



Central Coast Architecture Implementation “User Guide”



SITUATION

An Agency has an ITS Project that it is responsible for implementing. Therefore, it is the implementing Agency’s job to carry-out/complete the following activities:

- Add ITS Project to its respective CCITS Regional Architecture (RA)
- Prepare a Systems Engineering Review Form (SERF)

If there are multiple Agencies involved, the implementing Agency should coordinate its efforts, responses, activities, etc. with the Project Owning Agency and/or Project Developing Agency (as necessary with a different Agency and/or separate Department/Division within the same Agency).

ADD ITS PROJECT TO THE CCITS REGIONAL ARCHITECTURE (RA)

The respective CCITS Regional Architecture (RA) needs to be updated with the “new” ITS Project’s details. That is, the respective MPO-specific Turbo Architecture database needs to be updated regardless if the ITS Project being added is a “new” infrastructure project or just adding “new” system functionality. The step-by-step procedures to update the MPO-specific Turbo Architecture database can be found within each Agency’s CCITS Architecture Maintenance Plan.

SYSTEMS ENGINEERING REVIEW FORM (SERF)

A Systems Engineering Review Form (SERF) needs to be filled-out for all ITS Projects. For all major ITS Projects, this completed form needs to be submitted to FHWA for review and approval prior to Phase 1 Professional Engineer (PE) authorization. These items need to be addressed (to the degree possible) at Field Review Stage and acknowledge commitment to address during System Design in the early stages of the Systems Engineering (SE) process.

1. Identification of Portions of the CCITS Regional Architecture being Implemented

Identify which Market Packages, Physical Subsystems, System Interconnects, and Information Flows are being completed as part of the ITS Project and how these pieces are part of the CCITS Regional Architecture (RA).

2. Identification of Participating Agencies Roles and Responsibilities (Concept-of-Operations)

For the Market Packages to be implemented, define the high-level operations of the system, including where the system will be used, functions of the system capabilities, performance parameters, the life-cycle of the system, and who will operate and maintain the system. Establish requirements or agreements on information sharing and traffic device control responsibilities. Good starting points for discussion include the CCITS RA’s Operational Concepts.



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3. Requirements Definitions

Based on the Concept-of-Operations in Step #2, define the “what” and not “how” of the system. During early stages of the SE process, these will be broken down into detailed requirements for eventual Detailed System Design. The applicable high-level Functional Requirements from the CCITS RA are a good starting point for discussion. A review of the requirements by the Project Stakeholders is recommended.

4. Analysis of Alternative System Configurations and Technology Options to meet Requirements

The analysis of system alternatives should outline the strengths and weaknesses, technical feasibility, institutional compatibility, and life-cycle costs of each alternative. The Project Stakeholders should have input in choosing the preferred solution.

5. Procurement Options

Some procurement (contracting) options to consider include: Consultant Design/Low-Bid Contractor, Systems Manager, Systems Integrator, Task Order, and Design/Build. Deciding on the best procurement option should consider the level of Agency participation, compatibility with existing procurement methods, role of System Integrator, and life-cycle costs.

6. Identification of Applicable ITS Standards and Testing Procedures

Include documentation on which ITS Standards will be incorporated into the System Design and justification for any applicable ITS Standards not incorporated. The Standards Report from the CCITS RA is a good starting point for discussion.

7. Procedures and Resources Necessary for Operations and Management of the System

In addition to the Concept-of-Operations in Step #2, document any internal policies or procedures necessary to recognize and incorporate the new system into the Agency(ies) current operations and decision processes. Resources necessary to support continued operations, including staffing and training must also be recognized early and be provided. Such resources must also be provided to support necessary maintenance and upkeep to ensure continued system viability.