Inland Empire Regional Intelligent Transportation Systems (ITS) Architecture

June 2003
What is ITS?

Intelligent Transportation Systems

Use electronics, communications, and computers in an integrated manner to improve the efficiency and safety of roadways.

Offers non-traditional solutions to transportation problems and provides an alternative to new infrastructure.
Examples: ITS Categories

- Roadway Mgmt
- Traveler info
- Rural Systems
- Emergency Mgmt
- Electronic Tolls
- Transit Systems
- Goods Movement
What is a Regional ITS Architecture?

Provides a structured framework for systems to communicate.

Helps to provide more ITS services across the region.

Assists in the development of cooperative agreements.
What does a Regional ITS Architecture include?

- Description of the Region
- List of Stakeholders
- Current and Future Transportation Systems
- Information Exchange Needs
- Agency Roles & Responsibilities
- System Functions
- Applicable Standards
- List of Projects to Achieve Goals
- Needed Agreements
Process for Regional ITS Architecture Development

**STEP #1: GET STARTED**
- Need
- Boundary Stakeholders
- Champions
- Stakeholders

**STEP #2: GATHER DATA**
- Inventory Systems
- Needs and Services
- Operational Concept
- Functional Requirements

**STEP #3: DEFINE INTERFACES**
- Interconnects
- Information Flows

**STEP #4: IMPLEMENTATION**
- Project Sequencing
- ITS Standards
- List of Agency Agreements

**STEP #5: USE THE ARCHITECTURE**

**STEP #6: MAINTAIN THE ARCHITECTURE**

- From National ITS Architecture Guidance Document

Iterative Process
Why develop a Regional ITS Architecture?

- To define integration opportunities
- To provide for information sharing
- To efficiently structure implementations
- To prepare for future expansion
- To assist in estimating/leveraging funding
- To deploy consistent projects/systems
- To comply with Federal rule
Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Public/Private Agencies that own/operate transportation systems or have an interest in regional transportation issues
Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Collection of Transportation Systems for which there is an opportunity for integration
Examples of System Inventory Data

- Traffic Management
- Transit Management
- Traveler Information
- Public Safety
- Roadway Maintenance
Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

List of existing regional transportation problems and potential future challenges
Example of Needs met by ITS

- Needs are a Description of the Region’s Transportation Problems
  - May be general needs (e.g. reduce congestion)
  - May be specific (e.g. provide up to date weather information to travelers)
Things that can be done to improve the efficiency, safety, and convenience of the region’s transportation system
Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Definition of each stakeholder’s role in providing ITS services
Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Tasks or activities performed by each system in the region
Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Description of which systems need to be connected to each other and what information should be exchanged to meet needs
Plan History and Timeline

- Funding Became Available from City of Fontana
- Project Performed by Iteris, Inc.
- Project Advisory Committee Oversaw Efforts
- Began January 2003 / Completed June 2003
- Conducted 5 Workshops & Numerous Individual Meetings
Geographical Boundary of our Regional ITS Architecture
Architecture Process

Inventory

Needs

Stakeholder Input

Services Provided by ITS to Address Needs

Roles & Responsibilities

Functions

System Interfaces and Info Flow
Use of Regional Architecture

- **In Planning**
  - To align projects with Federal funding requirements

- **In Design**
  - To provide technical guidelines, functions and standards for ITS projects to follow

- **In Deployment**
  - To ensure the ability of data exchange and system integration
Web Site URL

www.iteris.com/inlandempire-its
Next Steps

- Circulate the Plan to Stakeholders
- Establish Update/Maintenance Process
- Work with Caltrans/FHWA on Funding Review
- Provide Input to SCAG Southern California Architecture Plan
- Coordinate with Statewide Architecture Process
Inland Empire Regional Intelligent Transportation Systems (ITS) Architecture