

Technical Memorandum Inland Empire Regional ITS Architecture Maintenance Modifications – June 30, 2005



Background

Development of the Inland Empire Regional ITS Architecture commenced in December 2002 and was completed in June 2003. It was developed in response to, and in compliance with the Federal Highway Administration (FHWA) / Federal Transit Administration (FTA) Final Rule / Policy on ITS Architecture and Standards Conformity, issued on January 8, 2001.

The Inland Empire Regional ITS Architecture was developed in a collaborative effort of primarily public agencies from around Riverside and San Bernardino Counties. The regional architecture development activities were directed by a steering committee made up of representatives from the San Bernardino Associated Governments (SANBAG), the Riverside County Transportation Commission (RCTC), the City of Fontana, Caltrans District 8 and FHWA. Representatives of several Inland Empire cities, counties and transit agencies participated in the process.

The Inland Empire Regional ITS Architecture was developed using Turbo Architecture 2.0, which corresponds to version 4.0 of the National ITS Architecture. Shortly after completion of the Inland Empire Regional Architecture version 5.0 of the National ITS Architecture was released, which included enhanced Emergency Management features to account for Homeland Security issues and other emergency evacuation and wide area alerts. Following the release of version 5.0 of the National ITS Architecture, Turbo Architecture version 3.0, which corresponds to version 5.0 of the National ITS Architecture, was developed and released to replace Turbo Architecture version 2.0.

Development of the Southern California Regional ITS Architecture (a.k.a. the SCAG Architecture) at the direction the Southern California Association of Governments (SCAG) prompted discussion within the Inland Empire about the need for an assessment of, and update to, the Inland Empire Regional ITS Architecture. The conclusion was that the entire Architecture did not need to be updated at this time, but the Inland Empire and the Southern California region would benefit from an upgrade of the Inland Empire Turbo Architecture database from version 2.0 to version 3.0. This would make the Inland Empire Architecture more compatible with the emerging SCAG Architecture.

The resulting architecture update, documented in this Technical Memorandum, brings the Inland Empire Regional ITS Architecture into alignment with version 5.0 of the National ITS Architecture. This update to the Inland Empire Regional ITS Architecture also converts the Turbo Architecture database from version 2.0 to version 3.0. Though some Stakeholders and Elements were added to the Inland Empire Architecture, there were no major modifications to Inland Empire Stakeholders or Elements made in the Turbo Architecture database. The primary changes dealt with adding a small number of Elements associated with the SCAG Architecture. This Memorandum documents the changes to the Turbo Architecture database, completed June 30, 2005.

Introduction

An assessment of the Inland Empire Regional ITS Architecture commenced in February, 2005, to determine what updates to the Architecture might be necessary to support the newly developing Southern California Regional ITS Architecture (a.k.a. the SCAG Architecture) being developed at the direction of the Southern California Association of Governments (SCAG). Members of the Inland Empire Regional ITS Architecture Maintenance Team (the Maintenance Team) led by the San Bernardino Associated Governments (SANBAG) and the Riverside County Transportation Commission (RCTC) engaged the services of a consultant to update the Inland Empire Turbo database and make other recommendations for regional consistency.

The Maintenance Team determined that the Inland Empire Regional ITS Architecture:

1. was developed with substantial participation from local stakeholders who are familiar with and agree with what is contained in the existing architecture,
2. is current and comprehensive since it was completed just two years ago, is an award winning architecture used as an example by the Federal Highway Administration and that it was still ample and adequate for the region, and
3. the Inland Empire Architecture Maintenance Team agreed that because of their familiarity with their own architecture, it was their desire to continue maintaining and using it rather than having SCAG maintain and manage it.

Understanding the desire of SCAG to have a regionally cohesive architecture, the Inland Empire agreed to make relatively minor modifications to their architecture to support, and be consistent with the Southern California Architecture.

The Process

The first step in the Inland Empire Architecture update was the conversion of the Turbo Architecture database from version 2.0 to version 3.0. This brought the Inland Empire Architecture into alignment with the latest version of the National ITS Architecture. Many minor details in the Inland Empire Architecture changed as a result. For example, some information flows were deleted or replaced or renamed in the updated National ITS Architecture. These detailed changes occurred prior to any other changes in the architecture related to the development of the SCAG Architecture. The minute details of the conversion are provided in **Attachment A** of this Technical Memorandum, which is taken from a "Conversion Report" produced by Turbo Architecture. Other, more pertinent architecture update information is included in the body of this Technical Memorandum.

During the update process for the Inland Empire architecture the consultant and members of the Inland Empire Maintenance Team participated in meetings with SCAG representatives to determine the appropriate response to the SCAG Architecture development for the Inland Empire Architecture. The primary mission of coordination with SCAG was to ascertain which

ITS elements from the SCAG architecture would exchange information with ITS elements from the Inland Empire Architecture, and how to depict that information exchange activity.

Subsequent to the Turbo Architecture database conversion, a small number of ITS Elements were added to the Inland Empire Regional Architecture to facilitate information exchange with the SCAG Architecture. While specific ITS elements in the SCAG Architecture serve as Subsystems in that architecture, the corresponding Elements added to the Inland Empire Architecture are defined as Terminators. Terminators define the boundary of an architecture. The National ITS Architecture Terminators represent the people, systems, and general environment that interface to ITS. The interfaces between Terminators and the subsystems and processes within the National ITS Architecture are defined, but no functional requirements are allocated to terminators.

Modifications to the Architecture

In conferring with the Southern California Association of Governments (SCAG) on their architecture development it was determined that the ITS Elements from the SCAG Architecture listed in the following table would merit consideration for inclusion in the Inland Empire Regional ITS Architecture. Also included in the table is a summary of how the SCAG Architecture ITS Elements were “accounted for” in the Inland Empire Regional Architecture.

Element Name	Element Description	Status in the Inland Empire Architecture
Arterial Traffic Data Exchange	A scheme intended for cities in close proximity to a county boundary to be able to exchange arterial traffic data / information across the county boundary.	Incorporated into the Inland Empire Architecture. Mapped to Other Emergency Management*, Other ISP*, Other Traffic Management* and Other Transit Management* from the National ITS Architecture.
Border Region Interfaces	A scheme to represent data / information exchange between the SCAG Architecture and the states bordering the SCAG region.	Though the Inland Empire Regional Architecture already contained Arizona DOT and Nevada DOT, for consistency sake, this Element was incorporated into the Inland Empire Architecture. Mapped to Other Emergency Management*, Other ISP* and Other Traffic Management* from the National ITS Architecture.

Element Name	Element Description	Status in the Inland Empire Architecture
Caltrans TMC Data Exchange	A scheme for the three Caltrans Districts in the Southern California region (Districts 7, 8 and 12) to be able to exchange data / information, as well as the potential for shared and / or back up control of ITS field devices.	Incorporated into the Inland Empire Architecture. Mapped to Other Traffic Management* from the National ITS Architecture.
Data Archive	A regional data archive for the Southern California region.	This ITS Element was already existing in the Inland Empire Architecture, and mapped to Archived Data Management Subsystem from the National ITS Architecture.
Freeway Performance Monitoring System (PeMS)	A statewide data archive primarily for Caltrans freeway data / information.	This ITS Element was already existing in the Inland Empire Architecture and mapped to the Archived Data Management Subsystem and Other Traffic Management* from the National ITS Architecture.
Regional Traveler Information Service Providers	A generic way to represent the multitude of information service providers reporting traveler information for the Southern California region.	This ITS Element was already existing in the Inland Empire Architecture and mapped to Information Service Provider Subsystem from the National ITS Architecture.

* Terminators in the National ITS Architecture

New Stakeholders

In order to accommodate data / information exchange between the ITS elements in the SCAG architecture and ITS elements in the Inland Empire architecture there were two new Stakeholders added to the Inland Empire Regional Architecture. **Attachment B** of this Tech Memo is the new list of Stakeholders for the Inland Empire Regional Architecture. Also contained in the Stakeholder list are the ITS Elements associated with each Stakeholder, as well as the National ITS Architecture entities to which the Elements are mapped. This attachment, which replaces Appendix C of the Inland Empire Regional ITS Architecture Final Report, dated June 2003 will serve as the updated Inland Empire ITS Inventory by Stakeholder.

Following are the new Stakeholders added to the Inland Empire Regional Architecture as a part of this update:

- Local Jurisdictions. Local Jurisdictions is a Stakeholder group in the modified Inland Empire Regional Architecture and includes: Caltrans D-8, Caltrans HQ, City of Corona,

City of Fontana, City of Temecula, General Public, Local Cities and Counties, Metrolink, Omnitrans, Riverside County Transportation Commission (RCTC), Riverside Transit Agency (RTA), San Bernardino Associated Governments (SANBAG) and Southern California Association of Governments (SCAG). With the exception of Caltrans HQ, all of the members of the Local Jurisdictions Stakeholder group were already a part of the Inland Empire Regional Architecture.

- Neighbor Agencies. This stakeholder is directly associated with the SCAG Regional Architecture and allows for data / information regarding traveler, traffic and emergency management information to be exchanged with states bordering the SCAG region. Similar to the Local Jurisdictions Stakeholder group, the members of this Stakeholder group were already a part of the Inland Empire Regional Architecture.

Deleted Stakeholders

The following stakeholders were deleted from the Inland Empire Regional ITS Architecture.

- Southern California Economic Partnership (SCEP): This stakeholder was a part of the original Inland Empire Regional Architecture as an information service provider (ISP) but there were no ITS Elements associated with the Stakeholder. Since there is a Stakeholder in the regional architecture called “Public/Private Information Service Providers”, this Stakeholder’s interests are already included in the ISP element which remains in the architecture.
- Public and privately held businesses: This stakeholder was originally identified because of the desire to move toward involving public and privately held businesses in the ITS element procurement and operation. However, there were no ITS elements associated with this stakeholder so they were removed from the regional architecture.

New ITS Elements Added to the Inland Empire Architecture

In order to support regional consistency with the SCAG architecture, the Inland Empire Regional ITS Architecture added and / or modified the following terminators:

- Arterial Traffic Data Exchange: The Stakeholder with which this newly added Subsystem is associated is Local Jurisdictions. This Element represents the exchange of data / information with other ITS Elements in the SCAG Architecture, as well as ITS Elements in other neighboring county architectures. The Element was mapped to the following National ITS Architecture Terminators:
 - Other Emergency Management (Terminator)
 - Other ISP (Terminator)
 - Other Traffic Management (Terminator)
 - Other Transit Management (Terminator)

The mapping allows for the exchange and coordination of information between the agencies represented in this stakeholder group and the Inland Empire region.

There were 76 additional information flows identified for this ITS Element. All of these new information flows are focused toward adding traffic control coordination and traffic information coordination as well as incident response, command, reports and incident control coordination. They also allow for transit coordination and information service provider coordination.

- Border Region Interfaces: A scheme to represent data / information exchange between the SCAG Architecture and the states bordering the SCAG region. This system is associated with the Neighbor Agencies Stakeholder, which is a Stakeholder group made up of Caltrans District 8, CHP, Arizona DOT (ADOT) and Nevada DOT (NDOT); all of which are already included in the Inland Empire Regional Architecture. This Element was mapped to the following National ITS Architecture Terminators:
 - Other Emergency Management (Terminator)
 - Other ISP (Terminator)
 - Other Traffic Management (Terminator)

The mapping allows for the exchange and coordination of information between the agencies represented in this stakeholder group and the Inland Empire region.

There were 62 information flows added for this ITS element. All of these new information flows are focused toward adding traffic control coordination and traffic information coordination as well as incident response, command, reports and incident control coordination. They also allow for information service provider coordination.

- Caltrans TMC Data Exchange: This Terminator in the Inland Empire Regional Architecture is directly associated with the SCAG Regional Architecture and allows for data / information to be exchanged among the three Caltrans Districts within the SCAG region. The Element was mapped to only one National ITS Architecture Terminator:
 - Other Traffic Management (Terminator)

The mapping allows for the exchange and coordination of data / information among the various Caltrans Districts, including District 8 in the Inland Empire.

There were 16 information flows added for this ITS element. These new information flows will exchange only two types of information: traffic control coordination and traffic control coordination.

Market Packages

Market Packages represent slices of the National ITS Architecture that address specific services like surface street control. A Market Package collects together several different subsystems, equipment packages, terminators, and architecture flows that provide a particular ITS service. With the addition of new ITS Elements in the region there have been some modifications to the existing Market Packages:

- ATMS07 – Regional Traffic Control: This Market Package was present in the Inland Empire Regional Architecture and was modified to include the Arterial Traffic Data Exchange and Border Region Interfaces Elements as well as Caltrans TMC Data Exchange.

Although this Market Package provides for the sharing of traffic information and control among traffic management centers to support a regional control strategy; as terminators, from an architecture perspective, the Inland Empire will share coordination information only, and not control. Once the system is better defined by a project proposal, the Inland Empire Regional Architecture can be modified to reflect the proposed functionality of the system.

This Market Package advances the Surface Street Control and Freeway Control Market Packages by adding the communications links and integrated control strategies that enable integrated inter-jurisdictional traffic control. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Surface Street Control and Freeway Control Market Packages and adds hardware, software, and fixed-point to fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied traffic management centers. Several levels of coordination are supported from sharing of information through sharing of control between traffic management centers.

- ATMS08 – Traffic Incident Management System: This Market Package was present in the Inland Empire Regional Architecture and was modified to include the Arterial Traffic Data Exchange and Border Region Interface Elements.

This Market Package allows for sharing of data for managing both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. Although all elements of this package may not be utilized, the Market Package includes capabilities for incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this Market Package to detect and verify incidents and implement an appropriate response. This Market Package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between center subsystems. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination Market Package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information Market Packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The

coordination can also extend to tow trucks and other allied response agencies and field service personnel.

- APTS7 – Multi-modal Coordination: This Market Package was present in the Inland Empire Regional Architecture and was modified to include the Municipal and small transit agencies vehicles Element.

This Market Package establishes two way communications between multiple transit and traffic agencies to improve service coordination. Multimodal coordination between transit agencies can increase traveler convenience at transit transfer points and clusters (a collection of stops, stations, or terminals where transfers can be made conveniently) and also improve operating efficiency. Transit transfer information is shared between Multimodal Transportation Service Providers, Transit Agencies, and ISPs. Coordination between traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network. More limited local coordination between the transit vehicle and the individual intersection for signal priority is also supported by this package.

- ATIS1 – Broadcast Traveler Information: This Market Package was present in the Inland Empire Regional Architecture and was modified to include Arterial Traffic Data Exchange and Border Region Interfaces.

This Market Package 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 and low cost user equipment (e.g., FM subcarrier, cellular data broadcast). The information may be provided directly to travelers or provided to merchants and other traveler service providers so that they can better inform their customers of travel conditions. Different from the Market Package ATMS6 - Traffic Information Dissemination, which provides localized HAR and DMS information capabilities, ATIS1 provides a wide area digital broadcast service. Successful deployment of this Market Package relies on availability of real-time traveler information from roadway instrumentation, probe vehicles or other sources.

Attachment C is the updated listing of Market Packages for the Inland Empire Regional ITS Architecture. It lists the Market Packages along with the respective associated Stakeholders and Elements from the Inland Empire Architecture.

Operational Concepts for New ITS Elements

Operational Concepts in the Inland Empire Regional Architecture are based on, and organized by, Stakeholders, or groupings of Stakeholders. The impacts to the Operational Concepts with the addition of the new ITS Elements are fairly minimal. The primary intent of the newly added Elements is information sharing and coordination, not operational control nor active management of Inland Empire ITS Elements. Additionally, the existing Operational Concepts already cover the newly added Stakeholders. Therefore, the development of, or revisions to,

the Operational Concepts will be deferred for this update to the Inland Empire Regional Architecture.

Project Sequencing

The new Elements added to the Inland Empire Architecture are Terminators – meaning they are on the boundaries (or outside) of the Inland Empire Regional Architecture. They involve Inland Empire Stakeholders, but will most likely not be initiated or led by Inland Empire Stakeholders. Therefore, no new specific projects were developed and added to the Inland Empire Regional Project Sequence as a result of this update to the Architecture.

Interconnects and Information Flows

Because the newly added ITS Elements Interconnect with several other Subsystems within the Inland Empire Regional Architecture, there were many changes to the Interconnect Diagrams that were documented in Appendix F of the Inland Empire Regional ITS Architecture Final Report, dated June 2003. Also, because several information flows from the National ITS Architecture version 4.0 were either discontinued or re-named in version 5.0 of the National ITS Architecture, there were many changes to the Information Flow Diagrams that were documented in Appendix F of the Inland Empire Regional ITS Architecture Final Report, dated June 2003. Therefore, all of the Interconnect Diagrams and Information Flows Diagrams have been regenerated to accurately depict the newly updated Inland Empire Regional Architecture. For consistency sake, those diagrams will continue to be referred to as **Appendix F** for this Technical Memorandum. The Appendix is rather lengthy and the electronic file is rather large, so it will be provided to the Inland Empire Stakeholders under separate cover and as a separate electronic file.

Maintenance Plan

The Maintenance Plan for the region is adequate and no modifications were made.

Functional Requirements and Standards

The new Elements added to the Inland Empire Architecture are Terminators. Functional Requirements are not assigned to Terminators. Therefore, there were no new Functional Requirements added to the Inland Empire Regional Architecture.

ITS Standards are based on Information Flows from the National ITS Architecture. Although the changes in information flows have had no significant impact to the Inland Empire Regional Architecture, many of the information flows names have changed. Therefore, a new ITS Standards Report from Turbo Architecture is included as **Attachment D** to this Technical Memorandum to keep the appropriate ITS Standards for the Inland Empire in alignment with this update to the Inland Empire Architecture.

Next Steps

The maintenance plan for the Inland Empire Regional Architecture requires that the architecture be reviewed periodically and any modifications be made consistent with the planning process in the region.

While the Inland Empire Architecture currently has emergency management elements and services included in this architecture, there were no significant changes in the area of Emergency Management with this maintenance cycle of the regional architecture. It is recommended that future maintenance updates include coordination with emergency management stakeholders and integration of transportation information to more fully respond to the enhanced Emergency Management features of version 5.0 of the National ITS Architecture. The following areas should be considered for more robust inclusion in future versions of the Inland Empire Regional ITS Architecture:

1. Enhancement of Security Coverage

The most significant Version 5.0 enhancement is the improvement of the coverage of transportation security in the National ITS Architecture. These improvements include updates to the physical architecture, Market Packages, logical architecture, and supporting documentation. Using ITS to Enhance Transportation Security is addressed in the following areas: Transit, Rail, Freight and Commercial Vehicle, HAZMAT, Wide Area Alerts, Transportation Infrastructure, and Disaster Response and Evacuation. In addition, guidance is now offered on ways in which ITS can be made more secure. A new security document was created to define and present aspects to ITS-related surface transportation security and their applicability to the National ITS Architecture. It provides context and guidance for using the security-related parts of the National ITS Architecture when developing regional and project ITS architectures.

2. New Disaster Response and Evacuation User Service

Disaster Response and Evacuation was added as the 33rd user service to the architecture. The new user service supports the activities and responsibilities for responding to and recovery efforts for a major disaster. It also supports evacuation and reentry activities. The inclusion of the new user service required additions to both the logical and physical architecture, the introduction of several new Market and Equipment Packages, and updating supporting architecture documentation.

3. New Security Monitoring Subsystem

A new Security Monitoring Subsystem was added that includes surveillance and sensor equipment used to provide enhanced security and safety for transportation facilities or infrastructure.

An assessment of entire Inland Empire Architecture should be performed in advance of the next update to the Regional Transportation Plan (RTP). If it is determined that an update to the Architecture is needed, it should be performed such that the updated Architecture can be used as an input to the RTP.

ATTACHMENT A Conversion Summaries



The following tables represent modifications made when converting the Turbo Architecture files from version 2.0 to version 3.0. These Tables are outputs from Turbo Architecture that document the minute details of the conversion.

Turbo and National ITS Architecture Program Version Detail.

Group Label	Label	Content
Original File Information	Original File	"C:\Inland Empire Final Submittal.zip\Inland Empire Final Submittal.tbo"
Original File Information	Turbo Architecture	"2.0.0 - 4/8/2002 6:53:47 PM"
Original File Information	Physical Architecture	"4.0.0 - 3/15/2002 1:55:56 PM"
Original File Information	Market Packages	"4.0.0 - 3/15/2002 1:55:49 PM"
Original File Information	SDOMAP	"4.0.0 - 3/29/2002 11:24:14 AM"
Converted File Information	Converted File	"C:\Inland Empire ITS Arch\Inland Empire 3.0.tbo"
Converted File Information	Turbo Architecture	"3.0.14 - 3/19/2004 11:24:16 AM"
Converted File Information	Physical Architecture	"5.0.0 - 10/9/2003 10:06:55 AM"
Converted File Information	Market Packages	"5.0.0 - 10/9/2003 10:06:49 AM"
Converted File Information	SDOMAP	"5.0.1 - 2/17/2004 10:50:37 PM"
Architectures Converted	Regional Architecture	"Inland Empire"

Discontinued Flows

During the conversion there were numerous information flows from Turbo 2.0 that were discontinued. Typically, these flows were duplicates of flows already existing or flows that were added with Turbo 3.0.

Source Element	Destination Element	Flow Name	Flow Kind
Caltrans D-8 TMC	CHP CAD System	"incident information request**"	"Discontinued"
Caltrans D-8 TMC	Temecula TOC	"request for road network conditions**"	"Discontinued"
CHP CAD System	CHP Vehicles	"incident command information**"	"Discontinued"
CHP CAD System	Tow Trucks (FSP)	"incident command information**"	"Discontinued"
CHP Vehicles	CHP CAD System	"incident command request**"	"Discontinued"
Corona TMC	Caltrans D-8 Signal Ops	"request for road network conditions**"	"Discontinued"
Corona TMC	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"

Source Element	Destination Element	Flow Name	Flow Kind
Corona TMC	Local City and County Signal Systems	"request for road network conditions**"	"Discontinued"
Fontana Emergency Vehicles	Fontana Police Dispatch Center	"incident command request**"	"Discontinued"
Fontana Police Dispatch Center	Fontana Emergency Vehicles	"incident command information**"	"Discontinued"
Fontana TMC	Caltrans D-8 Signal Ops	"request for road network conditions**"	"Discontinued"
Fontana TMC	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"
Fontana TMC	Local City and County Signal Systems	"request for road network conditions**"	"Discontinued"
Fontana Traveler Information	Fontana Police Dispatch Center	"incident information request**"	"Discontinued"
Local and other Fire Departments Systems	Local and other Fire Vehicles	"incident command information**"	"Discontinued"
Local Police and Sheriff Departments Systems	Local Police and Sheriff Dept Vehicles	"incident command information**"	"Discontinued"
Local Police and Sheriff Dept Vehicles	Local Police and Sheriff Departments Systems	"incident command request**"	"Discontinued"
Media	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"
Media	CHP CAD System	"incident information request**"	"Discontinued"
Media	Fontana Police Dispatch Center	"incident information request**"	"Discontinued"
Media	Local and other Fire Departments Systems	"incident information request**"	"Discontinued"
Media	Local Police and Sheriff Departments Systems	"incident information request**"	"Discontinued"
Metrolink Operations Center	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"
Metrolink Operations Center	North Main Corona Metrolink Station Pkg Mgmt System	"transit parking lot response**"	"Discontinued"
Municipal and small transit agencies systems	Corona TMC	"request for road network conditions**"	"Discontinued"
Municipal and small transit agencies systems	North Main Corona Metrolink Station Pkg Mgmt System	"transit parking lot response**"	"Discontinued"
Regional Traveler Information Service Providers	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"
Regional Traveler Information Service Providers	Local City and County Signal Systems	"request for road network conditions**"	"Discontinued"
Riverside Freeway Service Patrol	Tow Trucks (FSP)	"incident command information**"	"Discontinued"

Source Element	Destination Element	Flow Name	Flow Kind
RTA Fixed Route	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"
RTA Fixed Route	North Main Corona Metrolink Station Pkg Mgmt System	"transit parking lot response**"	"Discontinued"
San Bernardino Freeway Service Patrol	Tow Trucks (FSP)	"incident command information**"	"Discontinued"
SunLine Fixed Route	Caltrans D-8 TMC	"request for road network conditions**"	"Discontinued"
Tow Trucks (FSP)	CHP CAD System	"incident command request**"	"Discontinued"

Mapping ITS Elements to the National ITS Architecture

As mentioned in the architecture update process description, ITS elements in the region were mapped to the National ITS Architecture entities (i.e., subsystems and terminators). Information is exchanged between entities called subsystems and terminators in the National ITS Architecture. Local ITS elements (inventory such as the Inland Empire Call Answering Center, Fontana Traveler Information, etc.) are “mapped” or identified to National ITS Architecture elements (subsystems and terminators such as Emergency Management, Traffic Management, Transit Management and Information Service Providers, etc.).

First the conversion process of the regional architecture to Turbo version 3.0 had to occur. The “Element Mapping Details” table is provided to explain the mapping modifications that occurred during the conversion process. The table is followed by a description of regional ITS elements that were either modified or added to the Inland Empire Regional ITS Architecture in order to facilitate coordination with the SCAG bordering architecture.

Element Mapping Details

Change	Element Name	Old Mapping	New Mapping	Old Kind	New Kind
Replaced	Arizona DOT (ADOT) ATMS	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	Caltrans D-8 Signal Ops	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	Caltrans D-8 TMC	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	CHP CAD System	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	Corona TMC	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	Fontana Police Dispatch Center	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	Fontana TMC	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"

Change	Element Name	Old Mapping	New Mapping	Old Kind	New Kind
Replaced	Inland Empire Call Answering Center	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	Local and other Fire Departments Systems	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	Local City and County Signal Systems	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	Local Police and Sheriff Departments Systems	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	Metrolink Operations Center	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	Municipal and small transit agencies systems	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	Nevada DOT (NDOT) ATMS	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	Omnitrans Fixed Route	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	Omnitrans Paratransit	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	Performance Monitoring System (PeMS)	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"
Replaced	Riverside Freeway Service Patrol	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	RTA Fixed Route	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	RTA Paratransit	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	San Bernardino Freeway Service Patrol	"Other EM"	"Other Emergency Management"	"Terminator"	"Terminator"
Replaced	SunLine Fixed Route	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	SunLine Paratransit	"Other TRM"	"Other Transit Management"	"Terminator"	"Terminator"
Replaced	Temecula TOC	"Other TM"	"Other Traffic Management"	"Terminator"	"Terminator"

ATTACHMENT B

Inland Empire ITS Inventory by Stakeholder



Stakeholder	Element	Status	Architecture Entity
Arizona DOT (ADOT)	Arizona DOT (ADOT) ATMS	Planned	Other Traffic Management (Terminator)
California Department of Motor Vehicles (DMV)	DMV CVO Administration (Pre-Pass)	Existing	Commercial Vehicle Administration (Subsystem)
California Highway Patrol (CHP)	CHP CAD System	Existing	Emergency Management (Subsystem)
	CHP Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
Caltrans D-8	Caltrans D-8 TMC	Existing	Archived Data Management Subsystem (Subsystem)
	Caltrans D-8 TMC	Existing	Information Service Provider (Subsystem)
	Caltrans D-8 Maintenance and Construction Mgmt System	Existing	Maintenance and Construction Management (Subsystem)
	Caltrans D-8 Roadway Maintenance Vehicles	Existing	Maintenance and Construction Vehicle (Subsystem)
	Caltrans D-8 Signal Ops Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Caltrans D-8 TMC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Caltrans D-8 Signal Ops	Existing	Traffic Management (Subsystem)
	Caltrans D-8 TMC	Existing	Traffic Management (Subsystem)
	Caltrans TMC Data Exchange	Planned	Other Traffic Management (Terminator)
Caltrans HQ	Caltrans CVO Administration (Pre-pass)	Existing	Commercial Vehicle Administration (Subsystem)
	CVO Weigh Stations (including weigh-in-motion)	Existing	Commercial Vehicle Check (Subsystem)
City of Corona	Corona TMC	Existing	Information Service Provider (Subsystem)
	Corona TMC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Corona TMC	Existing	Traffic Management (Subsystem)

Stakeholder	Element	Status	Architecture Entity
City of Fontana			
	Fontana Police Dispatch Center	Existing	Emergency Management (Subsystem)
	Fontana Emergency Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
	Fontana Traveler Information	Existing	Information Service Provider (Subsystem)
City of Fontana (continued)			
	Fontana TMC	Existing	Information Service Provider (Subsystem)
	Fontana TMC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Fontana TMC	Existing	Traffic Management (Subsystem)
City of Temecula			
	Temecula TOC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Temecula TOC	Existing	Traffic Management (Subsystem)
General Public			
	User Personal Computing Devices	Existing	Personal Information Access (Subsystem)
Local Cities and Counties			
	Local and other Fire Departments Systems	Existing	Emergency Management (Subsystem)
	Local Police and Sheriff Departments Systems	Existing	Emergency Management (Subsystem)
	Local Police and Sheriff Dept Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
	Local and other Fire Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
	Local City and County Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Local City and County Signal Systems	Existing	Traffic Management (Subsystem)
	Municipal and small transit agencies systems	Existing	Transit Management (Subsystem)
	Municipal and small transit agencies vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
Local Jurisdictions			
	Arterial Traffic Data Exchange	Planned	Other Traffic Management (Terminator)
	Arterial Traffic Data Exchange	Planned	Other Transit Management (Terminator)
	Arterial Traffic Data Exchange	Planned	Other ISP (Terminator)
	Arterial Traffic Data Exchange	Planned	Other Emergency Management (Terminator)

Stakeholder	Element	Status	Architecture Entity
Metrolink			
	Metrolink Operations Center	Existing	Transit Management (Subsystem)
	Metrolink Trains	Existing	Transit Vehicle Subsystem (Subsystem)
Neighbor Agencies			
	Border Region Interfaces	Planned	Other Emergency Management (Terminator)
	Border Region Interfaces	Planned	Other ISP (Terminator)
	Border Region Interfaces	Planned	Other Traffic Management (Terminator)
Nevada DOT (NDOT)			
	Nevada DOT (NDOT) ATMS	Existing	Other Traffic Management (Terminator)
Omnitrans			
	Omnitrans Transit Vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
	Omnitrans Fixed Route	Existing	Transit Management (Subsystem)
	Omnitrans Paratransit	Existing	Transit Management (Subsystem)
Partners for Advanced Transit and Highways (PATH)			
	Performance Monitoring System (PeMS)	Existing	Archived Data Management Subsystem (Subsystem)
	Performance Monitoring System (PeMS)	Existing	Other Traffic Management (Terminator)
Private Commercial Vehicle Owners			
	Commercial Vehicles	Existing	Commercial Vehicle Subsystem (Subsystem)
Private Tow Companies			
	Tow Trucks (FSP)	Existing	Emergency Vehicle Subsystem (Subsystem)
Public/Private Information Service Providers			
	Regional Traveler Information Service Providers	Existing	Information Service Provider (Subsystem)
Railroad Operators			
	Rail Grade Crossing Warning Eqpt.	Existing	Wayside Equipment (Terminator)

Stakeholder	Element	Status	Architecture Entity
Riverside County Transportation Commission (RCTC)			
	Riverside Freeway Service Patrol	Existing	Emergency Management (Subsystem)
	North Main Corona Metrolink Station Pkg Mgmt System	Planned	Parking Management (Subsystem)
	Riverside County Smart Call Boxes	Existing	Roadway Subsystem (Subsystem)
	Riverside County Call Boxes	Existing	Emergency Telecommunications System (Terminator)
Riverside Transit Agency (RTA)			
	RTA Fixed Route	Existing	Transit Management (Subsystem)
	RTA Paratransit	Existing	Transit Management (Subsystem)
	RTA Transit Vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
San Bernardino Associated Governments (SANBAG)			
	San Bernardino Freeway Service Patrol	Planned	Emergency Management (Subsystem)
	Inland Empire Call Answering Center	Existing	Emergency Management (Subsystem)
	San Bernardino County Smart Call Boxes	Existing	Roadway Subsystem (Subsystem)
	San Bernardino County Call Boxes	Existing	Emergency Telecommunications System (Terminator)
Southern California Association of Governments (SCAG)			
	Data Archive	Existing	Archived Data Management Subsystem (Subsystem)
SunLine Transit Agency			
	SunLine Fixed Route	Existing	Transit Management (Subsystem)
	SunLine Paratransit	Existing	Transit Management (Subsystem)
	SunLine Transit Vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
TV, radio and other media outlets (Internet, kiosks, etc.)			
	Media	Existing	Information Service Provider (Subsystem)
	Media	Existing	Media (Terminator)

ATTACHMENT C

Inland Empire Market Packages



Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
ATMS01	Network Surveillance	Caltrans D-8	Caltrans D-8 TMC
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment
		Caltrans D-8	Caltrans D-8 Signal Ops
		Caltrans D-8	Caltrans D-8 Signal Ops Roadside Equipment
		City of Corona	Corona TMC
		City of Corona	Corona TMC Roadside Equipment
		City of Fontana	Fontana TMC
		City of Fontana	Fontana TMC Roadside Equipment
		City of Temecula	Temecula TOC Roadside Equipment
		City of Temecula	Temecula TOC
		Local Cities and Counties	Local City and County Signal Systems
		Local Cities and Counties	Local City and County Roadside Equipment
		Public/Private Information Service Providers	Regional Traveler Information Service Providers
		San Bernardino Associated Governments (SANBAG)	San Brndino Cnty Smart Call Boxes

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
ATMS03 Equipment	Surface Street Control	Caltrans D-8	Caltrans D-8 Signal Ops Roadside
		Caltrans D-8	Caltrans D-8 Signal Ops
		City of Corona	Corona TMC Roadside Equipment
		City of Corona	Corona TMC
		City of Fontana	Fontana TMC
		City of Fontana	Fontana TMC Roadside Equipment
		City of Temecula	Temecula TOC Roadside Equipment
		City of Temecula	Temecula TOC
ATMS03	Surface Street Control	Local Cities and Counties	Local City and County Signal Systems
		Local Cities and Counties	Local City and County Roadside Eqpt
ATMS04	Freeway Control	Caltrans D-8	Caltrans D-8 TMC
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment
ATMS05	HOV Lane Management	Caltrans D-8	Caltrans D-8 TMC
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment
ATMS06	Traffic Information Dissemination	California Highway Patrol (CHP)	CHP CAD System
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment
		Caltrans D-8	Caltrans D-8 Maint and Const Mgmt
		Caltrans D-8	Caltrans D-8 TMC
		City of Fontana	Fontana TMC Roadside Equipment
		City of Fontana	Fontana Traveler Information
		City of Fontana	Fontana Police Dispatch Center
		City of Fontana	Fontana TMC
		Metrolink	Metrolink Operations Center
		Public/Private Information Service Providers	Regional Traveler Info Svc Providers
TV, radio and other media outlets (Internet, kiosks, etc.)	Media		

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
ATMS07	Regional Traffic Control	Caltrans D-8 City of Corona City of Fontana City of Temecula Local Jurisdictions Neighbor Agencies	Caltrans TMC Data Exchange Corona TMC Fontana TMC Temecula TOC Arterial Traffic Data Exchange Border Region Interfaces
ATMS08	Traffic Incident Management System	California Highway Patrol (CHP) California Highway Patrol (CHP)	CHP Vehicles CHP CAD System
ATMS08	Traffic Incident Management System	Caltrans D-8 Caltrans D-8 Caltrans D-8 City of Corona City of Corona	Caltrans D-8 Maint & Const Mgmt Caltrans D-8 TMC Caltrans D-8 TMC Roadside Equipment Corona TMC Corona TMC Roadside Equipment

Mkt. Pkgs. Market Package Name	Stakeholder Name	Element Name
ATMS08 Dispatch Center	Traffic Incident Management System	City of Fontana Fontana Police
		Fontana Traveler Information
		Fontana TMC Roadside Equipment
		Fontana TMC
		Temecula TOC
		Temecula TOC Roadside Equipment
		Local Police and Sheriff Dept Systems
		Local Police and Sheriff Dept Vehicles
		Local and other Fire Dept Systems
		Local and other Fire Vehicles
		Arterial Traffic Data Exchange
		Border Region Interfaces
		Tow Trucks (FSP)
		Regional Traveler Info Svc Providers
		Riverside Freeway Service Patrol
	San Bernardino Freeway Service Patrol	
	Media	
ATMS09	Traffic Forecast and Demand Management	Partners for Adv. Transit and Highways (PATH)
ATMS13	Standard Railroad Grade Crossing	Caltrans D-8
		City of Corona
ATMS13	Standard Railroad Grade Crossing	City of Fontana
		Local Cities and Counties
		Railroad Operators
ATMS16	Parking Facility Management	Riverside County Transp. Commission (RCTC)
		North Main Corona Metrolink Station Pkg Mgmt Sys tem

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
MC01	Maint and Const Vehicle & Eqpt Tracking	Caltrans D-8	Caltrans D-8 Roadway Maintenance Vehicles
		Caltrans D-8	Caltrans D-8 Maint & Const Mgmt
MC03	Road Weather Data Collection	Caltrans D-8	Caltrans D-8 TMC
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment
MC04	Weather Info Processing and Distribution	California Highway Patrol (CHP)	CHP CAD System
		Caltrans D-8	Caltrans D-8 TMC
MC10	Maintenance and Construction Activity Coordination	California Highway Patrol (CHP)	CHP CAD System
		Caltrans D-8	Caltrans D-8 Maint & Const Mgmt
		Caltrans D-8	Caltrans D-8 TMC
		City of Corona	Corona TMC
		City of Fontana	Fontana TMC
		City of Temecula	Temecula TOC
		Local Cities and Counties	Local City and County Signal Systems
		Public/Private Information Service Providers	Regional Traveler Info Svc Providers
		TV, radio and other media outlets (Internet, kiosks, etc.)	Media

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name		
APTS1 systems vehicles	Transit Vehicle Tracking	Local Cities and Counties	Municipal and small transit agencies		
		Local Cities and Counties	Municipal and small transit agencies		
		Metrolink	Metrolink Operations Center		
		Omnitrans	Omnitrans Paratransit		
		Omnitrans	Omnitrans Fixed Route		
		Omnitrans	Omnitrans Transit Vehicles		
		Riverside Transit Agency (RTA)	RTA Fixed Route		
		Riverside Transit Agency (RTA)	RTA Transit Vehicles		
		Riverside Transit Agency (RTA)	RTA Paratransit		
		SunLine Transit Agency	SunLine Fixed Route		
		SunLine Transit Agency	SunLine Paratransit		
		SunLine Transit Agency	SunLine Transit Vehicles		
		APTS2	Transit Fixed-Route Operations	Metrolink	Metrolink Operations Center
				Omnitrans	Omnitrans Fixed Route
Omnitrans	Omnitrans Transit Vehicles				
Riverside Transit Agency (RTA)	RTA Transit Vehicles				
Riverside Transit Agency (RTA)	RTA Fixed Route				
SunLine Transit Agency	SunLine Transit Vehicles				
SunLine Transit Agency	SunLine Fixed Route				

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name		
APTS3 vehicles systems	Demand Response Transit Operations	Local Cities and Counties	Municipal and small transit agencies		
		Local Cities and Counties	Municipal and small transit agencies		
		Omnitrans	Omnitrans Transit Vehicles		
		Omnitrans	Omnitrans Paratransit		
		Riverside Transit Agency (RTA)	RTA Transit Vehicles		
		Riverside Transit Agency (RTA)	RTA Paratransit		
		SunLine Transit Agency	SunLine Transit Vehicles		
		SunLine Transit Agency	SunLine Paratransit		
		APTS4 vehicles systems	Transit Passenger and Fare Management	Local Cities and Counties	Municipal and small transit agencies
				Local Cities and Counties	Municipal and small transit agencies
Omnitrans	Omnitrans Transit Vehicles				
Omnitrans	Omnitrans Fixed Route				
Omnitrans	Omnitrans Paratransit				
Riverside Transit Agency (RTA)	RTA Paratransit				
Riverside Transit Agency (RTA)	RTA Transit Vehicles				
Riverside Transit Agency (RTA)	RTA Fixed Route				
SunLine Transit Agency	SunLine Fixed Route				
SunLine Transit Agency	SunLine Paratransit				
SunLine Transit Agency	SunLine Transit Vehicles				

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
APTS5	Transit Security	Local Cities and Counties	Local Police and Sheriff Dept Systems
		Metrolink	Metrolink Operations Center
		Omnitrans	Omnitrans Transit Vehicles
APTS5	Transit Security	Omnitrans	Omnitrans Fixed Route
		Riverside Transit Agency (RTA)	RTA Transit Vehicles
		Riverside Transit Agency (RTA)	RTA Fixed Route
		SunLine Transit Agency	SunLine Transit Vehicles
		SunLine Transit Agency	SunLine Fixed Route
APTS6	Transit Maintenance	Metrolink	Metrolink Operations Center
		Omnitrans	Omnitrans Fixed Route
		Omnitrans	Omnitrans Transit Vehicles
		Riverside Transit Agency (RTA)	RTA Fixed Route
		Riverside Transit Agency (RTA)	RTA Transit Vehicles
		SunLine Transit Agency	SunLine Fixed Route
		SunLine Transit Agency	SunLine Transit Vehicles

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name		
APTS8	Transit Traveler Information	General Public	User Personal Computing Devices		
		Metrolink	Metrolink Operations Center		
		Omnitrans	Omnitrans Transit Vehicles		
		Omnitrans	Omnitrans Fixed Route		
		Public/Private Information Service Providers	Regional Traveler Info Svc Providers		
		Riverside Transit Agency (RTA)	RTA Fixed Route		
		Riverside Transit Agency (RTA)	RTA Transit Vehicles		
		SunLine Transit Agency	SunLine Fixed Route		
		SunLine Transit Agency	SunLine Transit Vehicles		
		ATIS1	Broadcast Traveler Information	California Highway Patrol (CHP)	CHP CAD System
				Caltrans D-8	Caltrans D-8 Maint & Const Mgmt
				Caltrans D-8	Caltrans D-8 TMC
				City of Fontana	Fontana Traveler Information
City of Fontana	Fontana TMC				
General Public	User Personal Computing Devices				
Local Cities and Counties	Local Police and Sheriff Dept Systems				
Local Jurisdictions	Arterial Traffic Data Exchange				
Metrolink	Metrolink Operations Center				
Neighbor Agencies	Border Region Interfaces				
Public/Private Information Service Providers	Regional Traveler Info Svc Providers				
Riverside County Transp. Commission (RCTC) Pkg Mgmt.	North Main Corona Metrolink Station				
TV, radio and other media outlets	Media				

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
CVO03	Electronic Clearance	Caltrans HQ	Caltrans CVO Administration (Pre-pass)
		Caltrans HQ	CVO Weigh Stations (weigh-in-motion)
		Private Commercial Vehicle Owners	Commercial Vehicles
CVO04	CV Administrative Processes	Caltrans HQ	Caltrans CVO Administration (Pre-pass)
CVO06	Weigh-In-Motion	Caltrans HQ	CVO Weigh Stations (weigh-in-motion)
		Private Commercial Vehicle Owners	Commercial Vehicles
EM01	Emergency Call-Taking and Dispatch	California Highway Patrol (CHP)	CHP Vehicles
		California Highway Patrol (CHP)	CHP CAD System
		Caltrans D-8	Caltrans D-8 TMC
		City of Fontana	Fontana Police Dispatch Center
		City of Fontana	Fontana Emergency Vehicles
		Local Cities and Counties	Local Police and Sheriff Dept Systems
		Local Cities and Counties	Local Police and Sheriff Dept Vehicles
		Local Cities and Counties	Local and other Fire Dept Systems
		Local Cities and Counties	Local and other Fire Vehicles
		Private Tow Companies	Tow Trucks (FSP)
Riverside County Transportation Commission (RCTC)	Riverside Freeway Svc Patrol		
San Bernardino Associated Governments (SANBAG)	San Bernardino Freeway Svc Patrol		

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name
EM02	Emergency Routing	California Highway Patrol (CHP)	CHP Vehicles
		California Highway Patrol (CHP)	CHP CAD System
		Caltrans D-8	Caltrans D-8 Signal Ops
		Caltrans D-8	Caltrans D-8 Signal Ops Roadside Eqpt
		City of Corona	Corona TMC
		City of Corona	Corona TMC Roadside Equipment
		City of Fontana	Fontana TMC Roadside Equipment
		City of Fontana	Fontana Police Dispatch Center
		City of Fontana	Fontana TMC
		City of Fontana	Fontana Emergency Vehicles
		City of Temecula	Temecula TOC
		City of Temecula	Temecula TOC Roadside Equipment
		EM02	Emergency Routing
Local Cities and Counties	Local Police and Sheriff Dept Vehicles		
Local Cities and Counties	Local and other Fire Dept Systems		
Local Cities and Counties	Local and other Fire Vehicles		
Local Cities and Counties	Local City and County Signal Systems		
Local Cities and Counties	Local City and County Roadside Eqpt		
EM04	Roadway Service Patrols		
		Private Tow Companies	Tow Trucks (FSP)

Mkt. Pkgs.	Market Package Name	Stakeholder Name	Element Name	
AD1	ITS Data Mart	California Highway Patrol (CHP)	CHP CAD System	
		Caltrans D-8	Caltrans D-8 TMC	
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment	
		Caltrans HQ	Caltrans CVO Administration (Pre-pass)	
		Local Cities and Counties	Municipal and small transit agencies	
		systems		
			Metrolink	Metrolink Operations Center
			Omnitrans	Omnitrans Paratransit
			Omnitrans	Omnitrans Fixed Route
		Pkg Mgmt	Riverside County Transp. Commission (RCTC)	North Main Corona Metrolink Station
			Riverside Transit Agency (RTA)	RTA Paratransit
			Riverside Transit Agency (RTA)	RTA Fixed Route
			San Bernardino Assoc. Governments (SANBAG)	San Brndno County Smart Call Boxes
			San Bernardino Assoc. Governments (SANBAG)	San Brndno Freeway Service Patrol
			Southern California Association of Governments (SCAG)	Data Archive
	SunLine Transit Agency	SunLine Paratransit		
	SunLine Transit Agency	SunLine Fixed Route		
AD2	ITS Data Warehouse	California Highway Patrol (CHP)	CHP CAD System	
		Caltrans D-8	Caltrans D-8 TMC	
		Caltrans D-8	Caltrans D-8 TMC Roadside Equipment	
		Southern California Association of Governments	Data Archive (SCAG)	

ATTACHMENT D
Inland Empire ITS Standards

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