

APPENDIX B.

**OPERATIONAL SCENARIOS
AND
FUNCTIONAL THREAD
DIAGRAMS**

This Page Intentionally Blank

Operational Scenarios and Functional Thread Diagrams

- An “operational scenario” is a description of how a state intends that their customers and the state, or the state and core infrastructure systems should interact to accomplish key CVISN functions. An example was given in chapter 4. More examples are provided here.
- The operational scenario is shown as a list of sequential steps. To differentiate between different time schedules, numbers are used to show the interaction between the applicant and the state, and the state’s update of snapshots. Those interactions occur as soon as possible after the initial application is received by the state. Letters are used to show the state’s connections to the clearinghouses, since that occurs at a regular period instead of being triggered immediately by the carrier’s actions.
- Each operational scenario is illustrated by overlaying information onto the state system design template. The lines represent data flow between products, with arrows indicating the direction of flow. Each line is labeled with a number or letter. The complete set of lines constitutes a thread of activities that accomplish a function. Hence, the diagram is called a “functional thread diagram.”
- This appendix provides examples of operational scenarios and functional thread diagrams. They are included for reference, and as starting points for states that plan to implement similar processes.

CVISN Level 1 Electronic Screening Key Operational Scenarios

- **Electronic Screening Enrollment**
 - **Example 1:** Operational Scenario: Carrier submits Electronic Screening Applications to a Carrier Automated Transaction (CAT)
 - **Example 2:** Operational Scenario: Electronic Screening Administrator Handles Enrollment Function

- **Screen Vehicles electronically at a weigh/inspection site, using snapshot data**
 - **Example 3:** Operational Scenario: States using the HELP PrePass system
 - **Example 4:** Operational Scenario: States using the NorPass system

Example 1 Operational Scenario: Electronic Screening Enrollment

Carrier submits Electronic Screening Applications to a CAT

Note: Prior to enrolling, the carrier will examine the electronic screening policy disclosures of the states in which it operates and determines where it would like to participate in electronic screening.

1. The carrier submits Electronic Screening Applications, via a Carrier Automated Transaction (CAT) system which submits it to the Enrollment Agent State's Credentialing Interface (CI), via an EDI X12 TS 286. Using the CAT, the carrier may perform any of the following functions. The input required for each function is also listed.
 - Carrier Enroll request: Carrier ID, participating request, other state required data.
 - Vehicle enroll request: Carrier ID, Vehicle ID (VIN), Transponder ID, participation requests, other state-required data.
 - Add/update carrier supplemental: Carrier ID, Vehicle ID (VIN), Transponder ID, participation requests, other state-required data.
 - Transponder ID, participation requests, other state-required data.
 - Status query

Note: The state in which the carrier enrolls is referred to as the Enrollment Agent State, and the other states that the carrier enrolls to participate in are referred to as Additional E-Screening States.

Example 1 Operational Scenario: Electronic Screening Enrollment

Carrier submits Electronic Screening Applications to a CAT

2. The Enrollment Agent State CI will check for existing carrier and vehicle snapshots (This process assumes that these snapshots exist, based on prior vehicle registration). The CI queries the Enrollment Agent State CVIEW for a carrier and vehicle snapshot, via an EDI X12 TS 285.

3. CVIEW passes the carrier and vehicle snapshot to the CI, via EDI X12 TS 285.

Note: If snapshots do not exist, the enrollment request will be rejected and the CI sends an EDI X12 TS 286 to the CAT. The carrier is required to perform vehicle registration prior to E-screening enrollment.

4. The Enrollment Agent State CI stores the enrollment request data and is the authoritative source for this information. The CI processes the request and sends carrier and vehicle snapshot segment updates to CVIEW, via an EDI X12 TS 285. These segment updates modify the E-screening participation fields in the affected snapshots.

5. If the request includes carrier participation in the Enrollment Agent State's E-screening program, CVIEW forwards the carrier snapshot to the E-Screening Enrollment system, via an EDI X12 TS 285.

Example 1 Operational Scenario: Electronic Screening Enrollment

Carrier submits Electronic Screening Applications to a CAT

6. The state either approves or disapproves carrier's participation in this state's E-screening program. The E-Screening Enrollment system is the authoritative source for the state acceptance decision. The Enrollment Agent State's decision is transmitted to CVIEW as a carrier snapshot segment update, via an EDI X12 TS 285.

Note: The state may choose to contact the carrier for reasons such as

- Set up a billing account
- Sign agreements or documents
- Obtain additional information

7. The Enrollment Agent State CVIEW sends carrier and vehicle snapshot segment updates to the Roadside Operations system, via EDI X12 TS 285. Snapshots are used at the roadside when making the bypass/pull-in decision.
8. The Enrollment Agent State CVIEW sends carrier and vehicle snapshot segment updates to SAFER, via EDI X12 TS 285. These updates include the participation request data and Enrollment Agent State acceptance decision.
9. SAFER sends the carrier and vehicle snapshot segment updates to Additional E-Screening state CVIEWs, via EDI X12 TS 285. Transponder ID information is passed only to states where the Carrier has requested participation.

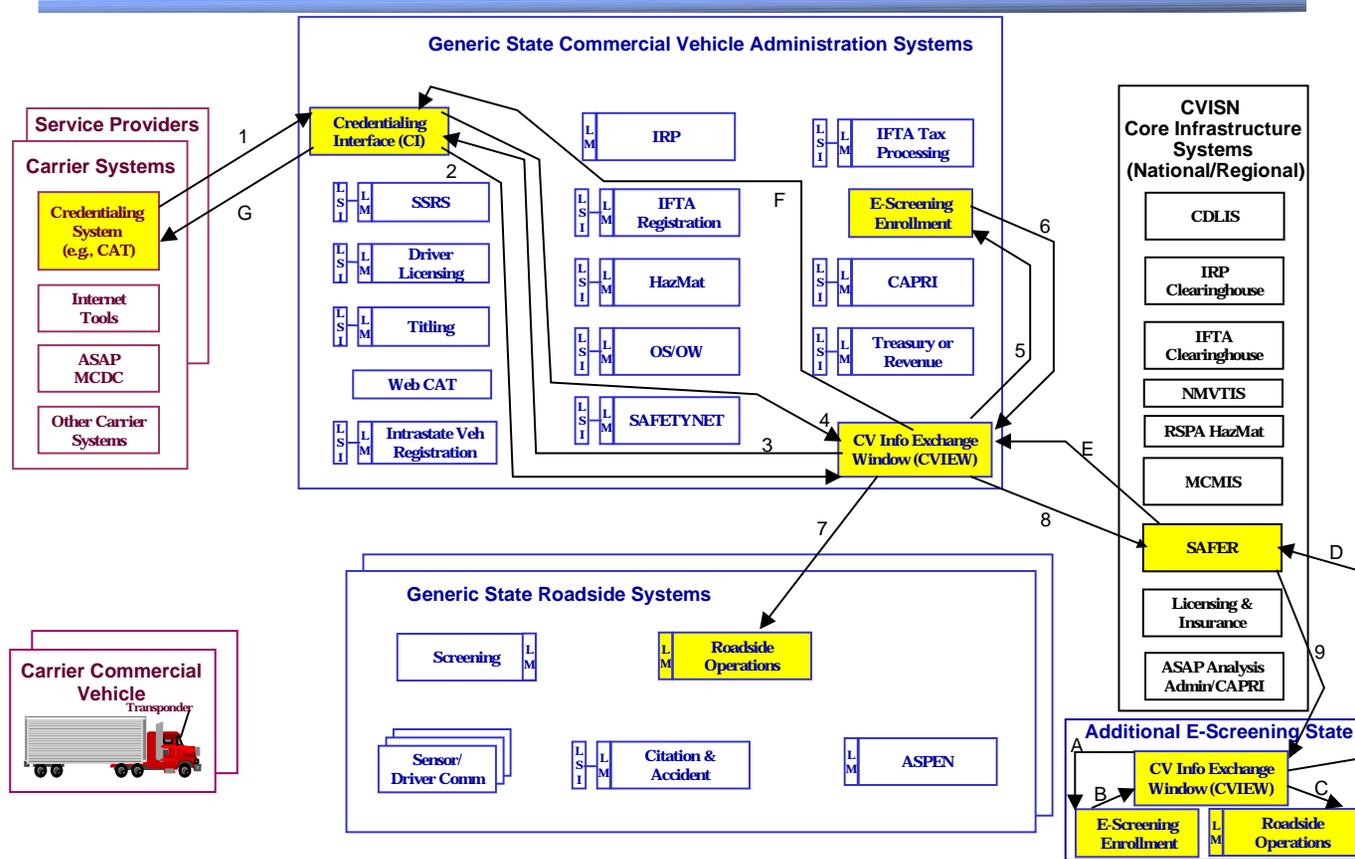
Example 1 Operational Scenario: Electronic Screening Enrollment

Carrier submits Electronic Screening Applications to a CAT

- A. The Additional E-Screening State CVIEW forwards the carrier snapshot to the E-Screening Enrollment system, via an EDI X12 TS 285.
- B. The Additional E-Screening State Enrollment system processes the request and either approves or disapproves the Carrier's participation. The E-Screening Enrollment system transmits the state's decision to CVIEW as a carrier snapshot segment update, via an EDI X12 TS 285.
- C. The Additional E-Screening State CVIEW sends carrier and vehicle snapshot segment updates to the Roadside Operations system, via EDI X12 TS 285. Snapshots are used at the roadside when making the bypass/pull-in decision.
- D. The Additional E-Screening State CVIEW sends carrier and vehicle snapshot segment updates to SAFER, via EDI X12 TS 285. These updates contain the acceptance decisions.
- E. SAFER sends the carrier and vehicle snapshot segment updates to the Enrollment Agent State CVIEW, via EDI X12 TS 285.
- F. The Enrollment Agent State CVIEW sends the carrier and vehicle snapshot segment updates to the CI, via EDI X12 TS 285.
- G. Enrollment Agent State CI passes acceptance status to CAT, via EDI X12 TS 286.
Note: Multiple TS 286 messages may be transmitted at various times as each state modifies its acceptance decision.

Example 1 Functional Thread Diagram: Electronic Screening Enrollment

Carrier submits Electronic Screening Applications to a CAT



Example 2 Operational Scenario: Electronic Screening Enrollment

Electronic Screening Administrator Handles Enrollment Function

Note: Prior to enrolling, the carrier will examine the electronic screening policy disclosures of the states in which it operates and determines where it would like to participate in electronic screening.

1. The carrier contacts the Electronic Screening Administrator for the Enrollment Agent State and manually submits applications to perform any of the following functions. The input required for each function is also listed.
 - Carrier Enroll request: Carrier ID, participating request, other state required data.
 - Vehicle enroll request: Carrier ID, Vehicle ID (VIN), Transponder ID, participation requests, other state-required data.
 - Add/update carrier supplemental: Carrier ID, Vehicle ID (VIV), Transponder ID, participation requests, other state-required data.
 - Transponder ID, participation requests, other state-required data.
 - Status query

Note: The state in which the carrier enrolls is referred to as the Enrollment Agent State, and other states that the carrier enrolls to participate in are referred to as Additional E-Screening States.

Example 2 Operational Scenario: Electronic Screening Enrollment

Electronic Screening Administrator Handles Enrollment Function

2. The Electronic Screening Enrollment administrator processes the request and performs enrollment criteria checks and data verification. The carrier application is either approved or disapproved, based on the state's enrollment criteria. Note: The carrier is required to perform vehicle registration prior to E-screening enrollment.

The Electronic Screening Enrollment administrator sends carrier and vehicle snapshot segment updates to CVIEW, via an EDI X12 TS 285. These segment updates modify the E-screening participation fields and the Enrollment State's decision in the affected snapshots.

3. The Enrollment Agent State CVIEW sends carrier and vehicle snapshot segment updates to the Roadside Operations system, via EDI X12 TS 285. Snapshots are used at the roadside when making the bypass/pull-in decision.

Example 2 Operational Scenario: Electronic Screening Enrollment

Electronic Screening Administrator Handles Enrollment Function

4. The Enrollment Agent State CVIEW sends carrier and vehicle snapshot segment updates to SAFER, via EDI X12 TS 285. These updates include the participation request data and Enrollment Agent State acceptance decision.
5. SAFER sends the carrier and vehicle snapshot segment updates to Additional E-Screening state CVIEWs, via EDI X12 TS 285. Transponder ID information is passed only to states where the Carrier has requested participation.

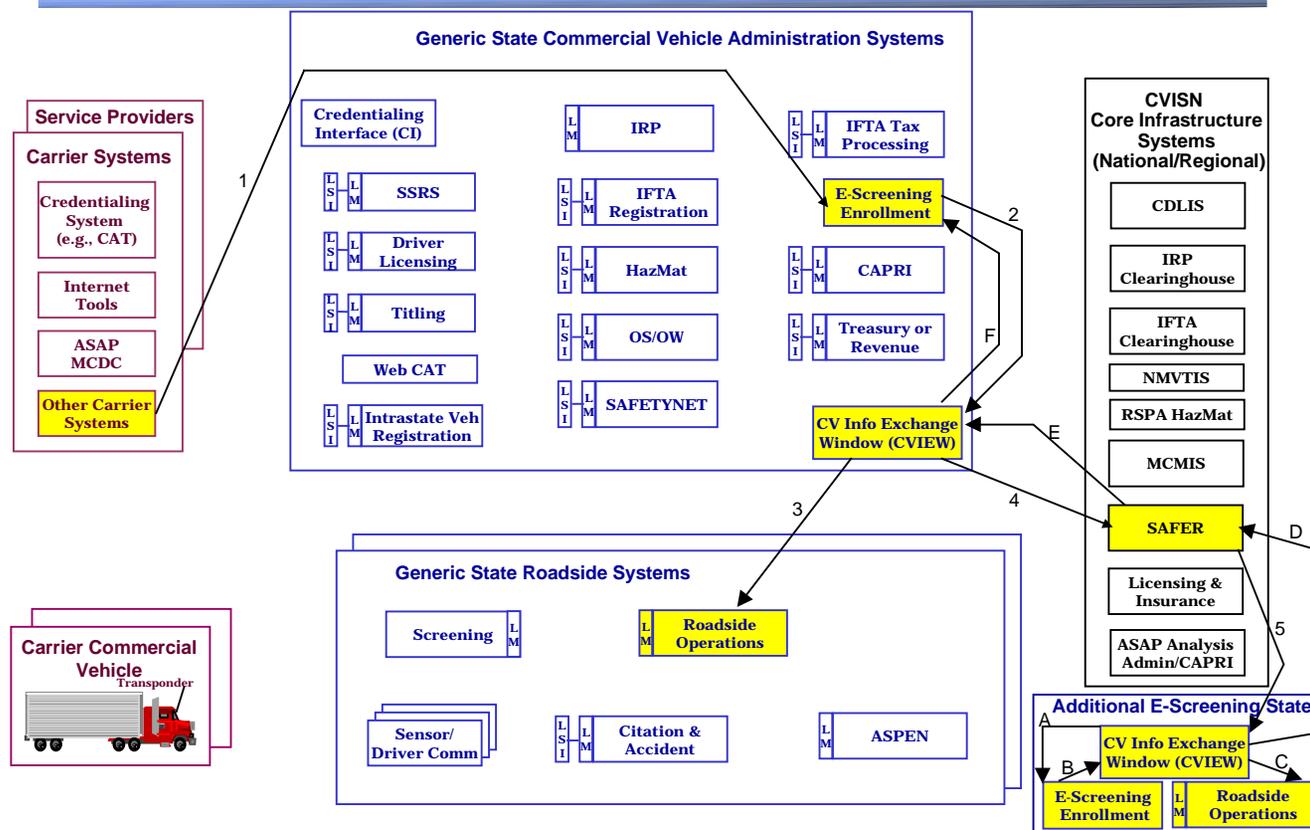
Example 2 Operational Scenario: Electronic Screening Enrollment

Electronic Screening Administrator Handles Enrollment Function

- A. The Additional E-Screening State CVIEW forwards the carrier snapshot to the E-Screening Enrollment administrator, via an EDI X12 TS 285.
- B. The Additional E-Screening State Enrollment administrator processes the request and either approves or disapproves the Carrier's participation. The E-Screening Enrollment system transmits the state's decision to CVIEW as a carrier snapshot segment update, via an EDI X12 TS 285.
- C. The Additional E-Screening State CVIEW sends carrier and vehicle snapshot segment updates to the Roadside Operations system, via EDI X12 TS 285. Snapshots are used at the roadside when making the bypass/pull-in decision.
- D. The Additional E-Screening State CVIEW sends carrier and vehicle snapshot segment updates to SAFER, via EDI X12 TS 285. These updates contain the acceptance decisions.
- E. SAFER sends the carrier and vehicle snapshot segment updates to the Enrollment Agent State CVIEW, via EDI X12 TS 285.
- F. Carrier and vehicle snapshots may be viewed by the Electronic Screening Enrollment administrator by performing queries against the Enrollment Agent State CVIEW. The query responses from CVIEW will be via EDI X12 TS 285.

Example 2 Functional Thread Diagram: Electronic Screening Enrollment

Electronic Screening Administrator Handles Enrollment Function



Example 3 Operational Scenario: Screen Vehicles electronically, using Snapshot data States using the HELP PrePass system

Note: The following steps (1 - 4) occur in real time for each vehicle.

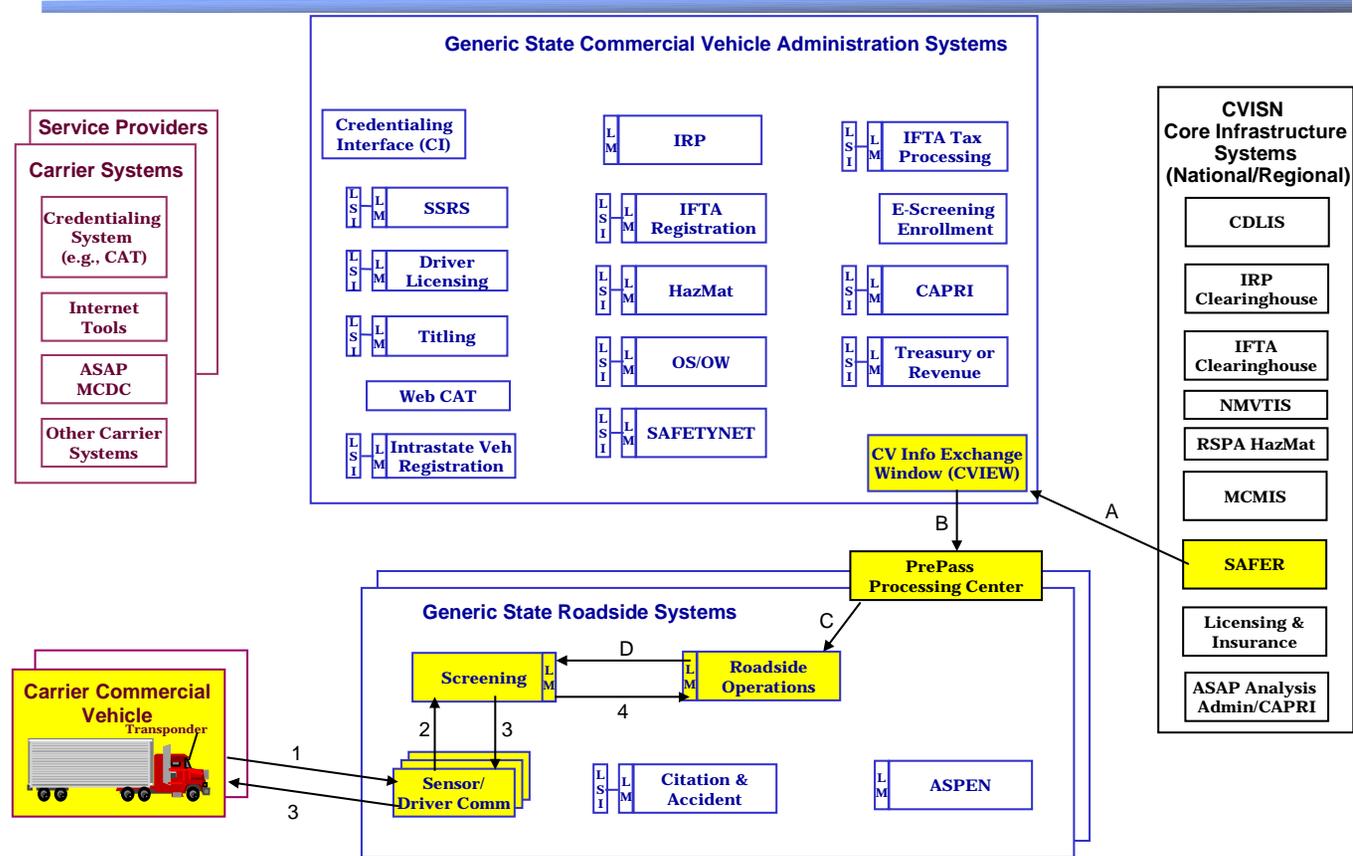
1. Transponder ID is transmitted from the Dedicated Short Range Communications (DSRC) transponder on board the Commercial Vehicle to the Sensor/Driver Communications interface using ASTM version 6.
2. A screening decision is made.
3. The screening decision is communicated back to the driver, again using the ASTM version 6 standards.
4. Screening information is communicated back to Roadside Operations for use by site staff. This may be a non-standard interface.

Example 3 Operational Scenario: Screen Vehicles electronically, using Snapshot data States using the Prepass system

Note: The following steps (A - D) occur on a periodic basis to establish screening values for the site.

- A. SAFER sends subscription updates to the state CVIEW for carrier and vehicle snapshots based on state-specified subscriptions, via EDI X12 TS 285.
- B. CVIEW distributes carrier and vehicle snapshots to the PrePass Processing Center.
- C. The PrePass Processing Center distributes a Pre-clearance list to the roadside sites.
- D. Enrolled vehicles are identified from the Pre-clearance list. The resulting carrier and vehicle specific screening “scores” or values are sent to the screening system. This is a local interface that is not subject to standards.

Example 3 Functional Thread Diagram: Screen Vehicles electronically, using Snapshot data States using the PrePass system



Example 4 Operational Scenario: Screen Vehicles electronically, using Snapshot data States using the NorPass system

Note: The following steps (A - E) occur on a periodic basis to establish screening values for the site.

- A. SAFER sends subscription updates to the state CVIEW for carrier and vehicle snapshots based on state-specified subscriptions, via EDI X12 TS 285.
- B. The Credentialing Interface (CI) updates CVIEW with snapshot data for Intrastate carriers and vehicles, via EDI X12 TS 285.
- C. CVIEW distributes carrier and vehicle snapshots to the Enrolled Vehicle List (EVL) Builder/Editor, via EDI X12 TS 285.
- D. The EVL Builder/Editor generates an EVL from the CVIEW snapshot data and downloads the EVL to the roadside.
- E. Enrolled vehicles are identified from the EVL. The resulting carrier and vehicle specific screening “scores” or values are sent to the screening system. This is a local interface that is not subject to standards.

Example 4 Operational Scenario: Screen Vehicles electronically, using Snapshot data States using the NorPass system

Note: The following steps (1 - 4) occur in real time for each vehicle.

1. Transponder ID is transmitted from the Dedicated Short Range Communications (DSRC) transponder on board the Commercial Vehicle to the Sensor/Driver Communications interface using ASTM version 6.
2. A screening decision is made.
3. The screening decision is communicated back to the driver, again using the ASTM version 6 standards.
4. Screening information is communicated back to Roadside Operations for use by site staff. This may be a non-standard interface.

Example 4 Functional Thread Diagram: Screen Vehicles electronically, using Snapshot data States using the NorPass system

