

9 INTEROPERABILITY ISSUES/STATUS

USDOT has a goal of achieving national interoperability between electronic screening systems. Realizing this goal will promote seamless and safer movements, equitable treatment, increased productivity and uniform enforcement for the motor carrier community. Congress strongly supports the theme of interoperability in TEA-21. Section 5206(a)(2), “Interoperability and Efficiency”, states that “to the maximum extent practicable, the national architecture shall promote interoperability among, and efficiency of, ITS technologies implemented throughout the U.S.”

Statements of principle are being used to document fundamental concepts and guidelines supported by the CVO community. The ITS America (ITSA) CVO Technical Committee has adopted a set of interoperability guiding principles related to ITS for CVO, which includes electronic screening. The committee, with representatives from most CVO stakeholder groups, developed the principles in recognition of the importance of promoting interoperability in the implementation of ITS for CVO. More information can be found at the ITSA website: <http://www.itsa.org/>.

The ITSA CVO Technical Committee has also adopted the Fair Information Principles for ITS CVO. These principles were developed in recognition of the importance of protecting individual privacy in implementing ITS for CVO.

JHU/APL is conducting a technical E-screening interoperability demonstration in four key states: VA (CVISN Prototype), KY (NorPass/Advantage CVO), WA (NorPass/MAPS) and CA (HELP PrePass™). The objective of the test is to demonstrate the feasibility of national E-screening interoperability with a single transponder, using SAFER snapshots as the common source of data. The demonstration is scheduled for completion in late 1999.

9.1 ITS/CVO Interoperability Guiding Principles

The ITS/CVO Interoperability Guiding Principles (Reference 10) represent a composite of multiple electronic screening interoperability resolutions passed by various organizations including: AASHTO, WASHTO, SASHTO, HELP PrePass™, I-95 Corridor Coalition, Advantage CVO and MAPS. The principles expressed in these resolutions were similar and used as the basis for the ITS/CVO document. The ITSA CVO Technical Committee included members from all of these organizations, and many who were involved in drafting the original resolutions.

The ITS/CVO Interoperability Guiding Principles are organized into the following five categories:

- General
- Hardware – issues related to the interoperability of DSRC devices and other roadside equipment used for electronic screening, toll collection and other activities.

- Systems/Software – issues related to the interoperability of ITS/CVO software, information systems, and networks for the electronic interchange of data among motor carriers, states and third-party service providers.
- Operations – issues related to the consistency of ITS/CVO operating procedures and criteria for weight enforcement, safety screening, and other activities.
- Program – issues related to the compatibility of ITS/CVO programs with respect to enrollment eligibility, pricing and data access.

The ITS/CVO Interoperability Guiding Principles are listed below.

9.1.1 General

IGP #1: The CVO community will work to implement interoperable ITS/CVO systems in all United States jurisdictions.

IGP #2: The CVO community will work with the CVO communities in Canada and Mexico to implement interoperable ITS/CVO systems throughout North America.

IGP #3: The CVO community will work to ensure that ITS/CVO systems, where appropriate, are interoperable with other ITS systems (e.g., electronic toll systems).

IGP #4: Interoperable ITS/CVO systems will be achieved through the development, adoption, and adherence to common standards for hardware, systems/software, operations, and program administration.

IGP #5: Each jurisdiction will support the national ITS/CVO information system architecture and data exchange standards developed under the Commercial Vehicle Information Systems and Networks (CVISN) program.

IGP #6: *Transponders shall have a unique identifier.* DSRC equipment vendors have voluntarily kept transponder identifiers unique. At this time, there is no organization responsible for overseeing the process of assigning transponder IDs to manufacturers.

IGP #7: Information systems supporting electronic screening, credentials administration, and safety assurance will use:

- 7a. US DOT numbers for the identification of both interstate and intrastate motor carriers.
- 7b. Commercial Drivers License (CDL) numbers for the identification of commercial drivers.
- 7c. Vehicle Identification Numbers (VIN) and license plate numbers for the identification of power units.

9.1.2 Hardware

IGP #8: Commercial vehicle operators will be able to use one transponder for power unit-to-roadside communications in support of multiple applications including electronic screening, safety assurance, fleet and asset management, tolls, parking, and other transaction processes. This principle represents the long-term goal of the USDOT and the commercial vehicle community. The DSRC transponders currently used in electronic screening use different communications protocols than used in ETC systems.

IGP #9: Public and public-private DSRC applications will support open standards that are consistent with the national ITS architecture.

9.1.3 Systems/Software

IGP #10: Public and public-private organizations will support open data exchange standards for the state-state, state-federal, state-provincial, and carrier-agency exchange of safety and credentials information as described in the national ITS architecture.

9.1.4 Operations

IGP #11: Jurisdictions will support common standards for placement of DSRC transponders on trucks and buses to ensure the safe and cost-effective use of transponders. The Society of Automotive Engineers (SAE) is attempting to develop standards that will include guidelines for transponder mounting.

IGP #12: Jurisdictions will support a common set of recommended practices concerning the selection, layout, and signage of roadside screening sites (i.e., weigh stations, ports-of-entry, international border crossings, and temporary inspection sites) to ensure safe operations. A comprehensive document covering these subjects does not exist.

IGP #13: Jurisdictions will support a common performance standard for roadside electronic enforcement screening and passage of transponder-equipped motor carriers to ensure equity in enforcement. CVSA has made the following recommendation for minimum safety standards based on SafeStat categories: Motor carriers identified in SafeStat categories -

“A through F” are ineligible to benefit from electronic clearance programs.

“G through H” are eligible to benefit from electronic clearance programs.

“I” may be eligible to benefit from electronic clearance programs at the discretion of individual jurisdictions while CVSA continues its review.

IGP #14: Roadside electronic enforcement screening criteria will include the following: motor carriers must be enrolled in the jurisdiction's program; must meet the jurisdiction's enrollment criteria; and must meet all legal requirements established by the jurisdiction.

IGP #15: Jurisdictions will support quarterly reviews of carrier qualifications to ensure that the standards evolve to meet the changing needs of government and motor carriers.

IGP #16: A jurisdiction will not retain the identification codes or other data from the DSRC transponders of passing motor carriers who are not enrolled in the jurisdiction's program.

IGP #17: *Jurisdictions will support a common performance standard for selection of vehicles and drivers for roadside safety inspection.*

IGP #18: *Jurisdictions will support a common performance standard for recording and reporting roadside safety inspection results.*

IGP #19: *Jurisdictions will support a common performance standard for reconciling disputed roadside safety inspection results.*

9.1.5 Program

IGP #20: Motor carrier participation in ITS/CVO roadside electronic screening programs will be voluntary; motor carriers will not be required to purchase or operate DSRC transponders.

IGP #21: Motor carriers will have the option of enrolling in any ITS/CVO roadside electronic screening program.

IGP #22: Jurisdictions will support uniform criteria for enrollment of motor carriers in ITS/CVO roadside screening programs. CVSA has made a recommendation for minimum enrollment standards based on SafeStat categories.

IGP #23: Enrollment criteria will include consideration of safety performance and credentials status (e.g., registration, fuel and highway use taxes, and insurance).

IGP #24: No jurisdiction will be required to enroll motor carriers that do not meet the criteria for enrollment.

IGP #25: Motor carriers may obtain a DSRC transponder from the enrolling jurisdiction or a compatible DSRC transponder from an independent equipment vendor of the motor carrier's choice.

IGP #26: Each jurisdiction will determine the price and payment procedures, if any, for motor carriers to enroll and participate in its ITS/CVO electronic screening program.

IGP #27: Jurisdictions shall work to establish business interoperability agreements among roadside electronic screening programs. The two largest programs, HELP PrePass and NorPass, are conducting interoperability discussions.

IGP #28: A jurisdiction will make a motor carrier's DSRC transponder unique identifier available to another jurisdiction upon written request and authorization by the motor carrier.

IGP #29: Jurisdictions will work toward development of a single point of contact for motor carriers enrolling in more than one ITS/CVO roadside screening program.

IGP #30: Each jurisdiction will fully disclose and publish its practices and policies governing, at a minimum:

- 30a. *Enrollment criteria;*
- 30b. *Transponder unique identifier standards;*
- 30c. *Price and payment procedures for transponders and services;*
- 30d. *Screening standards;*
- 30e. *Use of screening event data; and*
- 30f. *Business interoperability agreements with other programs.*

9.2 Fair Information Principles for ITS/CVO

The Fair Information Principles for ITS/CVO (Reference 11) address the key issues associated with the privacy of commercial vehicle information collected through the use of ITS technologies. Concerns about data privacy and control are perceived by some as a major impediment to motor carrier participation in ITS/CVO projects. The Fair Information Principles are:

FIP #1: Privacy - *The reasonable expectation of privacy regarding access to and use of personal information should be assured. The parties must be reasonable in collecting data and protecting the confidentiality of that data.*

FIP #2: Integrity - *Information should be protected from improper alteration or improper destruction.*

FIP #3: Quality - *Information shall be accurate, up-to-date, and relevant for the purposes for which it is provided and used.*

FIP #4: Minimization - *Only the minimum amount of relevant information necessary for ITS applications shall be collected; data shall be retained for the minimum possible amount of time.*

FIP #5: Accountability - *Access to data shall be controlled and tracked; civil and criminal sanctions should be imposed for improper access, manipulation, or disclosure, as well as for knowledge of such actions by others.*

FIP #6: Visibility - *There shall be disclosure to the information providers of what data are being collected, how they are collected, who has access to the data, and how the data will be used.*

FIP #7: Anonymity - *Data shall not be collected with individual driver identifying information, to the extent possible.*

FIP #8: Design - *Security should be designed into systems from the beginning, at a system architecture level.*

FIP #9: Technology - *Data encryption and other security technologies shall be used to make data worthless to unauthorized users.*

FIP #10: Use - Data collected through ITS applications should be used only for the purposes that were publicly disclosed.

FIP #11: Secondary Use - Data collected by the private sector for its own purposes through a voluntary investment in technology should not be used for enforcement purposes without the carrier's consent.