

Systems Engineering Analysis Report

**[Title of Project and Project Number]**

Date: [Month Day, Year]

Prepared by: [Name, Job Title]

**Note:** The following sections meet the minimum requirements of information to be included in a project Systems Engineering Analysis according to [23 CFR 940.11](https://www.ecfr.gov/cgi-bin/text-idx?SID=6198a88689709f512511c07d83ab1b45&mc=true&node=se23.1.940_111&rgn=div8). **Delete the notes and explanation paragraphs that are throughout this document before submittal.**

# Project Description

*Explain the scope of the project.*

# Purpose

*Describe the needs and requirements the project is filling and the goals of the project.*

# Compliance with Regional Architecture

*This section identifies objectives of the regional ITS architecture being implemented. Discuss how the project will coincide with these goals and objectives. For example, the installation of a CCTV system could fit under an objective of Real Time Travel Info. If there is not a regional architecture then it should be compared to the national architecture.*

# Participating Agency Roles and Responsibilities

*List all of the agencies who are involved as stakeholders and list/explain their roles and responsibilities with regards to the implementation and operation of the ITS system. Note: This does not have to be done in the format of a table. An example for a camera installation project is shown in italics below.*

Table 1: Agency/Stakeholder Roles and Responsibilities

|  |  |
| --- | --- |
| **Agency/Stakeholder** | **List of Roles and Responsibilities** |
| *MoDOT* | * *Lead agency in the design, construction, and operation of this project.*
* *Maintain the ITS system.*
 |
| *MoDOT Gateway Guide TMC* | * *Perform incident verification through video surveillance.*
 |

# Requirements Definitions

*This section goes through the necessary systems or that will be needed for the success of the project. In terms of the regional ITS architectures, these are subsystems, functional areas, and requirements. An example for a camera installation project is shown in italics below.*

Table 2: Functional Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **Stakeholder** | **Subsystem/Element** | **Functional Area** | **Functional Requirements** |
| *MoDOT* | *Roadway - CCTV* | *Roadway Basic Surveillance* | * *The field element shall collect, process, and send traffic images to the center for further analysis and distribution.*
* *The field element shall return CCTV system operational status to the controlling center.*
* *The field element shall return CCTV system fault data to the controlling center for repair.*
 |
|  |  |  |  |

# Analysis of Alternative System Configuration

*Discuss the other system configurations and technology options available and explain why these were not chosen.*

# Procurement Options

*Describe how the project procurement will be handled, such as construction contract or RFP. If there are consultants, was it done by competitive bid, were separate consultants hired for the engineering work, etc.*

# Applicable ITS Standards

*This defines how systems, products and components can connect and exchange information. List all of the applicable standards and what application area they are associated with. A list of possible standards can be found in the EPG* [*Table 910.4.5.3 Program Area Standards*](http://epg.modot.org/index.php/910.4_ITS_Achitecture#Table_910.4.5.3_Program_Area_Standards). *Standards are also included in the regional ITS architectures.*

# System Operations and Maintenance Plan

*This is a description of how the system will be run and any maintenance that will occur as a result of the new system. Include anticipated maintenance costs and schedule and expected life of the system. This section can also be used with asset management practices.*