

## **APPENDIX B – MARKET PACKAGE DEFINITIONS**

Market Package	Market Package Name	Description
<b>Traffic Management Service Area</b>		
ATMS01	<b>Network Surveillance</b>	Includes traffic detectors, CCTV cameras, other surveillance equipment, supporting field equipment and fixed point to point communications to transmit the collected data back to a traffic management center.
ATMS02	<b>Probe Surveillance</b>	Provides an alternative approach for surveillance of the roadway network. Probe vehicles are tracked and position and speed information utilized to determine road network conditions such as average speed and congestion conditions.
ATMS03	<b>Surface Street Control</b>	Provides the central control and monitoring equipment, communication links and signal control equipment that support local street and/or arterial traffic management. This market package is consistent with typical urban traffic signal control systems.
ATMS04	<b>Freeway Control</b>	Provides the communications and roadside equipment to support ramp control, lane controls and interchange control for freeways. This market package is consistent with typical urban traffic freeway control systems. Also includes the capability to utilize surveillance information for detection of incidents.
ATMS05	<b>HOV Lane Management</b>	Manages HOV lanes by coordinating freeway ramp meters and connector signals with HOV lane usage signals.
ATMS06	<b>Traffic Information Dissemination</b>	Provides driver information using roadway equipment such as dynamic message signs or highway advisory radio. Information can include traffic and road conditions, closure and detour information, incident information, emergency alerts and driver advisories.
ATMS07	<b>Regional Traffic Control</b>	Sharing of traffic information and control among traffic management centers to support a regional control strategy. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions.
ATMS08	<b>Traffic Incident Management System</b>	Manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. This market package includes incident detection capabilities and coordination with other agencies. It supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel.
ATMS09	Traffic Forecast and Demand Management	Includes advanced algorithms, processing, and mass storage capabilities that support historical evaluation, real-time assessment, and forecasts of the roadway network performance.
ATMS10	<b>Electronic Toll Collection</b>	Provides toll operators with the ability to collect tolls electronically and detect and process violations.
ATMS11	<b>Emissions Monitoring and Management</b>	Monitors individual vehicle emissions and provides general air quality monitoring using distributed sensors to collect the data.
ATMS12	Virtual TMC and Smart Probe Data	Provides for special requirements of rural road systems. By distributing traffic management over a very wide area (whole state or collection of states). Each locality can access available information for assessment of road conditions. Vehicles are used as smart probes to provide information on road conditions.
ATMS13	<b>Standard Railroad Grade Crossing</b>	Manages highway traffic at highway-rail intersections (HRIs) where rail operational speeds are less than 80 mph.
ATMS14	Advanced Railroad Grade Crossing	Manages highway traffic at highway-rail intersections (HRIs) where operational speeds are greater than 80 mph. Augments Standard Railroad Grade Crossing market package with additional safety features to mitigate the risks associated with higher rail speeds.
ATMS15	<b>Railroad Operations Coordination</b>	Provides an additional level of strategic coordination between freight rail operations and traffic management centers. Could include train schedules, maintenance schedules or any other anticipated HRI closures.

Market Package	Market Package Name	Description
<b>Traffic Management Service Area (continued)</b>		
ATMS16	<b>Parking Facility Management</b>	Provides enhanced monitoring and management of parking facilities. Market package assists in the management of parking operations, coordinates with transportation authorities, and supports electronic collection of parking fees.
ATMS17	Regional Parking Management	Supports coordination between parking facilities to enable regional parking management strategies.
ATMS18	<b>Reversible Lane Management</b>	Provides for the management of reversible lane facilities and includes the field equipment, physical lane access controls, and associated control electronics.
ATMS19	<b>Speed Monitoring</b>	Monitors the speeds of vehicles traveling through a roadway system.
ATMS20	Drawbridge Management	Supports systems that manage drawbridges at rivers and canals and other multimodal crossings. Includes control devices as well as traveler information systems.
ATMS21	<b>Roadway Closure Management</b>	Closes roadways to vehicular traffic when driving conditions are unsafe, maintenance must be performed, or other situations. Market package covers general road closures applications; specific closure systems that are used at railroad grade crossings, drawbridges, reversible lanes, etc. are covered by other market packages.
<b>Emergency Management Service Area</b>		
EM01	<b>Emergency Call - Taking and Dispatch</b>	Provides basic public safety call-taking and dispatch services. Includes emergency vehicle equipment, equipment used to receive and route emergency calls, wireless communications and coordination between emergency management agencies.
EM02	<b>Emergency Routing</b>	Supports automated vehicle location and dynamic routing of emergency vehicles. Traffic information, road conditions and suggested routing information are provided to enhance emergency vehicle routing. Includes signal preemption and priority applications.
EM03	<b>Mayday Support</b>	Allows the user to initiate a request for emergency assistance and enables the emergency management subsystem to locate the user, gather information about the incident and determine the appropriate response.
EM04	<b>Roadway Service Patrols</b>	Supports the roadway service patrol vehicles that aid motorists, offering rapid response to minor incidents (flat tire, accidents, out of gas) to minimize disruption to the traffic stream. This market package monitors service patrol vehicle locations and supports vehicle dispatch.
EM05	<b>Transportation Infrastructure Protection</b>	Includes the monitoring of transportation infrastructure (e.g. bridges, tunnels and management centers) for potential threats using sensors, surveillance equipment, barriers and safeguard systems to preclude an incident, control access during and after an incident or mitigate the impact of an incident. Threats can be acts of nature, terrorist attacks or other incidents causing damage to the infrastructure.
EM06	<b>Wide-Area Alert</b>	Uses ITS driver and traveler information systems to alert the public in emergency situations such as child abductions, severe weather, civil emergencies or other situations that pose a threat to life and property.
EM07	<b>Early Warning System</b>	Monitors and detects potential, looming and actual disasters including natural, technological and man-made disasters.
EM08	<b>Disaster Response and Recovery</b>	Enhances the ability of the surface transportation system to respond to and recover from disasters. Supports coordination of emergency response plans, provides enhanced access to the scene and better information about the transportation system in the vicinity of the disaster, and maintains situation awareness.

Market Package	Market Package Name	Description
<b>Emergency Management Service Area (continued)</b>		
EM09	<b>Evacuation and Reentry Management</b>	Supports evacuation of the general public from a disaster area and manages subsequent reentry to the disaster area. This market package supports both anticipated, well-planned and orderly evacuations such as for a hurricane, as well as sudden evacuations with little or no time for preparation or public warning such as a terrorist act. Employs a number of strategies to maximize capacity along an evacuation route including coordination with transit.
EM10	<b>Disaster Traveler Information</b>	Use of ITS to provide disaster-related traveler information to the general public, including evacuation and reentry information and other information concerning the operation of the transportation system during a disaster.
<b>Maintenance and Construction Management Service Area</b>		
MC01	<b>Maintenance and Construction Vehicle and Equipment Tracking</b>	Tracks the location of maintenance and construction vehicles and other equipment to ascertain the progress of their activities.
MC02	<b>Maintenance and Construction Vehicle Maintenance</b>	Performs vehicle maintenance scheduling and manages both routine and corrective maintenance activities. Includes on-board sensors capable of automatically performing diagnostics.
MC03	<b>Road Weather Data Collection</b>	Collects current road weather conditions using data collected from environmental sensors deployed on and about the roadway.
MC04	<b>Weather Information Processing and Distribution</b>	Processes and distributes the environmental information collected from the Road Weather Data Collection market package. This market package uses the environmental data to detect environmental hazards such as icy road conditions, high winds, dense fog, etc. so system operators can make decisions on corrective actions to take.
MC05	Roadway Automated Treatment	Automatically treats a roadway section based on environmental or atmospheric conditions. Includes the sensors that detect adverse conditions, automated treatment (such as anti-icing chemicals), and driver information systems.
MC06	Winter Maintenance	Supports winter road maintenance. Monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities.
MC07	<b>Roadway Maintenance and Construction</b>	Supports numerous services for scheduled and unscheduled maintenance and construction on a roadway system or right-of-way. Environmental conditions information is also received from various weather sources to aid in scheduling maintenance and construction activities.
MC08	<b>Work Zone Management</b>	Directs activity in work zones, controlling traffic through portable dynamic message signs and informing other groups of activity for better coordination management. Also provides speed and delay information to motorists prior to the work zone.
MC09	<b>Work Zone Safety Monitoring</b>	Includes systems that improve work crew safety and reduce collisions between the motoring public and maintenance and construction vehicles. Detects vehicle intrusions in work zones and warns workers and drivers of safety hazards when encroachment occurs.
MC10	<b>Maintenance and Construction Activity Coordination</b>	Supports the dissemination of maintenance and construction activity to centers that can utilize it as part of their operations. (i.e., traffic management, transit, emergency management)
<b>Public Transportation Service Area</b>		
APTS1	<b>Transit Vehicle Tracking</b>	Monitors current transit vehicle location using an automated vehicle location system. Location data may be used to determine real time schedule adherence and update the transit system's schedule in real time.
APTS2	<b>Transit Fixed-Route Operations</b>	Performs vehicle routing and scheduling, as well as operator assignment and system monitoring for fixed-route and flexible-route transit services.

Market Package	Market Package Name	Description
<b>Public Transportation Service Area (continued)</b>		
<b>APTS3</b>	<b>Demand Response Transit Operations</b>	Performs vehicle routing and scheduling, as well as operator assignment and system monitoring for demand responsive transit services.
<b>APTS4</b>	<b>Transit Passenger and Fare Management</b>	Manages passenger loading and fare payments on transit vehicles using electronic means.
<b>APTS5</b>	<b>Transit Security</b>	Provides for the physical security of transit passengers and transit vehicle operators. Includes on-board security cameras and panic buttons.
<b>APTS6</b>	<b>Transit Maintenance</b>	Supports automatic transit maintenance scheduling and monitoring for both routine and corrective maintenance.
<b>APTS7</b>	<b>Multi-modal Coordination</b>	Establishes two way communications between multiple transit and traffic agencies to improve service coordination.
<b>APTS8</b>	<b>Transit Traveler Information</b>	Provides transit users at transit stops and on board transit vehicles with ready access to transit information. Services include stop annunciation, imminent arrival signs and real-time transit schedule displays. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this market package.
<b>Commercial Vehicle Operations Service Area</b>		
CVO01	Fleet Administration	Provides the capabilities to manage a fleet of commercial vehicles. Vehicle routing and tracking as well as notification of emergency management of any troublesome route deviations (such as a HAZMAT vehicle) are part of this market package.
CVO02	Freight Administration	Tracks the movement of cargo and monitors the cargo condition.
CVO03	Electronic Clearance	Provides for automatic clearance at roadside check facilities. Allows a good driver/vehicle/carrier to pass roadside facilities at highway speeds using transponders and dedicated short range communications to the roadside.
<b>CVO04</b>	<b>Administrative Processes</b>	Provides for electronic application, processing, fee collection, issuance and distribution of CVO credentials and tax filing.
CVO05	International Border Electronic Clearance	Provides for automated clearance at international border crossings.
CVO06	Weigh-In-Motion	Provides for high speed weigh-in-motion with or without automated vehicle identification capabilities.
CVO07	Roadside CVO Safety	Provides for automated roadside safety monitoring and reporting. Automates commercial vehicle safety inspections at the roadside check facilities.
CVO08	On-board CVO and Freight Safety & Security	Provides for on-board commercial vehicle safety monitoring and reporting as well as roadside support for reading on-board safety data via tags.
CVO09	CVO Fleet Maintenance	Supports maintenance of CVO fleet vehicles with on-board monitoring equipment and automated vehicle location capabilities.
<b>CVO10</b>	<b>HAZMAT Management</b>	Integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material and incidents.
CVO11	Roadside HAZMAT Security Detection and Mitigation	Provides the capability to detect and classify security sensitive HAZMAT on commercial vehicles using roadside sensing and imaging technology. Credentials information can be accessed to verify if the commercial driver, vehicle and carrier are permitted to transport the identified HAZMAT.
CVO12	Commercial Vehicle Driver Security Authentication	Provides the ability for Fleet and Freight Management to detect when an unauthorized commercial vehicle driver attempts to drive a vehicle based on stored identity information. If an unauthorized driver has been detected the commercial vehicle can be disabled.
CVO13	Freight Assignment Tracking	Provides for the planning and tracking of the commercial vehicle, freight equipment and the commercial vehicle driver.

Market Package	Market Package Name	Description
<b>Traveler Information Service Area</b>		
<b>ATIS1</b>	<b>Broadcast Traveler Information</b>	Collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadly disseminates this information through existing infrastructures (radio, cell phones, etc.).
<b>ATIS2</b>	<b>Interactive Traveler Information</b>	Provides tailored information in response to a traveler request. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information.
ATIS3	Autonomous Route Guidance	Using vehicle location and other information, this market package enables route planning and detailed route guidance based on static, stored information.
ATIS4	Dynamic Route Guidance	Offers advanced route planning and guidance that is responsive to current conditions.
<b>ATIS5</b>	<b>ISP Based Route Guidance</b>	Offers the user pre-trip route planning and turn-by-turn route guidance services. Routes may be based on static or real time network conditions.
ATIS6	Integrated Transportation Management/Route Guidance	Provides advanced route planning and guidance that is responsive to current conditions.
ATIS7	Yellow Pages and Reservation	Provides yellow pages and reservations services to the user.
ATIS8	Dynamic Ridesharing	Provides dynamic ridesharing/ride matching services to travelers.
ATIS9	In Vehicle Signing	Supports the distribution of traffic and travel advisory information to drivers through in-vehicle devices.
<b>Archived Data Management Service Area</b>		
<b>AD1</b>	<b>ITS Data Mart</b>	Provides a focused archive that houses data collected and owned by a single agency or other organization. Focused archive typically covers a single transportation mode and one jurisdiction.
<b>AD2</b>	<b>ITS Data Warehouse</b>	Includes all the data collection and management capabilities of the ITS Data Mart. Adds the functionality to allow collection of data from multiple agencies and data sources across modal and jurisdictional boundaries.
<b>AD3</b>	<b>ITS Virtual Data Warehouse</b>	Provides the same broad access to multimodal, multidimensional data from varied sources as in the ITS Data Warehouse Market Package, but provides this access using enhanced interoperability between physically distributed ITS archives that are each locally managed.

Note: Market packages in bold indicate those selected for by the Austin Regional ITS Architecture stakeholders for implementation in the Austin Region.