APPENDIX A:
List of Data Flow Diagrams and P-Specs

Appendix A - List of Data Flow Diagrams and P-Specs

DFD	0	Manage ITS
DFD	1	Manage Traffic
DFD	1.1	Provide Traffic Surveillance
DFD	1.1.1	Process Sensor Data
PSpec	1.1.1.1	Process Traffic Sensor Data (RS)
PSpec	1.1.1.2	Collect and Process Sensor Fault Data (TMS)
PSpec	1.1.1.3	Process Environmental Sensor Data (RS)
PSpec	1.1.1.4	Manage Data Collection and Monitoring (RS)
DFD	1.1.1.5	Process Advanced Roadway Data
PSpec	1.1.1.5.1	Collect Roadway Condition Data (RS)
PSpec	1.1.1.5.2	Provide Other Roadside Inputs (RS)
PSpec	1.1.1.5.3	Process Roadway Warning Data (RS)
PSpec	1.1.1.5.4	Process Road User Protection (RS)
DFD	1.1.2	Process and Store Traffic Data
PSpec	1.1.2.1	Process Traffic Data for Storage (TMS)
PSpec	1.1.2.2	Process Traffic Data (TMS)
PSpec	1.1.2.3	Update Data Source Static Data (TMS)
PSpec	1.1.2.4	Monitor HOV lane use (TMS)
PSpec	1.1.2.5	Process Tag/AVL Data for Link Time Data (TMS)
PSpec	1.1.2.6	Process Collected Vehicle Smart Probe Data (RS)
PSpec	1.1.2.7	Monitor Reversible Lanes (TMS)
PSpec	1.1.2.8	Manage Environmental Data for Traffic (TMS)
PSpec	1.1.3	Generate Predictive Traffic Model (TMS)
DFD	1.1.4	Display and Output Traffic Data
PSpec	1.1.4.1	Retrieve Traffic Data (TMS)
PSpec	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface (TMS)
PSpec	1.1.4.3	Provide Direct Media Traffic Data Interface (TMS)
PSpec	1.1.4.4	Update Traffic Display Map Data (TMS)
PSpec	1.1.4.5	Provide Media System Traffic Data Interface (ISP)
PSpec	1.1.4.6	Provide Traffic Data Retrieval Interface (ISP)
PSpec	1.1.4.7	Manage Traffic Archive Data (TMS)
PSpec	1.1.4.8	Provide Disaster Command Data (TMS)
PSpec	1.1.5	Exchange data with Other Traffic Centres (TMS)
PSpec	1.1.6	Collect Vehicle Tag Data for Link Time Calculations (RS)
PSpec	1.1.7	Collect Vehicle Smart Probe Data (RS)
DFD	1.2	Provide Device Control
PSpec	1.2.1	Select Strategy (TMS)
DFD	1.2.2	Determine Road and Freeway State
PSpec	1.2.2.1	Determine Indicator State for Freeway Management (TMS)
PSpec	1.2.2.2	Determine Indicator State for Road Management (TMS)
PSpec	1.2.3	Determine Ramp State (TMS)
DFD	1.2.4	Output Control Data
PSpec	1.2.4.1	Output Control Data for Roads (TMS)
PSpec	1.2.4.2	Output Control Data for Freeways (TMS)
PSpec	1.2.4.3	Output In-vehicle Signage Data (TMS)
DFD	1.2.5	Manage Parking Lot State
PSpec	1.2.5.1	Determine Parking Lot State (PMS)
PSpec	1.2.5.2	Coordinate Other Parking Data (PMS)
PSpec	1.2.5.3	Provide Parking Lot Operator Interface (PMS)
PSpec	1.2.5.4	Determine P+R needs for Transit Management (PMS)
PSpec	1.2.5.5	Manage Parking Archive Data (PMS)
PSpec	1.2.5.6	Calculate Parking Lot Occupancy (PMS)
DFD	1.2.6	Maintain Static Data for TMC
PSpec	1.2.6.1	Maintain Traffic and Sensor Static Data (TMS)
PSpec	1.2.6.2	Provide Static Data Store Output Interface (TMS)
DFD	1.2.7	Provide Roadside Control Facilities
PSpec	1.2.7.1	Process Indicator Output Data for Roads (RS)
PSpec	1.2.7.2	Monitor Roadside Equipment Operation for Faults (RS)
PSpec	1.2.7.3	Manage Indicator Preemptions (RS)
PSpec	1.2.7.4	Process In-vehicle Signage Data (RS)
PSpec	1.2.7.5	Process Indicator Output Data for Freeways (RS)
PSpec	1.2.7.6	Provide Intersection Collision Avoidance Data (RS)
PSpec	1.2.7.7	Process Vehicle Smart Probe Data for Output (RS)
PSpec	1.2.7.8	Receive Other Roadside Inputs (RS)
PSpec	1.2.7.9	Display Roadway Warnings (RS)
DFD	1.2.8	Collect and Process Indicator Fault Data

PSpec	1.2.8.1	Collect Indicator Fault Data (TMS)
PSpec	1.2.8.2	Maintain Indicator Fault Data Store (TMS)
PSpec	1.2.8.3	Provide Indicator Fault Interface for C and M (TMS)
PSpec	1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface (TMS)
DFD	1.3	Manage Incidents
DFD	1.3.1	Traffic Data Analysis for Incidents
PSpec	1.3.1.1	Analyze Traffic Data for Incidents (TMS)
PSpec	1.3.1.2	Maintain Static Data for Incident Management (TMS)
PSpec	1.3.1.3	Process Traffic Images (RS)
DFD	1.3.2	Review and Manage Incident Data
PSpec	1.3.2.1	Store Possible Incident Data (TMS)
PSpec	1.3.2.2	Review and Classify Possible Incidents (TMS)
PSpec	1.3.2.3	Review and Classify Planned Events (TMS)
PSpec	1.3.2.4	Provide Planned Events Store Interface (TMS)
PSpec	1.3.2.5	Provide Current Incidents Store Interface (TMS)
PSpec	1.3.3	Respond to Current Incidents (TMS)
DFD	1.3.4	Provide Operator Interfaces for Incidents
PSpec	1.3.4.1	Retrieve Incident Data (TMS)
PSpec	1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface (TMS)
PSpec	1.3.4.3	Provide Media Incident Data Interface (TMS)
PSpec	1.3.4.4	Update Incident Display Map Data (TMS)
PSpec	1.3.4.5	Manage Resources for Incidents (TMS)
PSpec	1.3.5	Manage Possible Predetermined Responses Store (TMS)
PSpec	1.3.6	Manage Predetermined Incident Response Data (TMS)
PSpec	1.3.7	Analyze Incident Response Log (TMS)
DFD	1.4	Manage Travel Demand
PSpec	1.4.1	Provide Traffic Operations Personnel Demand Interface (TMS)
PSpec	1.4.2	Collect Demand Forecast Data (TMS)
PSpec	1.4.3	Update Demand Display Map Data (TMS)
PSpec	1.4.4	Implement Demand Management Policy (TMS)
PSpec	1.4.5	Calculate Forecast Demand (TMS)
DFD	1.5	Manage Emissions
PSpec	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface (EMMS)
PSpec	1.5.2	Process Pollution Data (EMMS)
PSpec	1.5.3	Update Pollution Display Map Data (EMMS)
PSpec	1.5.4	Manage Pollution State Data Store (EMMS)
PSpec	1.5.5	Process Vehicle Pollution Data (RS)
PSpec	1.5.6	Detect Roadside Pollution Levels (RS)
PSpec	1.5.7	Manage Pollution Data Log (EMMS)
PSpec	1.5.8	Manage Pollution Reference Data Store (EMMS)
PSpec	1.5.9	Manage Pollution Archive Data (EMMS)
DFD	1.6	Manage Highway Rail Intersections
DFD	1.6.1	Manage HRI Vehicle Traffic
PSpec	1.6.1.1	Detect Roadway Events (RS)
DFD	1.6.1.2	Activate HRI Device Controls
PSpec	1.6.1.2.1	Control HRI Traffic Signals (RS)
PSpec	1.6.1.2.2	Control HRI Warnings and Barriers (RS)
PSpec	1.6.1.2.3	Provide SSR Device Controls (RS)
PSpec	1.6.1.2.4	Provide HSR Device Controls (RS)
PSpec	1.6.1.2.5	Manage Device Control (RS)
PSpec	1.6.1.2.6	Maintain Device State (RS)
PSpec	1.6.1.3	Perform Equipment Self-Test (RS)
DFD	1.6.1.4	Provide Advisories and Alerts
PSpec	1.6.1.4.1	Generate Alerts and Advisories (RS)
PSpec	1.6.1.4.2	Provide Closure Parameters (RS)
PSpec	1.6.1.4.3	Report Alerts and Advisories (RS)
PSpec	1.6.1.4.4	Report HRI Status on Approach (RS)
PSpec	1.6.1.5	Detect HRI Hazards (RS)
DFD	1.6.1.6	Provide Advance Warnings
PSpec	1.6.1.6.1	Close HRI on Detection (RS)
PSpec	1.6.1.6.2	Detect Imminent Vehicle/Train Collision (RS)
DFD	1.6.1.7	Execute Local Control Strategy
PSpec	1.6.1.7.1	Control Vehicle Traffic at Passive HRI (RS)
PSpec	1.6.1.7.2	Control Vehicle Traffic at Active HRI (RS)
PSpec	1.6.1.7.3	Close HRI on Command (RS)
DFD	1.6.2	Interact with Rail Operations
PSpec	1.6.2.1	Exchange Data with Rail Operations (TMS)
PSpec	1.6.2.2	Manage Alerts and Advisories (TMS)
PSpec	1.6.2.3	Manage Rail Traffic Control Data (TMS)

DFD	1.6.3	Manage HRI Rail Traffic
PSpec	1.6.3.1	Interact with Wayside Systems (RS)
PSpec	1.6.3.2	Advise and Protect Train Crews (RS)
PSpec	1.6.3.3	Provide ATS Alerts (RS)
DFD	1.6.4	Interact with Vehicle Traffic Management
PSpec	1.6.4.1	Manage HRI Closures (TMS)
PSpec	1.6.4.2	Exchange Data with Traffic Management (TMS)
DFD	1.6.5	Monitor HRI Status
PSpec	1.6.5.1	Provide Interactive Interface (RS)
PSpec	1.6.5.2	Determine HRI Status (RS)
PSpec	1.6.5.3	Maintain HRI Closure Data (RS)
DFD	1.7	Manage Operations and Maintenance
DFD	1.7.1	Manage Operations and Maintenance Data
PSpec	1.7.1.1	Gather O&M Data (MMS)
PSpec	1.7.1.2	Manage O&M Archive Data (MMS)
PSpec	1.7.1.3	Manage O&M Assets (MMS)
DFD	1.7.1.4	Manage Environmental Data for Operations and Maintenance
PSpec	1.7.1.4.1	Gather and Process Environmental Data (MMS)
PSpec	1.7.1.4.2	Create Road Forecasts (MMS)
PSpec	1.7.1.4.3	Fuse Environmental Data (MMS)
DFD	1.7.2	Manage Maintenance Activity
PSpec	1.7.2.1	Schedule Maintenance Activity (MMS)
PSpec	1.7.2.2	Manage and Control On-board Maintenance Systems (MVS)
PSpec	1.7.2.3	Manage Maintenance Operator Interface (MMS)
PSpec	1.7.2.4	Manage Maintenance Driver Interface (MVS)
PSpec	1.7.2.5	Collect Environmental Data On-board (MVS)
PSpec	1.7.3	Control Roadway Maintenance Devices (MMS)
PSpec	1.7.4	Disseminate O&M Information (MMS)
DFD	2	Manage Commercial Vehicles
DFD	2.1	Manage Commercial Vehicle Fleet Operations
PSpec	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing (FMS)
PSpec	2.1.2	Provide Commercial Fleet Static Route (FMS)
PSpec	2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface (FMS)
PSpec	2.1.4	Provide Fleet Manager Commercial Vehicle Communications (FMS)
PSpec	2.1.5	Provide Commercial Vehicle Driver Routing Interface (CVS)
PSpec	2.1.6	Manage Driver Instruction Store (FMS)
DFD	2.2	Manage Commercial Vehicle Driver Operations
PSpec	2.2.1	Manage CV Electronic Credential and Tax Filing Interface (FMS)
PSpec	2.2.2	Provide Vehicle Static Route (CVS)
PSpec	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface (CVS)
PSpec	2.2.4	Provide Commercial Vehicle Driver Communications (CVS)
DFD	2.3	Provide Commercial Vehicle Roadside Facilities
PSpec	2.3.1	Produce Commercial Vehicle Driver Message at Roadside (CVCS)
DFD	2.3.2	Provide Commercial Vehicle Clearance Screening
PSpec	2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database (CVCS)
PSpec	2.3.2.2	Process Screening Transactions (CVCS)
DFD	2.3.3	Provide Roadside Commercial Vehicle Safety
PSpec	2.3.3.1	Provide Commercial Vehicle Checkstation Communications (CVCS)
PSpec	2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface (CVCS)
PSpec	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase (CVCS)
PSpec	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening (CVCS)
PSpec	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection (CVCS)
PSpec	2.3.4	Detect Commercial Vehicle (CVCS)
PSpec	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface (CVCS)
PSpec	2.3.6	Provide Commercial Vehicle Reports (CVCS)
PSpec	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle (CVS)
PSpec	2.3.8	Provide Commercial Vehicle Border Screening (CVCS)
DFD	2.4	Provide Commercial Vehicle Data Collection
PSpec	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside (CVS)
PSpec	2.4.2	Collect On-board Commercial Vehicle Sensor Data (CVS)
PSpec	2.4.3	Analyze Commercial Vehicle On-board Data (CVS)
PSpec	2.4.4	Provide Commercial Vehicle Driver Interface (CVS)
PSpec	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager (CVS)
PSpec	2.4.6	Provide Commercial Vehicle On-board Data Store Interface (CVS)
DFD	2.5	Administer Commercial Vehicles
PSpec	2.5.1	Manage Commercial Vehicle Trips and Clearances (CVAS)
PSpec	2.5.2	Obtain Electronic Credential and Tax Filing Payment (CVAS)
PSpec	2.5.3	Update Permits and Duties Store (CVAS)
PSpec	2.5.4	Communicate with Other Commercial Vehicle Administration System (CVAS)

PSpec	2.5.5	Manage Commercial Vehicle Credentials and Enrollment (CVAS)
PSpec	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities (CVAS)
PSpec	2.5.7	Process Commercial Vehicle Violations (CVAS)
PSpec	2.5.8	Process Data Received from Roadside Facilities (CVAS)
PSpec	2.5.9	Manage Commercial Vehicle Archive Data (CVAS)
DFD	2.6	Provide Commercial Vehicle On-board Data
PSpec	2.6.1	Provide Commercial Vehicle Manager Tag Data Interface (FMS)
PSpec	2.6.2	Transmit Commercial Vehicle Tag Data (CVS)
PSpec	2.6.3	Provide Commercial Driver Tag Data Interface (CVS)
PSpec	2.6.4	Provide Lock Tag Data Interface (CVS)
PSpec	2.6.5	Manage Commercial Vehicle Tag Data Store (CVS)
PSpec	2.7	Manage Cargo (FMS)
DFD	2.7.1	Manage Intermodal Terminal Interface
PSpec	2.7.1.1	Manage Terminal Access (ITSS)
PSpec	2.7.1.2	Manage Container Pickup and Delivery (ITSS)
PSpec	2.7.1.3	Manage Container Release (ITSS)
PSpec	2.7.1.4	Provide Intermodal Terminal Operator I/F (ITSS)
PSpec	2.7.1.5	Provide Container Tracking (ITSS)
DFD	2.7.2	Manage Intermodal Container
PSpec	2.7.2.1	Determine Container Status (ICS)
PSpec	2.7.2.2	Determine Cargo Status (ICS)
PSpec	2.7.2.3	Provide Cargo Status Interface (ICS)
PSpec	2.7.2.4	Provide Container Status Interface (ICS)
PSpec	2.7.2.5	Manage Customs Interface (ICS)
DFD	2.7.3	Manage On-Board Intermodal Applications
PSpec	2.7.3.1	Provide Driver Interface for Intermodal Freight Dispatch (CVS)
PSpec	2.7.3.2	Monitor Container Status (CVS)
PSpec	2.7.3.3	Monitor Chassis Status (CVS)
PSpec	2.7.3.4	Manage On-Board Facility Access (CVS)
DFD	2.7.4	Manage Intermodal Dispatch
PSpec	2.7.4.1	Monitor Intermodal Elements (FMS)
PSpec	2.7.4.2	Provide Fleet Manager Interface for Intermodal (FMS)
PSpec	2.7.4.3	Manage Intermodal Customer Interface (FMS)
PSpec	2.7.4.4	Manage Other Intermodal FMS Interface (FMS)
PSpec	2.7.4.5	Manage Distribution and Logistics Management Provider Interface (FMS)
PSpec	2.7.4.6	Manage Freight Consolidation Station Interface (FMS)
DFD	3	Provide Vehicle Monitoring and Control
DFD	3.1	Monitor Vehicle Status
PSpec	3.1.1	Produce Collision and Crash Avoidance Data (VS)
PSpec	3.1.2	Carry-out Safety Analysis (VS)
PSpec	3.1.3	Process Vehicle On-board Data (VS)
DFD	3.2	Provide Automatic Vehicle Operation
PSpec	3.2.1	Provide Driver Interface (VS)
PSpec	3.2.2	Provide AHS Control (VS)
DFD	3.2.3	Provide Vehicle Control
PSpec	3.2.3.1	Provide Command Interface (VS)
PSpec	3.2.3.2	Manage Platoon Following (VS)
PSpec	3.2.3.3	Process data for Vehicle Actuators (VS)
DFD	3.2.3.4	Provide Servo Controls
PSpec	3.2.3.4.1	Provide Speed Servo Control (VS)
PSpec	3.2.3.4.2	Provide Headway Servo Control (VS)
PSpec	3.2.3.4.3	Provide Lane Servo Control (VS)
PSpec	3.2.3.4.4	Provide Change Lane Servo Control (VS)
PSpec	3.2.3.4.5	Provide Vehicle Control Data Interface (VS)
PSpec	3.2.3.5	Process Vehicle Sensor Data (VS)
PSpec	3.2.3.6	Communicate with other Platoon Vehicles (VS)
PSpec	3.2.4	Process Sensor Data for AHS input (VS)
PSpec	3.2.5	Check Vehicle for AHS eligibility (RS)
PSpec	3.2.6	Manage AHS Check-in and Check-out (RS)
PSpec	3.2.7	Manage AHS Operations (TMS)
DFD	3.3	Provide Automatic Emergency Notification
PSpec	3.3.1	Provide Cargo Data for Incident Notification (CVS)
PSpec	3.3.2	Provide Communications Function (VS)
PSpec	3.3.3	Build Automatic Collision Notification Message (VS)
PSpec	3.4	Enhance Driver's Vision (VS)
DFD	4	Manage Transit
DFD	4.1	Operate Vehicles and Facilities
PSpec	4.1.1	Process Transit Vehicle Sensor Trip Data (TRVS)
DFD	4.1.2	Determine Transit Vehicle Deviation and Corrections

PSpec	4.1.2.1	Determine Transit Vehicle Deviation and ETA (TRVS)
PSpec	4.1.2.2	Determine Transit Vehicle Corrective Instructions (TRVS)
PSpec	4.1.2.3	Provide Transit Vehicle Driver Interface (TRVS)
PSpec	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface (TRMS)
PSpec	4.1.2.5	Request Transit Vehicle Preemptions (TRVS)
PSpec	4.1.3	Provide Transit Vehicle Location Data (TRVS)
PSpec	4.1.4	Manage Transit Vehicle Deviations (TRMS)
PSpec	4.1.5	Provide Transit Vehicle Status Information (TRMS)
PSpec	4.1.6	Manage Transit Vehicle Operations Data (TRMS)
DFD	4.1.7	Manage Connection Protection
PSpec	4.1.7.1	Manage Connections with External Systems (TRMS)
PSpec	4.1.7.2	Provide Transit Vehicle Deviation Data Output Interface (TRMS)
PSpec	4.1.7.3	Manage Individual Service Requests (TRMS)
PSpec	4.1.8	Provide Transit Operations Data Distribution Interface (ISP)
PSpec	4.1.9	Process Transit Vehicle Sensor Maintenance Data (TRVS)
DFD	4.2	Plan and Schedule Transit Services
DFD	4.2.1	Provide Demand Responsive Transit Service
PSpec	4.2.1.1	Process Demand Responsive Transit Trip Request (TRMS)
PSpec	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability (TRMS)
PSpec	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes (TRMS)
PSpec	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route (TRMS)
PSpec	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data (TRVS)
PSpec	4.2.1.6	Provide Demand Responsive Transit Driver Interface (TRVS)
PSpec	4.2.2	Provide Transit Plans Store Interface (TRMS)
DFD	4.2.3	Generate Transit Routes and Schedules
PSpec	4.2.3.1	Generate Transit Routes (TRMS)
PSpec	4.2.3.2	Generate Schedules (TRMS)
PSpec	4.2.3.3	Produce Transit Service Data for External Use (TRMS)
PSpec	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation (TRMS)
PSpec	4.2.3.5	Manage Transit Operational Data Store (TRMS)
PSpec	4.2.3.6	Produce Transit Service Data for Manage Transit Use (TRMS)
PSpec	4.2.3.7	Provide Interface for Other TRM Data (TRMS)
PSpec	4.2.3.8	Provide Interface for Transit Service Raw Data (TRMS)
PSpec	4.2.3.9	Update Transit Map Data (TRMS)
PSpec	4.2.4	Manage Transit Archive Data (TRMS)
DFD	4.3	Schedule Transit Vehicle Maintenance
PSpec	4.3.1	Monitor Transit Vehicle Condition (TRMS)
PSpec	4.3.2	Generate Transit Vehicle Maintenance Schedules (TRMS)
PSpec	4.3.3	Generate Technician Work Assignments (TRMS)
PSpec	4.3.4	Monitor And Verify Maintenance Activity (TRMS)
PSpec	4.3.5	Report Transit Vehicle Information (TRMS)
PSpec	4.3.6	Update Transit Vehicle Information (TRMS)
PSpec	4.3.7	Manage Transit Vehicle Operations Data Store (TRMS)
DFD	4.4	Support Security and Coordination
DFD	4.4.1	Provide Transit Security and Emergency Management
PSpec	4.4.1.1	Manage Transit Security (TRMS)
PSpec	4.4.1.2	Manage Transit Emergencies (TRVS)
PSpec	4.4.1.3	Provide Transit System Operator Security Interface (TRMS)
PSpec	4.4.1.4	Provide Transit External Interface for Emergencies (TRMS)
PSpec	4.4.1.5	Provide Transit Driver Interface for Emergencies (TRVS)
PSpec	4.4.1.6	Collect Transit Vehicle Emergency Information (TRMS)
PSpec	4.4.1.7	Monitor Secure Area (RTS)
PSpec	4.4.1.8	Report Traveller Emergencies (RTS)
PSpec	4.4.2	Coordinate Multiple Agency Responses to Incidents (TRMS)
PSpec	4.4.3	Generate Responses for Incidents (TRMS)
PSpec	4.4.4	Coordinate Transit Disaster Response (TRMS)
DFD	4.5	Generate Transit Driver Schedules
PSpec	4.5.1	Assess Transit Driver Performance (TRMS)
PSpec	4.5.2	Assess Transit Driver Availability (TRMS)
PSpec	4.5.3	Access Transit Driver Cost Effectiveness (TRMS)
PSpec	4.5.4	Assess Transit Driver Eligibility (TRMS)
PSpec	4.5.5	Generate Transit Driver Route Assignments (TRMS)
PSpec	4.5.6	Update Transit Driver Information (TRMS)
PSpec	4.5.7	Report Transit Driver Information (TRMS)
PSpec	4.5.8	Provide Transit Driver Information Store Interface (TRMS)
DFD	4.6	Collect Transit Fares in the Vehicle
PSpec	4.6.1	Detect Transit User on Vehicle (TRVS)
PSpec	4.6.2	Determine Transit User Needs on Vehicle (TRVS)
PSpec	4.6.3	Determine Transit Fare on Vehicle (TRVS)

PSpec	4.6.4	Manage Transit Fare Billing on Vehicle (TRVS)
PSpec	4.6.5	Provide Transit User Fare Payment Interface on Vehicle (TRVS)
PSpec	4.6.6	Update Transit Vehicle Fare Data (TRVS)
PSpec	4.6.7	Provide Transit Vehicle Passenger Data (TRVS)
PSpec	4.6.8	Manage Transit Vehicle Advanced Payments (TRMS)
DFD	4.7	Provide Transit User Roadside Facilities
DFD	4.7.1	Provide Transit User Roadside Information
PSpec	4.7.1.1	Provide Transit User Roadside Data Interface (RTS)
PSpec	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface (RTS)
DFD	4.7.2	Collect Transit Fares at the Roadside
PSpec	4.7.2.1	Detect Transit User at Roadside (RTS)
PSpec	4.7.2.2	Determine Transit User Needs at Roadside (RTS)
PSpec	4.7.2.3	Determine Transit Fare at Roadside (RTS)
PSpec	4.7.2.4	Manage Transit Fare Billing at Roadside (RTS)
PSpec	4.7.2.5	Provide Transit User Roadside Fare Interface (RTS)
PSpec	4.7.2.6	Update Roadside Transit Fare Data (RTS)
PSpec	4.7.2.7	Provide Transit Roadside Passenger Data (RTS)
DFD	5	Manage Emergency Services
DFD	5.1	Provide Emergency Service Allocation
PSpec	5.1.1	Identify Emergencies from Inputs (EM)
PSpec	5.1.2	Determine Coordinated Response Plan (EM)
PSpec	5.1.3	Communicate Emergency Status (EM)
PSpec	5.1.4	Manage Emergency Response (EM)
PSpec	5.1.5	Manage Emergency Service Allocation Store (EM)
PSpec	5.1.6	Process Mayday Messages (EM)
PSpec	5.2	Provide Operator Interface for Emergency Data (EM)
DFD	5.3	Manage Emergency Vehicles
PSpec	5.3.1	Select Response Mode (EM)
PSpec	5.3.2	Dispatch Vehicle (EM)
PSpec	5.3.3	Track Vehicle (EVS)
PSpec	5.3.4	Assess Response Status (EM)
PSpec	5.3.5	Provide Emergency Personnel Interface (EVS)
PSpec	5.3.6	Maintain Vehicle Status (EM)
PSpec	5.3.7	Provide Emergency Vehicle Route (EM)
DFD	5.4	Provide Law Enforcement Allocation
PSpec	5.4.1	Process TM Detected Violations (TMS)
PSpec	5.4.2	Process Violations for Tolls (TAS)
PSpec	5.4.3	Process Parking Lot Violations (PMS)
PSpec	5.4.4	Process Fare Payment Violations (TRMS)
PSpec	5.4.5	Process Vehicle Fare Collection Violations (TRMS)
PSpec	5.4.6	Process CV Violations (CVAS)
PSpec	5.4.7	Process Roadside Fare Collection Violations (TRMS)
PSpec	5.5	Update Emergency Display Map Data (EM)
PSpec	5.6	Manage Emergency Services Data (EM)
DFD	5.7	Co-ordinate Disaster Response
PSpec	5.7.1	Collect Disaster Response Data (EM)
PSpec	5.7.2	Provide Medical Facility Interface (EM)
PSpec	5.7.3	Provide Disaster Coordination Authority Interface (EM)
DFD	6	Provide Driver and Traveller Services
DFD	6.1	Provide Trip Planning Services
PSpec	6.1.1	Provide Trip Planning Information to Traveller (ISP)
PSpec	6.1.2	Confirm Traveller's Trip Plan (ISP)
PSpec	6.1.3	Manage Multimodal Service Provider Interface (ISP)
PSpec	6.1.4	Provide ISP Operator Interface for Trip Planning Parameters (ISP)
PSpec	6.1.5	Collect Service Requests and Confirmation for Archive (ISP)
PSpec	6.1.6	Manage Traveller Info Archive Data (ISP)
DFD	6.2	Provide Information Services
DFD	6.2.1	Provide Advisory and Broadcast Data
PSpec	6.2.1.1	Collect Traffic Data for Advisory Messages (ISP)
PSpec	6.2.1.2	Provide Traffic and Transit Advisory Messages (ISP)
PSpec	6.2.1.3	Collect Transit Data for Advisory Messages (ISP)
PSpec	6.2.1.4	Provide Traffic and Transit Broadcast Messages (ISP)
PSpec	6.2.1.5	Provide ISP Operator Broadcast Parameters Interface (ISP)
PSpec	6.2.1.6	Provide Transit Advisory Data On Vehicle (TRVS)
PSpec	6.2.2	Prepare and Output In-vehicle Displays (VS)
PSpec	6.2.3	Provide Transit User Advisory Interface (TRVS)
PSpec	6.2.4	Collect Business Directory Data (ISP)
PSpec	6.2.5	Provide Driver Interface (VS)
PSpec	6.2.6	Provide Business Directory Data and Reservations (ISP)

DFD	6.3	Provide Traveller Services at Kiosks
PSpec	6.3.1	Get Traveller Request (RTS)
PSpec	6.3.2	Inform Traveller (RTS)
PSpec	6.3.3	Provide Traveller Kiosk Interface (RTS)
PSpec	6.3.4	Update Traveller Display Map Data at Kiosk (RTS)
DFD	6.4	Manage Ridesharing
PSpec	6.4.1	Screen Rider Requests (ISP)
PSpec	6.4.2	Match Rider and Provider (ISP)
PSpec	6.4.3	Report Ride Match Results to Requestor (ISP)
PSpec	6.4.4	Confirm Traveller Rideshare Request (ISP)
DFD	6.5	Manage Business Directory Services
PSpec	6.5.1	Collect and Update Traveller Information (ISP)
PSpec	6.5.2	Provide Traveller Business Directory Information and Reservations (ISP)
PSpec	6.5.3	Register Business Directory Service Providers (ISP)
DFD	6.6	Provide Guidance and Trip Planning Services
PSpec	6.6.1	Provide Multimodal Route Selection (ISP)
DFD	6.6.2	Select Vehicle Route
PSpec	6.6.2.1	Calculate Vehicle Route (ISP)
PSpec	6.6.2.2	Provide Vehicle Route Calculation Data (ISP)
PSpec	6.6.2.3	Provide Route Segment Data for Other Areas (ISP)
PSpec	6.6.2.4	Update Vehicle Route Selection Map Data (ISP)
PSpec	6.6.2.5	Provide ISP Operator Route Parameters Interface (ISP)
PSpec	6.6.2.6	Calculate Vehicle Probe Data for Guidance (ISP)
PSpec	6.6.3	Update Other Routes Selection Map Data (ISP)
PSpec	6.6.4	Select Transit Route (ISP)
PSpec	6.6.5	Select Other Routes (ISP)
DFD	6.7	Provide Driver Personal Services
DFD	6.7.1	Provide Driver Personal Security
PSpec	6.7.1.1	Build Driver Personal Security Message (VS)
PSpec	6.7.1.2	Provide Driver In-vehicle Communications Function (VS)
DFD	6.7.2	Provide On-line Vehicle Guidance
DFD	6.7.2.1	Provide Vehicle Guidance
PSpec	6.7.2.1.1	Determine In-vehicle Guidance Method (VS)
PSpec	6.7.2.1.2	Provide Dynamic In-vehicle Guidance (VS)
PSpec	6.7.2.1.3	Provide Autonomous In-vehicle Guidance (VS)
PSpec	6.7.2.2	Process Vehicle Location Data (VS)
PSpec	6.7.2.3	Provide Driver Guidance Interface (VS)
PSpec	6.7.2.4	Update Vehicle Navigable Map Database (VS)
DFD	6.8	Provide Traveller Personal Services
DFD	6.8.1	Provide On-line Traveller Guidance
DFD	6.8.1.1	Provide Traveller Guidance
PSpec	6.8.1.1.1	Determine Personal Portable Device Guidance Method (PIAS)
PSpec	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance (PIAS)
PSpec	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance (PIAS)
PSpec	6.8.1.2	Provide Personal Portable Device Guidance Interface (PIAS)
PSpec	6.8.1.3	Process Personal Portable Device Location Data (PIAS)
PSpec	6.8.1.4	Update Traveller Navigable Map Database (PIAS)
PSpec	6.8.1.5	Provide Traveller Emergency Message Interface (PIAS)
DFD	6.8.2	Provide Traveller Personal Security
PSpec	6.8.2.1	Build Traveller Personal Security Message (PIAS)
PSpec	6.8.2.2	Provide Traveller Emergency Communications Function (PIAS)
DFD	6.8.3	Provide Traveller Services at Personal Devices
PSpec	6.8.3.1	Get Traveller Personal Request (PIAS)
PSpec	6.8.3.2	Provide Traveller with Personal Travel Information (PIAS)
PSpec	6.8.3.3	Provide Traveller Personal Interface (PIAS)
PSpec	6.8.3.4	Update Traveller Personal Display Map Data (PIAS)
DFD	7	Provide Electronic Payment Services
DFD	7.1	Provide Electronic Toll Payment
DFD	7.1.1	Process Electronic Toll Payment
PSpec	7.1.1.1	Read Tag Data for Tolls (TCS)
PSpec	7.1.1.10	Determine Advanced Toll Bill (TCS)
PSpec	7.1.1.11	Manage Toll Archive Data (TAS)
PSpec	7.1.1.2	Calculate Vehicle Toll (TCS)
PSpec	7.1.1.3	Manage Bad Toll Payment Data (TAS)
PSpec	7.1.1.4	Check for Advanced Tolls Payment (TCS)
PSpec	7.1.1.5	Bill Driver for Tolls (TCS)
PSpec	7.1.1.6	Collect Probe Data From Toll Transactions (TAS)
PSpec	7.1.1.7	Update Toll Price Data (TAS)
PSpec	7.1.1.8	Register for Advanced Toll Payment (TAS)

PSpec	7.1.1.9	Manage Toll Financial Processing (TAS)
PSpec	7.1.2	Produce Roadside Displays (TCS)
PSpec	7.1.3	Obtain Toll Violator Image (TCS)
PSpec	7.1.4	Provide Driver Toll Payment Interface (VS)
PSpec	7.1.5	Detect Vehicle for Tolls (TCS)
PSpec	7.1.6	Distribute Advanced Charges and Fares (ISP)
PSpec	7.1.7	Provide Payment Instrument Interface for Tolls (VS)
DFD	7.2	Provide Electronic Parking Payment
DFD	7.2.1	Process Electronic Parking Lot Payment
PSpec	7.2.1.1	Read Parking Lot Tag Data (PMS)
PSpec	7.2.1.10	Determine Advanced Charges (PMS)
PSpec	7.2.1.2	Calculate Vehicle Parking Lot Charges (PMS)
PSpec	7.2.1.3	Collect Bad Charge Payment Data (PMS)
PSpec	7.2.1.4	Check for Advanced Parking Lot Payment (PMS)
PSpec	7.2.1.5	Bill Driver for Parking Lot Charges (PMS)
PSpec	7.2.1.6	Manage Parking Lot Financial Processing (PMS)
PSpec	7.2.1.7	Update Parking Lot Data (PMS)
PSpec	7.2.1.8	Register for Advanced Parking Lot Payment (PMS)
PSpec	7.2.1.9	Manage Parking Lot Reservations (PMS)
PSpec	7.2.2	Produce Parking Lot Displays (PMS)
PSpec	7.2.3	Obtain Parking Lot Violator Image (PMS)
PSpec	7.2.4	Provide Driver Parking Lot Payment Interface (VS)
PSpec	7.2.5	Detect Vehicle for Parking Lot Payment (PMS)
PSpec	7.2.6	Distribute Advanced Tolls and Fares (ISP)
PSpec	7.2.7	Provide Payment Instrument Interface for Parking (VS)
DFD	7.3	Provide Electronic Fare Collection
DFD	7.3.1	Process Electronic Transit Fare Payment
PSpec	7.3.1.1	Register for Advanced Transit Fare Payment (TRMS)
PSpec	7.3.1.2	Determine Advanced Transit Fares (TRMS)
PSpec	7.3.1.3	Manage Transit Fare Financial Processing (TRMS)
PSpec	7.3.1.4	Check for Advanced Transit Fare Payment (TRMS)
PSpec	7.3.1.5	Bill Transit User for Transit Fare (TRMS)
PSpec	7.3.1.6	Collect Bad Transit Fare Payment Data (TRMS)
PSpec	7.3.1.7	Update Transit Fare Data (TRMS)
PSpec	7.3.2	Distribute Advanced Tolls and Parking Lot Charges (ISP)
PSpec	7.3.3	Get Transit User Image for Violation (TRMS)
PSpec	7.3.4	Provide Remote Terminal Payment Instrument Interface (RTS)
PSpec	7.3.5	Provide Transit Vehicle Payment Instrument Interface (TRVS)
DFD	7.4	Carry-out Centralized Payments Processing
DFD	7.4.1	Collect Advanced Payments
PSpec	7.4.1.1	Process Commercial Vehicle Payments (CVAS)
PSpec	7.4.1.2	Process Business Directory Services Provider Payments (ISP)
PSpec	7.4.1.3	Process Driver Map Update Payments (ISP)
PSpec	7.4.1.4	Process Traveller Map Update Payments (ISP)
PSpec	7.4.1.5	Process Transit User Other Services Payments (TRMS)
PSpec	7.4.1.6	Process Traveller Trip and Other Services Payments (ISP)
PSpec	7.4.1.7	Collect Payment Transaction Records (ISP)
PSpec	7.4.1.8	Process Traveller Rideshare Payments (ISP)
PSpec	7.4.2	Collect Price Data for ITS Use (ISP)
PSpec	7.4.3	Route Traveller Advanced Payments (ISP)
DFD	7.5	Provide Payment Instrument Interfaces
PSpec	7.5.1	Provide Vehicle Payment Instrument Interface (VS)
PSpec	7.5.2	Provide Transit User Roadside Payment Instrument Interface (RTS)
PSpec	7.5.3	Provide Personal Payment Instrument Interface (PIAS)
PSpec	7.5.4	Provide Commercial Fleet Payment Instrument Interface (FMS)
PSpec	7.5.5	Provide Traveller Kiosk Payment Instrument Interface (RTS)
DFD	8	Manage Archived Data
PSpec	8.1	Get Archive Data (ADMS)
PSpec	8.2	Manage Archive (ADMS)
PSpec	8.3	Manage Archive Data Administrator Interface (ADMS)
PSpec	8.4	Coordinate Archives (ADMS)
PSpec	8.5	Process Archived Data User System Requests (ADMS)
PSpec	8.6	Analyze Archive (ADMS)
PSpec	8.7	Process On Demand Archive Requests (ADMS)
PSpec	8.8	Prepare Government Reporting Inputs (ADMS)
PSpec	8.9	Manage Roadside Data Collection (ADMS)
DFD	9.0	Manage Traffic Enforcement
PSpec	9.1	Detect and Classify Speed Violations (RS)
PSpec	9.2	Collect and Verify Speed Violations (TMS)

PSpec	9.3	Post Speed Limit (RS)
PSpec	9.4	Set Speed Limit (TMS)
PSpec	9.5	Establish Violation Parameters (TMS)
PSpec	9.6	Detect and Classify Signal Violations (RS)
PSpec	9.7	Collect and Verify Signal Violations (TMS)