to their own agencies.

4.4.6.2 Major Functions Involved

All CVA agencies with Enforcement processes are potentially involved in these project sets; i.e., DPS, PSC and DOT.

4.4.6.3 Georgia CVISN Components Developed

The components to be developed are the mobile Roadside Facility and Vehicle Computers with wireless interfaces, the wireless communications media, the LSI/Mod wireless interface (assuming the LSI/Mod already exists), and the IAI wireless interface (assuming the IAI already exists). If feasible financially, several wireless media should be supported; primarily standard cellular, special cellular services, and satellite. If necessary, the software applications developed for the Wireline Digital Communication Capability will be extended to work with this capability.

4.4.6.4 Technical Approach

The general approach is to use commercially available hardware and/or services for the wireline media and all wireline interfaces. Server computers will be procured for each of OPE's fixed Roadside Facilities. The software applications for the Roadside Facility Servers, the LSI/Mod and the IAI will be developed using the following approach:

- Determine and document the detailed requirements for each function requiring uploading and downloading of credentialing and enforcement data from mobile Roadside Facilities and vehicles.
- Evaluate any relevant results from the CVISN Prototype and Pilot states and other efforts to develop such a wireless digital communications capability for enforcement.
- Select, adapt or develop the wireless communications capability for OPE's mobile Roadside Facilities and Vehicles.
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

4.4.7 Electronic Screening Capability

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.7.1 Project Set Objective(s)

The objective of this project set is to allow field Enforcement personnel to consider all available credentials and enforcement information on the carrier, truck and driver before deciding which vehicles to inspect or check more closely. This capability would provide a valuable tool for minimizing the impact of enforcement actions on responsible carriers and drivers, and allow full impact of those activities on carriers and drivers with problem histories. In addition, this capability would eventually allow unmanned monitoring of CV operating restrictions such as operating hours, restricted zones, HAZMAT transport and other such situations.

4.4.7.2 Major Functions Included

All CVA agencies with Enforcement processes will be involved in this project set; i.e., DPS, PSC and DOT.

4.4.7.3 Georgia's CVISN Components Developed

Electronic clearance systems (including transponder readers, sensors, processors, etc.) will be developed for Georgia enforcement agencies' fixed and mobile Roadside Facilities and for Enforcement Vehicles. Carrier vehicles must have transponders or other electronically readable tags for this capability to function as envisioned, and, in the future, on-board safety system monitors tied to transponders. The project set description assumes the existence of the National CVA Database, State CVA Database, and IAI components, as well as the wireline and wireless communications capabilities defined in previously described project sets.

4.4.7.4 Technical Approach

The general approach is to use previously developed electronic screening concepts, equipment and software to the maximum degree feasible, including those developed by the CVISN Prototype

and Pilot states and the Advantage CVO program. The technical approach can be described as follows:

- Determine and document the detailed requirements for electronic screening in each of the environments; i.e., fixed Roadside Facilities, mobile Roadside facilities, and from Vehicles.
- Evaluate any relevant results from the CVISN Prototype and Pilot states and other efforts to develop electronic screening capabilities for these three environments.
- Select, adapt or develop Georgia's electronic screening capability for Enforcement fixed Roadside Facilities, mobile Roadside facilities, and Vehicles.
- Conduct necessary evaluations to assure that requirements have been met, and correct any deficiencies found.

4.4.8 Redevelopment of the Agencies' Functional Information Systems

Objectives, major functions included, Georgia CVISN components developed, and technical approach are described for this project set.

4.4.8.1 Project Set Objective(s)

The objectives of this project set are to redevelop the agencies' information systems with the following objectives in mind:

- Using the CVA data and database standards developed for the State CVA Databases,
- Absorbing the Integrated Carrier Credentialing Interface into the system,
- Absorbing the National CVA Databases and State Database Interfaces into the system, and
- Developing a fully functional Compliance Management process that integrates the Credentialing and Enforcement processes and optimizes boths' performance using Enforcement results.

4.4.8.2 Major Functions Included

Any and all of the major functions at the appropriate time in the future.

4.4.8.3 Georgia's CVISN Components Developed

Newly developed information systems for each of the CVA agencies will replace the current legacy systems and both LSI/Mod components.

4.4.8.4 Technical Approach

No specific technical approach is indicated; the standard development process (requirements engineering, design/selection of components, implementation/integration, test, and deployment) should be employed.

4.4.9 Physical Integration Of CVA Functions

This project set would physically integrate some or all of the major CVA functions when and if politically feasible.

4.4.9.1 Project Set Objective(s)

The objective of this project set is to take the ultimate step in enabling the CVA functions to work together cooperatively, and to reduce costs for staff and equipment. This may or may not be

feasible politically, and if the agency information systems are optimally integrated, one could argue that this step is unnecessary.

4.4.9.2 Major Functions Involved

The most logical candidates for physical integration are Operating Authority, Vehicle Licensing, and Fuel/Use Taxation. OS/OW permits could also be integrated with this group, but DOT should retain authority to route the OS/OW loads.

4.4.9.3 Georgia's CVISN Components Developed

If the CVA agencies' legacy systems have all been replaced with well integrated information systems, no addition component development will be needed. If not, these systems may be replaced as a part of this process.

4.4.9.4 Technical Approach

No technical issues are involved unless new information systems are to be developed simultaneously. If this is the case, the standard development process (requirements engineering, design/selection of components, implementation/integration, test, and deployment) should be employed

4.5 CONTRIBUTION OF ON-GOING PROJECTS TO PROPOSED CAPABILITIES

Table 4-1 identifies the relationships of on-going and planned ITS/CVO projects in Georgia's CVA agencies to the capabilities described in the proposed project sets. These projects were first described in Section 2 for each CVA agency. The more significant contributions of these on-going projects are described below for each of the proposed project sets.

4.5.1 Integrated Carrier-Agency Credentialing Interface

The Inter-Regional CVO Institutional Issues Project, being lead by GDOT/OPE for a 12 state consortium, will determine and document the interstate carrier requirements for this interface and provide an implementation plan for that portion of the interface for Georgia and the other states.

DOR will implement the capability of Georgia based interstate carriers to file their IFTA returns via the TaxConnect commercial service. While this is not a part of the planned Integrated Carrier-Agency Interface, the capability would be integrated with other types of taxes.

The AVI Permitting Project will likely begin the development of a Web-based OS/OW permitting capability (by examining requirements and possibly further efforts).

4.5.2 Integrated Capability for Interstate/National Information Sharing

DOR's planned interfaces to IRP Inc. and IFTA Inc. will complete their interfaces to those National CVA Database components. This approach is in accordance with the national CVISN models being established by the CVISN prototype states. These interfaces may need some changes to interface with Georgia's IAI component after its development.

Table 4-1 Relationship of Agencies On-going/Planned ITS/CVO Projects and Proposed C

Proposed Capabilities/ Project Sets	**Agency Project Contributions**		
	DOR	**PSC**	**DPS**
Integrated Carrier-Agency Credentialing Interface	•Inter-regional CVO Institutional Issues •TaxConnect Filing of IFTA Returns	•Inter-regional CVO Institutional Issues	
Integrated Interstate/National Information Sharing	•IRP Inc and IFTA Inc. Interfacing	•Joint OPE/PSC project	
Integrated Intrastate Information Sharing			•Court Automation •Redeveloping Accident Reporting IS
Common Enforcement Field Computers & Software		•Joint OPE/PSC project •ASPEN/Pen-based computers in use	
Digital Wireline Communication		•Joint OPE/PSC project	
Common Wireless Communication			•Experimental capability
Electronic Screening			
Redevelop Agencies' Information Systems		•Intrastate Carrier Credentialing IS	•Accident Reporting IS
Physical Integration of CVA Functions			

The Joint PSC/OPE SAFER Access Project (not the official project name) will pruchase and install servers in six of OPE's fixed Roadside Facilities (weight stations), network these servers with other computers in the Facilities (Electronic Screening and Enforcement computers), and will support the development of server based applications for SAFER access. This project and the AVI Permitting Project are being coordinated for maximum synergy in achieving both project's objectives.

4.5.3 Integrated Capability for Intrastate Information Sharing

The most significant known on-going project in the area is DPS's restructuring of their accident reporting system which will provide electronic access for all legitimate users.

4.5.4 Common Enforcement Field Computers and Software

The AVI Permitting Project will develop common citation preparation software for PSC and OPE use on both fixed and portable field computers.

The Joint PSC/OPE SAFER Access Project will purchase and install servers in six of OPE's fixed Roadside Facilities (weight stations) and network these servers with other computers in the Facilities (Electronic Screening and Enforcement computers).

ASPEN software and a Fujitsu pen-based computer are in use in PSC, but the hardware performance has been disappointing. The ASPEN software will likely be moved to laptop computers. The ASPEN software will be evaluated for the electronic citation preparation capability.

4.5.5 Enforcement's Digital Wireline Communications Capability

The AVI Permitting and Joint PSC/OPE Projects will jointly determine the requirements for this communications capability to support the two projects. The initial capability will likely be a dial-up connection, but will eventually be replaced with a persistent connection. PSC will develop an LSI/Mod for their SafetyNet system and software for uploading electronic safety inspection reports from the weigh station. The AVI Permitting project will develop an initial version of OPE's LSI/Mod components for OPE's legacy systems, and applications software to download OS/OW permits and upload electronically prepared citations of several varieties.

4.5.6 Enforcement's Common Digital Communications Capability

DPS's experimental implementation of a wireless digital communications capability in part of the state is the first step in developing this capability. They plan to expand the capability statewide and make it available to other enforcement agencies if technically successful and if funding mechanisms can be identified.

4.5.7 Redevelopment of Agencies' Information Systems

Three of Georgia's CVA agencies have active plans to redevelop one of their legacy information systems. If the requirements for these systems for integration into Georgia's CVISN system can be defined soon enough, these information systems will be developed to meet these requirements. The legacy systems to be redeveloped are OPE's OS/OW Permitting system, PSC's intrastate carrier operating authority systems, and DPS's accident reporting system (already underway).

4.5.8 Integration of Agencies' Functions

No projects are currently underway or planned in this area.

4.6 POTENTIAL PROJECTS WITHIN EACH OF THE PROJECT SETS

If all of the proposed project sets were completed for all required functionality, Georgia would have a relatively complete CVISN implementation and ITS/CVO capability. Projects are defined based on the technical approach outlined for each proposed project set and building on the on-going and already planned efforts. The objective of each project will be the development of some functionally defined portion of one or more of Georgia's CVISN components. In addition to technology based items, a CVISN component may require a new procedure, form, or processing location.

4.6.1 Integrated Carrier-Agency Credentialing Interface

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:
   - Determine the detailed requirements for this interface for all Georgia based carriers. For Interstate and federally required credentials, complete the requirements for the legacy system LSI/Mod for the agencies legacy systems (begun in the Inter-Regional CVO Institutional Issues Project). For intrastate and other carriers needing Georgia required credentials, the effort must start from where this project leaves off.
   - Evaluate the intrastate portions of the CVISN Prototype and Pilot state CATS, and CI for possible use in Georgia (the LSI/Mod components are very unlikely to be useable).
   - Set priorities among the credentialing functions (interstate and intrastate Operating Authority, Vehicle Registration, etc.) for development of this interface. These priorities will determine the order in which the interface is expanded to support the functions.

2. The second project will select/adapt/develop and install Georgia's version of the Web-CATS, PC-CATS, CI and LSI/Mod for the highest priority credentialing function or functions.

3. Evaluate the initial increment of this interface for technical performance, functional effectiveness, and other MOEs as determined fitting. Correct problems as necessary to achieve requirements.

4. Later projects will incrementally expand this component to cover all credentialing functions as priority and funds availability allow.

Note that OPE's AVI Permitting Project will evaluate the potential for a Web-CATS like product for use in their credentialing function (OS/OW Permitting).

4.6.2 Integrated Capability for Interstate/National Information Sharing

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:
   - Determine the detailed requirements for the IAI for national data sharing and the inter-agency LSI/Mod for all of Georgia's legacy systems that must interface to the National CVA Database components (the prototype CVISN's Core Infrastructure Systems).
   - Evaluate the CVISN Prototype and Pilot state LSI/Mod components for possible use in Georgia. This should be possible, especially for the commercial services such as VISTA and IFTA RPC. However, the issue of one-on-one direct connections between legacy systems and these services must be carefully considered. That approach will create a more complex system and will not directly support sharing among state agencies.
   - Set priorities among the credentialing functions (interstate Operating Authority, Vehicle Registration, etc.) for development of this capability, which must consider the order in which these databases will be become operational. These priorities will determine the order in which the capability is expanded to support the functions.

2. The second project will select/adapt/develop and install Georgia's IAI and the inter-agency LSI/Mod for the highest priority interstate credentialing function or functions.

3. Evaluate the initial increment of this capability for technical performance, functional effectiveness, and other MOEs as determined fitting. Correct problems as necessary to achieve requirements.

4. Later projects will incrementally expand this capability to cover all credentialing functions as priority and funds availability allow.

Note that OPE's AVI Permitting Project will develop an initial version of an LSI/Mod for their legacy systems for OS/OW Permitting and OS/OW Citations. The Joint PSC/OPE Project is expected to implement an initial version of an LSI/Mod for their SafetyNet system.

4.6.3 Integrated Capability for Intrastate Information Sharing

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:
   - Determine the detailed requirements for the IAI for intrastate information sharing and the LSI/Mod for all of Georgia's legacy systems that must interface to the State CVA Database component (somewhat analogous to the prototypes of CVIEW).
   - Evaluate the CVISN Prototype and Pilot states' CVIEW and LSI/Mod components for possible use in Georgia for this capability.
   - Set priorities among the credentialing functions (intrastate Operating Authority, Vehicle Registration, etc.). These priorities will determine the order in which the capability is expanded to support the functions.

2. The second project will select/adapt/develop and install Georgia's IAI and the inter-agency LSI/Mod for the highest priority intrastate credentialing function or functions.

3. Evaluate the initial increment of this capability for technical performance, functional effectiveness, and other MOEs as determined fitting. Correct problems as necessary to achieve requirements.

4. Later projects will incrementally expand this capability to cover all credentialing functions as priority and funds availability allow.

4.6.4 Enforcement's Common Computer Systems and Software Aids

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:
   - Determine the detailed requirements for common computers, software and other technology aids to the various enforcement agencies field forces. In particular consider the requirements for the other Project sets; i.e., wireline and wireless communications and electronic screening.
   - Evaluate any CVISN Prototype and Pilot states' components, as well as other relevant products, for possible use in Georgia for this capability.
   - Set priorities among the enforcement functions to be supported. These priorities will determine the order in which the capability is expanded to support the functions.

2. Complete the on-going projects, particularly the Joint PSC/OPE SAFER Access Project and the AVI Permitting Project. These projects will
   - Install servers and network existing computers at six OPE weigh stations for OPE, PSC and other enforcement use if desired.
   - Develop software for electronic citation preparation for use on both standard PCs (at OPE weigh stations) and OPE/PSC portable computers.
   - Develop software for uploading electronic citations to OPE's citation system, for use on both standard PCs and portable computers.
   - Develop software for uploading PSC's safety inspection report into SafetyNet.

3. Evaluate the initial increment of this capability for technical performance, functional effectiveness, and other MOEs as determined fitting. Correct problems as necessary to achieve requirements.

4. Later projects will incrementally expand this capability to all OPE weigh stations and to cover other enforcement activity aids as priority and funds availability allow.

4.6.5 Enforcement's Wireline Digital Communications Capability

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:

- Determine the detailed requirements for wireline communications between OPE's weigh stations and central locations; i.e., the functions to be supported, types of information to be exchanged, data rates, etc. In particular, the functions to be implemented by on-going projects must be accommodated, as must access to the State and National CVA Databases (via the IAI) and support of electronic screening.
- Evaluate the options for communications equipment and services to satisfy requirements for this capability.
- Set priorities among the functions to be supported. These priorities will determine the order in which the capability is expanded to support the functions.

2. Complete the on-going projects, particularly the Joint PSC/OPE SAFER Access Project and the AVI Permitting Project. These projects will
   - Define requirements for this wireline communications capability.
   - Evaluate and procure communications equipment necessary to realize this capability.
   - Recommend appropriate commercial communications services for OPE procurement to realize this capability.

3. Evaluate the initial increment of this capability for technical performance, functional effectiveness, and other MOEs as determined fitting. Correct problems as necessary to achieve requirements.

4. Later projects will incrementally extend this capability to all OPE weigh stations and to support other enforcement communication needs as priority and funds availability allow.

4.6.6 Enforcement's Common Wireless Digital Communications Capability

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:
   - Determine the detailed requirements for wireless communications between OPE's weigh stations and central locations; i.e., the functions to be supported, types of information to be exchanged, data rates, etc. In particular, this capability must support access to the agencies own databases, the State and National CVA Databases (via the IAI) and electronic screening.
   - Evaluate the options for wireless communications equipment and services to satisfy requirements for this capability. Multiple wireless services may be required to achieve reliability requirements.
   - Set priorities among the functions to be supported. These priorities will determine the order in which the capability is expanded to support the functions.

2. Complete DPS's on-going experimental deployment of a wireless capability.

3. Evaluate the experimental capability for technical performance, functional effectiveness, and other MOEs as determined fitting. Identify and determine necessary corrections to achieve requirements.

4. Later projects will incrementally expand this capability to all areas of the state, to all enforcement vehicles, and to support other wireless communication needs as priority and funds allow.

4.6.7 Electronic Clearance Capability

The following potential projects will be evaluated carefully during the next Mainstreaming phase for implementation, and divided into smaller projects if necessary:

1. This first project will involve the following tasks:
   - Determine Georgia's detailed requirements for electronic screening from fixed and mobile Roadside Facilities and from enforcement vehicles. These requirements must consider existing investments in electronic screening systems at Georgia's weigh stations in the Advantage CVO technology.
   - Determine the compatibility of the Advantage CVO and prototype CVISN concepts, architectures, and any changes necessary to accommodate the future Dedicated Short Range Communications (DSRC) standard.
   - Determine how the current capabilities at Georgia's I-75 weigh stations can evolve as necessary to the eventual CVISN standard electronic screening standard.

2. Complete the on-going and planned projects, particularly the Joint PSC/OPE SAFER Access Project and the AVI Permitting Project. These projects will
   - The AVI Permitting Project will add OS/OW electronic permits to the Advantage CVO capability along I-75, evaluate Advantage CVO compatibility with CVISN, and evaluate the potential for adapting a prototype CVISN mobile Roadside Facility for Georgia use.
   - OPE plans to install the augmented Advantage CVO technology to all Georgia weigh stations.

3. Adapt Georgia's weigh stations to the standard DSRC if necessary.

4. Later projects will incrementally extend this capability to OPE's mobile Roadside facilities and to each agencies' enforcement vehicles as desired.

4.6.8 Redevelop Agencies Functional Information Systems At Opportune Time

Separate projects will be required for each functions information system, and some of these are already planned. The proposed projects here will lay the necessary groundwork for these redevelopments, and will be required to develop the State CVA Database regardless of which option is chosen there.

1. Participate in any national level efforts to develop a common set of standards for all data items and transactions involved in Georgia's CVA functions. Georgia must adapt and extend these standards as necessary for use in its State CVA Database (CVIEW) component.
2. Develop common database standards for all CVA databases, and assure that an integrated design is developed. Some standards are being developed at the national level (in CVISN), but because of the number and independent nature of the National CVA Databases, it is not clear that an integrated design will develop. Georgia must participate to influence the national

effort toward common standards and an integrated design, and to assure that intrastate CVA needs are addressed if possible.

3. Separate projects to redevelop each function's information systems using the common data and database standards, and the integrated database design. At least one of these efforts is already in the procurement cycle (OPE's permits system).

4.6.9 Physically Integrate Functions Where Feasible

The only projects recommended here, because the issues involved are high level, are the ones for the Integrated Carrier Credentialing Interface.

5. ORGANIZATION AND MANAGEMENT APPROACH

This section presents the working group's organization and management approach to implementing the overall concepts and project sets identified in the previous Section. This approach is presented via the following topics:

- Agencies' commitment to implementing this plan,
- Continued development and maintenance of this plan,
- Involvement of the carrier industry in planning and projects,
- Training as a part of the projects,
- Implementation priorities for projects,
- Planning costs for early phases and initial projects,
- Estimated schedules and durations of projects, and
- Roles of the individual agencies in projects.

5.1 AGENCIES' COMMITMENTS TO IMPLEMENTING THIS PLAN

The signature page inside the cover of this plan attests to the agencies' good faith commitment, at the highest levels, to continuing this joint effort and to implementing this plan. As stated in the commitment, these agencies understand that more accessible information will allow more effective performance of their responsibilities, and that the ITS technologies to be implemented in this program are the key to this more accessible information.

It should also be noted that the agency representatives participating in the development of this plan are the very officials responsible for the CVA functions and/or the information systems that support them. These individuals have the authority to implement these projects, given management and budgetary support within their agencies.

5.2 CONTINUED DEVELOPMENT AND MAINTENANCE OF THIS PLAN

The members of this working group are dedicated to continuing the joint activities that lead to this plan. This planning process has brought some of these individuals together for the first time, and has lead to many conversations and ideas exchanged on improved interactions among the agencies. The working group has agreed to become the ITS Georgia CVO Interest Group and expand its membership to include any carriers interested in joining. ITS Georgia's stated mission is to provide a forum for ITS stakeholders in all functional areas to develop and maintain integrated ITS deployment plans, and to advise each other in deployment of these systems.

This working group and individuals will also continue into the next phase of ITS/CVO mainstreaming; i.e., development of more detailed project plans. This plan will be updated as necessary during this phase, and the detailed plans will be expansions on this plan as updated. During the development of detailed project plans, a mechanism will be identified to track progress on Georgia's ITS/CVO and CVISN capabilities and projects.

5.3 INVOLVEMENT OF THE CARRIER INDUSTRY IN PLANNING AND PROJECTS

The Georgia Motor Trucking Association (GMTA) has been an active participant in the development of this plan. GMTA will be involved in developing the detailed project plans and in project implementation. Their contribution to the working group is to provide the industry's input on the proposed ITS/CVO concepts and projects, including priorities.

Also, individual carriers will be invited to participate in defining requirements and in later development phases of each project as beneficial. The Integrated Carrier Credentialing Interface is a specific example of where this will be very important, if not indispensable.

When new procedures, forms, and technologies are introduced that directly interface with the carriers, familiarization and other necessary training will be a part of the project. This training may involve printed aids and instructions, computer-based or telephone assistance, classroom settings, or other techniques.

5.4 TRAINING AS A PART OF PROJECTS

Any project to develop a sophisticated technology based system involves several phases, namely requirements definition, design/selection of components, implementation/procurement of those components, integration and test of the system, and finally placing the system into service.

Note particularly that training of users and sustainers of the item are a critical part of this placing such a system into service. Especially for new technologies and information systems, the users may require specific familiarization even if they are familiar with similar items. Users may be either or both agency and carrier personnel, and may require separate training. The sustainers (system administrators, maintenance staff, etc.) will also require specific information and documentation about the item that is being placed into operation. The training needs of all stakeholders in these ITS/CVO systems will be incorporated into each project.

5.5 SELECTION OF PROJECTS FOR IMPLEMENTATION

The desired sequence of projects, beyond the Requirements Definition and completing on-going projects, within the proposed project sets will depend on the relative priority among the CVA functions to be supported by each capability. That cannot be settled now due to the time constraints for preparing this plan.

The final selections of specific projects and their implementation sequence will be completed as part of the 1998 Mainstreaming effort to prepare Project Plans.

The estimated overall benefits to carriers and agencies, scheduling factors, and indicated priorities of the potential project sets are summarized in Table 5-1 below.

Projects from most, if not all, of the project sets should be in an initial Georgia CVISN implementation phase.

Table 5-1 Estimated Benefits, Scheduling Factors, and Indicated Priority for Potential

Potential Projects	Estimated Benefit To					No. of Agencies	Com-plexity[1]	Tech Matu
	Carrier	DOR	PSC	OPE	DPS			
Integrated Carrier-Agency Credentialing Interface	VH	H	H	H	N	3	M	M
Integrated Capability for National Information Sharing	L	H	H	H	H	4	VH	L
Integrated Capability for Intrastate Information Sharing	L	H	H	H	H	4	VH	L
Enforcement's Computer & Software Aids	L	L	H	H	L	2-3	L	H
Enforcement's Wireline Digital Communications	L	M	H	H	L	2	M	H
Enforcement's Wireless Digital Communications	L	M	H	H	H	3	H	L
Electronic Clearance Capability	H	H	VH	VH	L	3-4	H	H
Redevelop Agencies' Information Systems	N	H	H	H	H	4	H	H
Physically integrate functions	VH	H	M	M	L	4	-	-

Legend: N = No, None, or Negligible; L = Low; M = Medium; H = High; VH = Very High

Notes:

1. Complexity implies level of costs and difficulty, Low is desirable
2. A Yes (Y) indicates a fundamental dependency on national CVISN projects
3. Dependent of CVISN Core Infrastructure
4. Dependent on Advantage CVO, CVISN,

5.6 PLANNING ESTIMATES OF COSTS FOR EARLIER PHASES OF PROJECT SETS

These estimates are generated for the earlier phases of the project sets by considering the amount of labor, hardware, and software associated with the probable initial ITS/CVO system to be developed. These estimates are contained in Table 5-2 below. Note that some assumptions are made as to the probable initial system/capability to be implemented in each project set. Estimates are not attempted for the incremental expansions of the initial systems and in other cases where the potential for miss-estimating is more serious.

It is understood that costs for implementing the selected ITS/CVO Mainstreaming projects will require sharing of costs between federal and state funds. The agencies will address state funds for their particular projects once the projects are better defined, costs are more accurately estimated, and the project selections are agreed upon.

Table 5-2 Planning Estimates of Costs for the Initial Projects

Project Sets	Labor ($)	HW ($)	SW ($)	Total ($)
Project Set 1. Integrated Carrier Credentialing Interface				
Determine Requirements, evaluate existing products, set priorities, etc.	75,000[1]	-	-	75,000
Select/adapt/develop Web-CATS, PC-CATS, CI and LSI/Mod for highest priority function(s) [2]	270,000	80,000	150,000	500,000
Evaluate, Correct Problems with Initial capability	50,000	-	-	50,000
Extend initial capability to all credentialing functions	270,000	80,000	150,000	500,000
Project Set 2. Integrated Capability for National Information Sharing				
Determine Requirements, evaluate existing products, set priorities, etc.	75,000[1]	-	-	75,000
Select/adapt/develop national part of IAI and Inter-Agency LSI/Mods for highest priority interstate legacy systems[2]	250,000	50,000	100,000	400,000
Evaluate, Correct Problems with Initial capability	50,000	-	-	50,000
Extend initial capability to all interstate credentialing functions	250,000	50,000	100,000	400,000
Project Set 3. Integrated Capability for Intrastate Information Sharing				
Determine Requirements, evaluate existing products, set priorities, etc.	75,000[1]	-	-	75,000
Select/adapt/develop intrastate portion of IAI, CVIEW, & I-A LSI/Mod for highest priority intrastate legacy systems[2]	450,000	50,000	100,000	600,000
Evaluate, Correct Problems with Initial capability	50,000	-	-	50,000
Extend initial capability to all intrastate credentialing functions	250,000	50,000	100,000	400,000

Table 5-2 Planning Estimates of Costs for the Initial Projects

Project Sets	Labor ($)	HW ($)	SW ($)	Total ($)
Project Set 4. Enforcement's Common Computer & Software Aids				
Determine Requirements, evaluate existing products, set priorities, etc.	On-Going Project	-	-	On-Going Project
Complete on-going projects in this area[2]	On-Going Project	-	-	On-Going Project
Evaluate, Correct Problems with Initial capability	On-Going Project	-	-	On-Going Project
Extend initial capability to all weigh stations and other activity aids	No Estimate	No Estimate	No Estimate	No Estimate
Project Set 5. Enforcement's Wireline Digital Communications				
Determine Requirements, evaluate existing products, set priorities, etc.	On-Going Project	-	-	On-Going Project
Complete on-going projects in this area[2]	On-Going Project	-	-	On-Going Project
Evaluate, Correct Problems with Initial capability	On-Going Project	-	-	On-Going Project
Extend initial capability to all intrastate credentialing functions	No Estimate	No Estimate	No Estimate	No Estimate
Project Set 6. Enforcement's Common Wireless Digital Communications Capabilities				
Determine Requirements, evaluate existing products, set priorities, etc.	25,000	-	-	25,000
Complete current experiment with an available wireless capability	On-Going Project	-	-	On-Going Project
Evaluate, Correct Problems with Initial capability	150,000	-	-	150,000
Extend corrected capability statewide and to all enforcement vehicles	No Estimate	No Estimate	No Estimate	No Estimate
Project Set 7. Enforcement's Electronic Clearance Capability				
Determine Requirements, evaluate existing products, set priorities, etc.				
Complete on-going projects in this area[2]	No Estimate for all WSs	No Estimate for all WSs	No Estimate for all WSs	No Est for all WSs
Evaluate, Correct Problems with Initial capability	-	-	-	-
Extend capability statewide to mobile roadside facilities and enforcement vehicles	No Estimate	No Estimate	No Estimate	No Estimate
Project Set 9. Redevelop Agency Information Systems As Opportunity Arises				
Develop Standards for CVA agency information systems (from nat'l efforts if at all possible)	50,000	-	-	50,000
Develop Agency Information systems as opportunity arises	No Estimate	No Estimate	No Estimate	No Estimate

Table 5-2 Planning Estimates of Costs for the Initial Projects

Project Sets	Labor ($)	HW ($)	SW ($)	Total ($)
Project set 10. Physical Integration of Agency Functions				
Develop integrated local credentialing offices around state	No Estimate	-	-	No Estimate

Notes:

1. The cost estimates include those efforts are those necessary to prepare the Mainstreaming Project Plan in 1998. The additional costs will be incurred to prepare more detailed requirements once the project implementations begin.
2. These initial ITS/CVO systems will, at a minimum, satisfy the Mainstreaming Level 1 requirements. In all cases, Georgia already has, or will with these initial capabilities, exceed the Level 1 capabilities.

5.7 SCHEDULE ESTIMATES FOR PROJECT SETS

Schedules for the project sets are based on relative priorities and dependencies, and estimated durations are based on the complexity of the ITS/CVO system or component to be developed. The proposed schedules are presented in Figures 5-1 through 5-2. These schedules are meant only to provide a rough sense of timing. The development of the initial systems/capability within each project set can begin as soon as funding sources are identified, and in some cases these projects are already underway.

5.8 POSSIBLE AGENCY ROLES IN PROJECT SETS

The potential roles and responsibilities of each agency with respect to the project sets and phases are indicated in Table 5-3 below. These potential roles are based primarily on the level of benefit to the agency from the proposed projects and current involvement in related efforts. None of these indications should be considered firm commitments on the part of the agency(ies) to complete the projects as currently defined. Commitments can be made when the specific projects to be implemented are firmly defined and both state and federal funding levels and sources have been identified.

Figure 5-1 Approximate Schedules and Durations for Project Sets

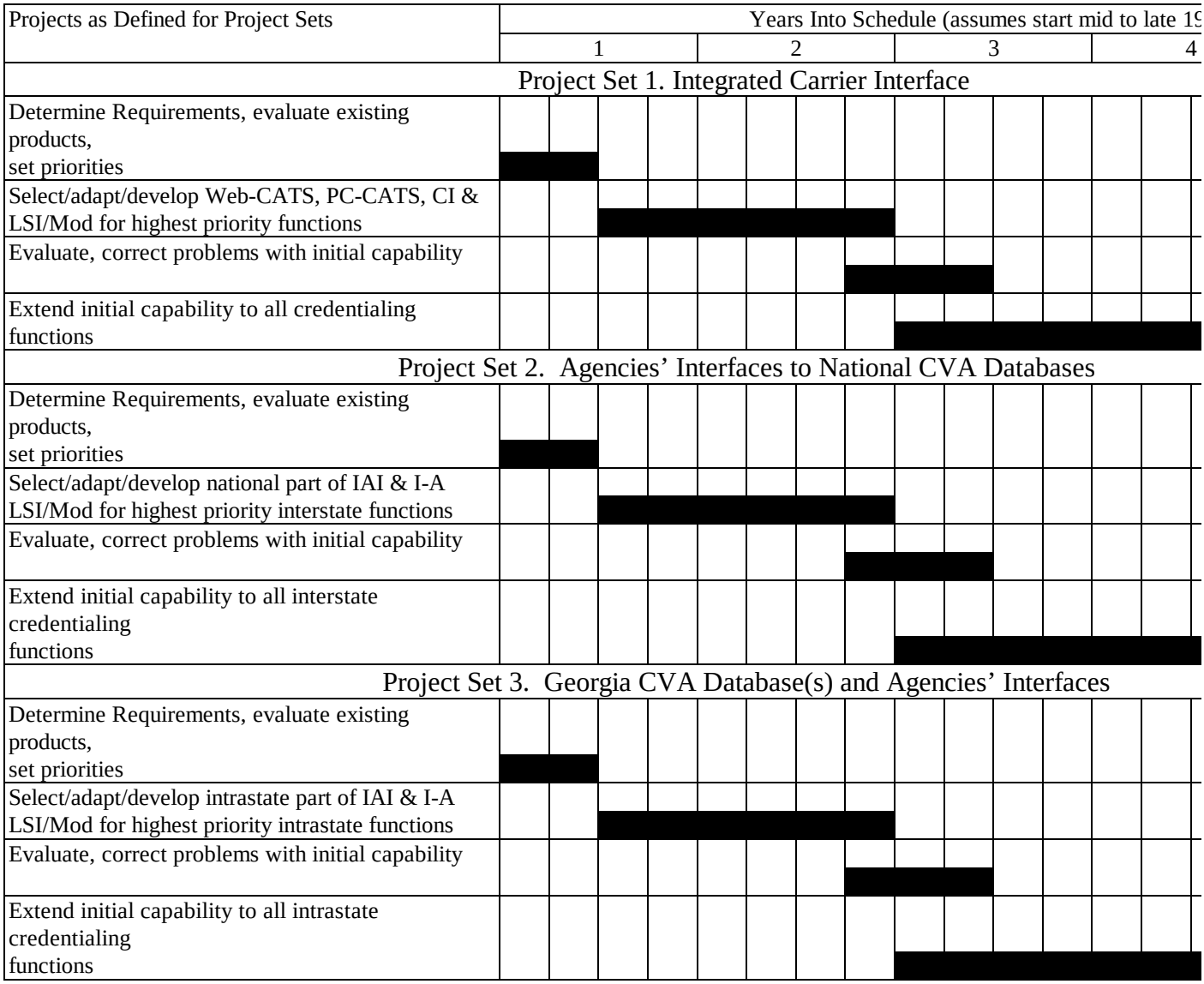

Figure 5-1 Approximate Schedules and Durations for Project Sets

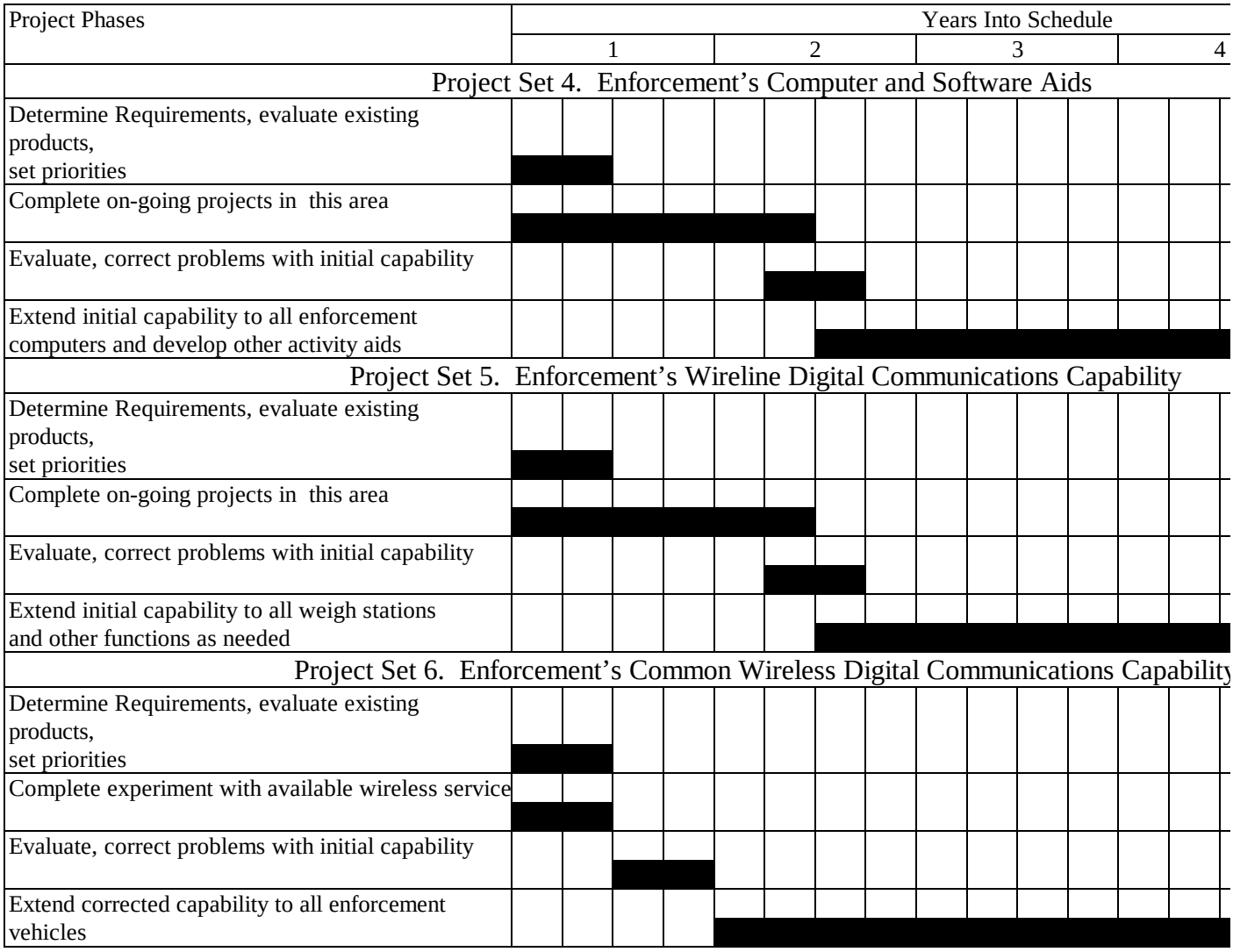

Figure 5-1 Approximate Schedules and Durations for Project Sets

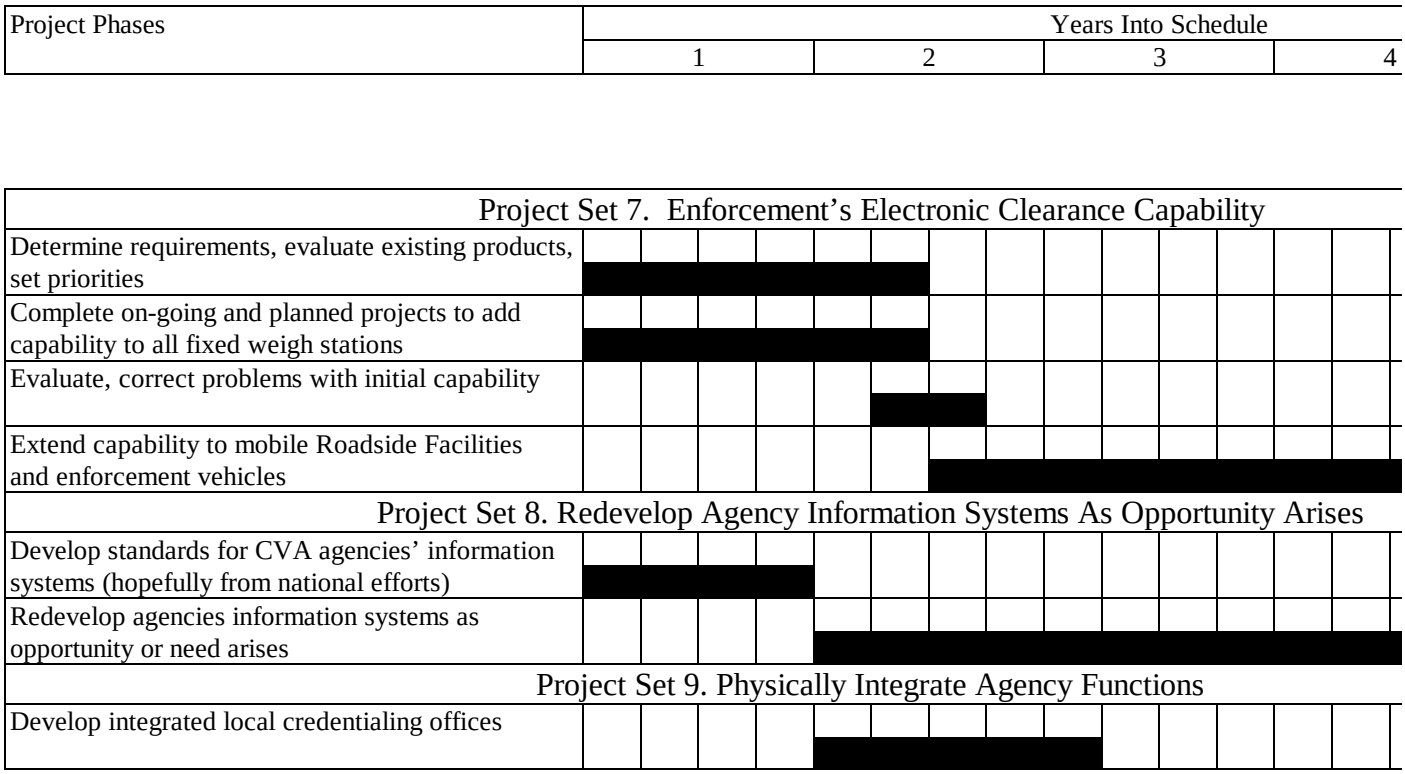

Table 5-3 Potential Roles of Agencies in Project Sets

Project Sets	DOR	PSC	OPE	DPS
Project Set 1. Integrated Carrier Credentialing Interface				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Select/adapt/develop Web-CATS, PC-CATS, CI and LSI/Mod for highest priority function(s)	X	X	X	
Evaluate, Correct Problems with Initial capability	X	X	X	
Extend initial capability to all credentialing functions	X	X	X	
Project Set 2. Integrated Capability for National Information Sharing				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Select/adapt/develop national part of IAI and Inter-Agency LSI/Mods for highest priority interstate legacy systems	X	X	X	X
Evaluate, Correct Problems with Initial capability	X	X	X	X
Extend initial capability to all interstate credentialing functions	X	X	X	X
Project Set 3. Integrated Capability for Intrastate Information Sharing				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Select/adapt/develop intrastate portion of IAI & Inter-Agency LSI/Mod for priority intrastate legacy systems	X	X	X	X
Evaluate, Correct Problems with Initial capability	X	X	X	X
Extend initial capability to all intrastate credentialing functions	X	X	X	X
Project Set 4. Enforcement's Common Computer & Software Aids				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Complete on-going projects in this area		X	X	X
Evaluate, Correct Problems with Initial capability		X	X	X
Extend initial capability to all weigh stations and other activity aids		X	X	X
Project Set 5. Enforcement's Wireline Digital Communications				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Complete on-going projects in this area			X	
Evaluate, Correct Problems with Initial capability			X	
Extend initial capability to all OPE weigh stations and possibly DPS Posts		X	X	X

Table 5-3 Potential Roles of Agencies in Project Sets

Project Sets	DOR	PSC	OPE	DPS
Project Set 6. Enforcement's Common Wireless Digital Communications Capabilities				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Complete current experiment with an available wireless capability				X
Evaluate, Correct Problems with Initial capability				X
Extend corrected capability statewide and to all enforcement vehicles		X	X	X
Project Set 7. Enforcement's Electronic Clearance Capability				
Determine Requirements, evaluate existing products, set priorities, etc.	X	X	X	X
Complete on-going projects in this area			X	
Evaluate, Correct Problems with Initial capability			X	
Extend capability statewide to mobile roadside facilities and enforcement vehicles	X	X	X	X
Project Set 8. Redevelop Agency Information Systems				
Develop Standards for CVA agency information systems (from nat'l efforts if at all possible)	X	X	X	X
Develop Agency Information systems as opportunity arises			X	
Project Set 9. Physical Integration of Agency Functions				
Develop integrated local credentialing offices around state	X	X	X	X

APPENDIX A. GEORGIA'S ITS CONTEXT FOR THIS BUSINESS PLAN

Georgia's ITS Deployment Plan includes a major stakeholder function called Commercial Vehicle Administration, which includes all agency functions related to the oversight of property and passenger carriers within the state. In addition, the deployment plan also includes separate major stakeholder functions for the property and passenger carriers themselves. It is difficult to ascertain the correspondence between various elements of the national CVISN program and Georgia's major stakeholder functions. To remain consistent with State planning to date, CVISN and Georgia's Commercial Vehicle Administration function will be treated as equivalent for most purposes. Those CVISN elements that would be hosted or implemented by the carriers in their offices or vehicles are considered a part of the Property and Passenger Fleet Operator functions in Georgia's ITS architecture.

The present effort will develop a more detailed plan for the Commercial Vehicle Administration function. This appendix will review the following relevant portions of Georgia's ITS Deployment Plan to provide the context and beginning point for this plan:

- Overview of Georgia's ITS User Service Groups,
- Definition of the Commercial Vehicle Administration function, and
- Logical and physical architectures of the Commercial Vehicle Administration ITS aids.

A.1 GEORGIA'S ITS USER SERVICE GROUPS

The results of a comprehensive analysis of Georgia's stakeholders and their functional needs produced the Stakeholder Groups, Major stakeholder Functions, and User Service groups summarized in Table A-1 below.

Table A-1 Georgia's ITS User Services by Stakeholder Groups

Stakeholder Group	Stakeholder Major Functions	User Service Groups
Transportation Agencies	1. Traffic Operations	1a. Traffic Management 1b. Demand Management 1c. Incident Management
	2. Other Transportation Agency Functions	2a. Planning 2b. Development 2c. Maintenance 2d. Other Operations
	3. Intermodal Terminal Operations	3a. Scheduling 3b. Intra-Terminal Traffic Mgmt 3c. Load/Passenger Transfer Mgmt
	4. Rail-Highway Intersections	4a. Railroad Crossing Safety 4b. Railroad Crossing Traffic Mgmt
	5. Commercial Vehicle Administration	5a. Administrative Processes 5b. Electronic Clearances 5c. CV Safety

Table A-1 Georgia's ITS User Services by Stakeholder Groups

Stakeholder Group	Stakeholder Major Functions	User Service Groups
Transportation Agencies (Continued)	6. Toll Facilities Administration	6a. Toll Collection 6b. Violations Mgmt
	7. Highway Safety	7. Highway Safety Mgmt
Fleet Operators	8. Basic Fleets	8. Basic Fleet Management
	9. Property Carriers	9a CVO Administration (Carrier) 9b. Electronic Clearance (Carrier) 9c. CV Safety (Carrier) 9d. Intermodal Operations (Carrier)
	10. Passenger Carriers	10a. Operations 10b. User Information 10c. Passage Facilitation 10d. Intermodal Operations (Carrier)
Travelers	11. Traveler Information	11a. Travel Information 11b. Navigation 11c. Traveler Services (Information)
	12. Traveler Services	12. Travel Services Provision (or by type; i.e., Parking, etc.)
	13. Emergency Assistance	13. Mayday
Other Organizations Involved with the Transportation System	14. Emergency Services	14a. Notification 14b. Navigation 14c. Passage Facilitation 14d. Emergency Service Aids
	15. Emergency Management	15a. Notification 15b. Dispatch 15c. Field Operations 15d. Resource Coordination
	16. Environmental Protection	16a. Air Quality Mgmt 16b. HAZMAT Transport Mgmt
Advanced Vehicle Control and Safety Functions (the future)	17. Vehicle/Driver Safety Readiness	17a. Driver Readiness 17b. Vehicle Readiness 17c. Vehicle Operations Information
	18. Collision Avoidance	18a. Driver Senses Enhancement 18b. Collision Warning 18c. Assisted Avoidance
	19. Automated Highway System	19a. Longitudinal Control 19b. Lateral Control 19c. Traffic Stream Entry Aids 19d. Traffic Stream Exit Aids

A.2 THE COMMERCIAL VEHICLE ADMINISTRATION FUNCTION

Following is the verbatim description of this function from Georgia's ITS Deployment Plan.

Commercial Vehicles (both property and passenger carriers) form a special class of transportation system users, and are subject to special regulation. Property carrier trucks, while vital to our economy, cause the most serious wear and tear on the transportation system facilities and can pose a significant hazard to smaller vehicles if not operated safely and maintained properly. Passenger carriers also require special attention to assure safe operations. This analysis identifies ITS aids to make governmental oversight of these vehicles more efficient and effective.

Commercial Vehicle Administration has both primary and secondary subfunctions, many of which can be significantly aided by ITS technologies.

Primary Subfunctions of Commercial Vehicle Administration are to administer and coordinate the following subfunctions within the State:

- Licensing drivers for property and passenger carrier vehicles,
- Registering vehicles,
- Collection of fuel, highway usage, and property (ad valorem) taxes,
- Providing commercial operating authority,
- Assuring safe commercial vehicle operations,
- Management of the size and weights of loads, including the issuance of permits for overweight and oversized loads, and
- Enforcement, including auditing, of the laws governing each of the above subfunctions.

These subfunctions should all be accomplished in a coordinated fashion with other states and neighboring countries to maximize the efficiency of the processes and the interoperability of systems.

Secondary Subfunctions of this group include:

- Assisting any of the other major functions as would be mutually beneficial, and
- Sharing information on commercial vehicle operations with other ITS functions as would be beneficial, especially Highway Safety and other Transportation System Agency Functions.

ITS User Services for Commercial Vehicle Administration could be identified for each of the primary subfunctions, but they could be combined into one or more groups. This is a very active area in the national ITS program, and there are several major activities within Georgia. The overall national plan for Commercial Vehicle Administration is referred to the Commercial Vehicle Information Systems and Networks (CVISN). The CVISN program has identified the following components:

- Safety Information
- Electronic Clearances
- Automated Inspections
- I-M Incident Response
- Administrative Processes
- International Clearances
- On-Board Safety
- Fleet & Freight Administration

These components have similar functional objectives among themselves, and overlap the stakeholder categories used herein. *For present purposes, the following will be considered User Service groups under this stakeholder category*:

- Administrative Processes, which is a grouping of ITS User Services and technologies that aid all agency processes in licensing drivers, registering vehicles, providing operating authority, collecting taxes and user fees, and issuing overweight/oversize permits.
- Electronic Clearance (including International Clearances), which is a grouping of ITS User Services and technologies that aid all enforcement agencies in determining the legal status of commercial drivers, vehicles and loads.
- CV Safety, which is a grouping of ITS User Services and technologies that aid in assuring the safe operation of commercial vehicles; including Safety Information (on vehicles, drivers, and companies), On-Board Safety, Automated Inspection, and I-M Incident Response).

The Fleet and Freight Administration component of CVISN is probably equivalent to a combination of the Basic Fleet Management and Property Carrier Operations functions in Georgia's architecture.

The secondary subfunctions do not translate into ITS User Services; rather they are achieved by integrating these with other ITS User Service Groups as beneficial (See external interactions in the logical architecture description that follows).

A.3 ARCHITECTURE FOR ITS AIDS TO THE COMMERCIAL VEHICLE ADMINISTRATION

Following is the verbatim definitions of the ITS architectures for this function.

This Stakeholder Major Function includes all agency functions involved in the registration, oversight, taxation, etc. of carriers of property and passengers, with most attention on the property carriers (trucks).

A.3.1 Logical Architecture

Interactions of Commercial Vehicle Administration with other Major Functions, subordinate User Service Groups, and information flows between these User Service Groups are addressed.

External Interactions (desired) of Commercial Vehicle Administration with other Major Functions include, but are not limited to:

- Other Transportation Agency Functions, which provide services to and use information from Commercial Vehicle Administration.
- Intermodal Terminal Operations, which provide information to and use information from Commercial Vehicle Administration.
- Highway Safety, which analyzes accidents and provides integrated solutions involving all Commercial Vehicle Administration agencies.
- Carrier Operations (both Property and Passenger Carriers), which must interact with Commercial Vehicle Administration to perform the primary CV Administration User Service Groups.
- Traveler Information, which may support information exchanges between vehicles and the Commercial Vehicle Administration Centers.

- Traveler Services, which includes those businesses that support Carrier Operators in obtaining operating authority and permits for commercial vehicles.
- Environmental Protection, which must be aware of and participate in routing of HAZMAT loads.

User Service Groups for Commercial Vehicle Administration were identified in Section 2 as:
- Administrative Processes (registration, operating authority, taxation, permitting, etc.)
- Electronic Clearances (enroute enforcement), and
- CV Safety.

Internal Interactions between these User Service Groups include, but are not limited to:
- From each function to all other User Service Groups: information regarding the state of credentials and enforcement problems for carriers (companies), trucks or drivers with respect to each subfunction.

A.3.2 Physical Architecture

The physical subsystems necessary to implement the three fundamental activities (acquire inputs, processing, and generate outputs) for each User Service Group are indicated in Table A-2. These subsystems and those required for interfacing are diagrammed in Figure A.1.

Centers required to implement these User Service Groups are those offices within each of the agencies that exercise legal authority, including the:
- Public Service Commission,
- Department of Revenue,
- Department of Public Safety, and
- GDOT Office of Permits and Enforcement (including fixed weigh stations).
- Emergency Services (Police) Centers in each jurisdiction that exercise police authority.

Table A-2 Physical Subsystems for Commercial Vehicle Administration

User Service Groups	Functional Activities	Physical Subsystems Involved
Licensing of drivers	Acquire Inputs	WLC from: -Remote Access Home/Office Computers ((Drivers)
	Process inputs to determine desired outputs or actions	Department of Public Safety (Center)
	Output of information or control actions	WLC to: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers

Table A-2 Physical Subsystems for Commercial Vehicle Administration

User Service Groups	Functional Activities	Physical Subsystems Involved
Registration of Vehicles	Acquire Inputs	WLC from: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers
	Process inputs to determine desired outputs or actions	Department of Revenue, Counties
	Output of information or control actions	WLC to: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers
Collection of fuel and highway usage taxes	Acquire Inputs	WLC from: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers Roadside SRCS from: -Transponders on trucks
	Process inputs to determine desired outputs or actions	Department of Revenue
	Output of information or control actions	WLC to: -Financial institutions holding funds for truckers/fleets Roadside SRCS to: -Transponders on trucks (Electronic Payment)
Providing commercial operating authority	Acquire Inputs	WLC from: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers Roadside SRCS from: -Transponders on trucks
	Process inputs to determine desired outputs or actions	FHWA, Department of Revenue
	Output of information or control actions	WLC from: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers Roadside SRCS from: -Transponders on trucks

Table A-2 Physical Subsystems for Commercial Vehicle Administration

User Service Groups	Functional Activities	Physical Subsystems Involved
Assuring safe commercial vehicle operations	Acquire inputs	WLC from: -Regulation agencies and authorities -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers
	Process inputs to determine desired outputs or actions	Public Service Commission Center
	Output of information or control actions	WLC to: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers
Management of Loads, including issuance of permits for overweight and oversized loads	Acquire inputs for issuing	WLC from: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers Roadside SRCS from: -Transponders on trucks
	Process inputs to determine desired outputs or actions	GDOT Office of Permits and Enforcement
	Output of information or control actions	WLC to: -Financial institutions holding funds for truckers/fleets Roadside SRCS to: -Transponders on trucks
Enforcement of laws regulating each of the User Service Groups	Acquire Inputs	WLC from: -Remote Access Office Computers (Independents) -Commercial Fleet Operations Centers Roadside SRCS from: -Transponders on trucks
	Process inputs to determine desired outputs or actions	All Enforcement Agency Centers, Police Roadside Centers (Weigh Stations, etc.) Mobile Centers/Vehicles
	Output of information or control actions	WACT between Centers & with Enforcement Vehicles Roadside SRCS & Enforcement VVCS to: -Transponders on trucks

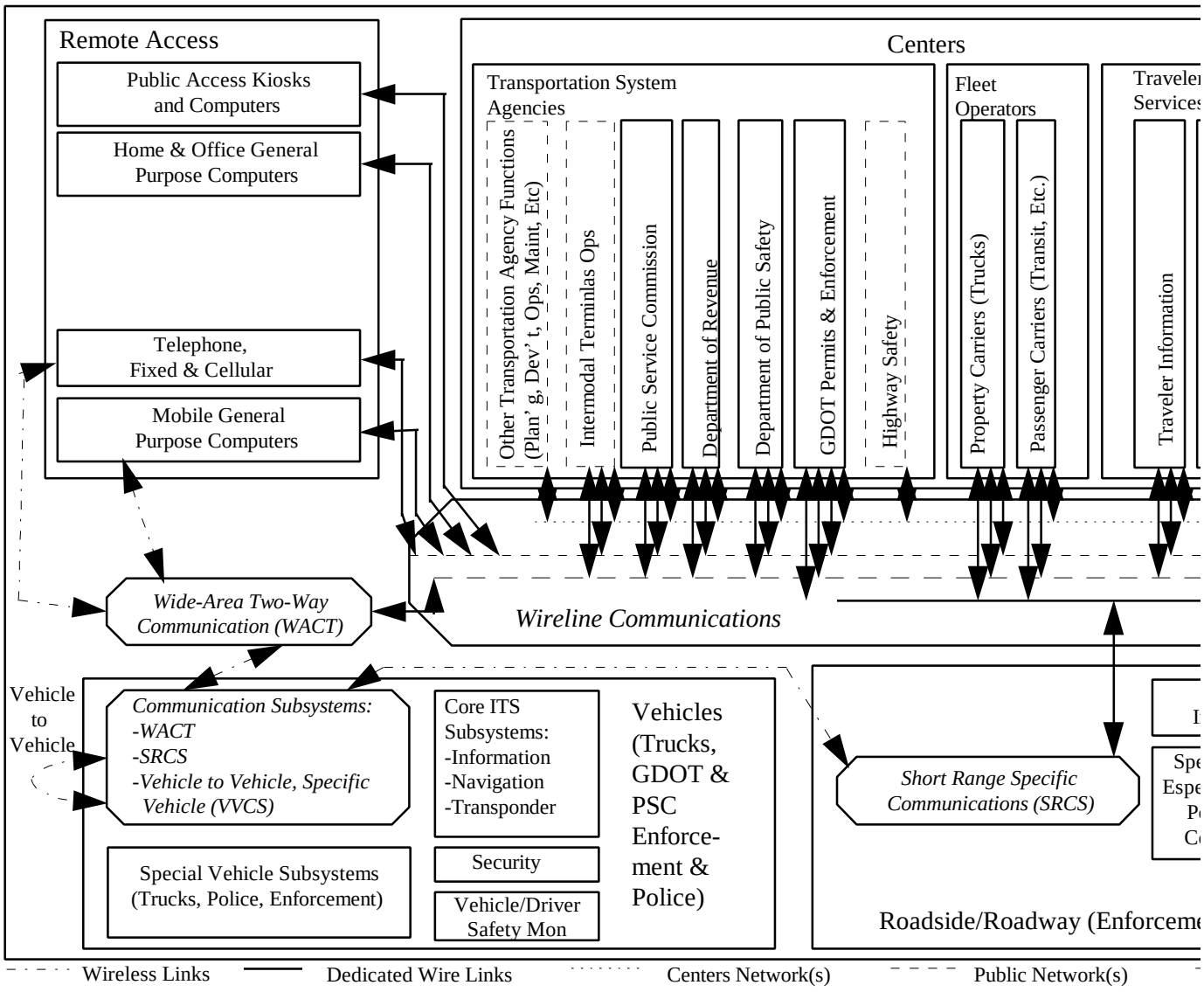

Figure A.1 High Level Physical Architecture for the Commercial Vehicle Administration I

Remote Access Subsystems required to implement these User Service Groups are:

- Public Access Kiosks and Computers, such as at truck stops.
- Office computers in independent trucker or small fleet offices (that do not have a Fleet Operations Center.

Portable computers or other mobile digital devices (possibly working in conjunction with vehicle subsystems) will be beneficial to Enforcement personnel to implement some of their responsibilities most efficiently; e.g., checking status of licensing, citations, fine payment, etc. for particular trucks.

Centers to Remote Access Communications - Public (wireline) networks such as the telephone system (modem), the Internet, or others in the future, are required between the Centers and Remote Access Subsystems to implement ITS aids to Commercial Vehicle Administration User Service Groups.

Roadside Subsystems required to implement these User Service Groups are:

- SRCS for electronic licensing/permitting, tax payments, safety status checks, CV subsystem readouts (load types, log, route compliance, etc.)
- Special sensors for CVs; e.g., weight, oversize detection, etc.
- Portable and Mobile Enforcement Centers (Weigh Stations).

Centers to Roadside Communications - The CV Administration Center(s) and Enforcement Fleet Operations Centers must connect to the Roadside Subsystems discussed above using WLC, or possibly WACT to the Portable and Mobile Weigh Stations.

Short Range Communications, Roadside-to-Vehicle are required to implement these User Service Groups as discussed in the previous discussion of Roadside Subsystems.

Wide Area Communications, Centers-to-Vehicle - WACT between the Centers and Enforcement Vehicle Subsystems will be required or beneficial to these User Service Groups; e.g., checking status of licensing, citations, fines, etc. for particular trucks.

Vehicle Subsystems required to implement these User Service Groups are:

- Communication Subsystems to support all of the following subsystems,
- Core ITS Subsystems to support information exchanges between vehicles and various centers and roadside devices,
- Commercial truck subsystems, including such capabilities as: electronic records of registration, licenses, load information & special permits,
- Special CVO Vehicle and Driver Readiness subsystems,
- CVO special security subsystems, and
- Enforcement vehicle subsystems, including such capabilities as: mobile readout of CVO subsystems on trucks; vehicle physical inspection aids; citation preparation & filing aids.

Vehicle- to-Vehicle Communications will be needed for Enforcement personnel to interact with truck transponders in Core ITS Subsystems) to check licenses/permits, load information, route compliance, safety systems status, etc.