Typical projects that may use this form include the following: Roadway Weather Information System (RWIS), Roadgrip Sensor System, various surveillance or control systems that could functionally be integrated into a FMS.

Check all that Apply:

Surveillance or control systems (i.e. coordinated Traffic Signal System) that could functionally be integrated into a FMS.

Highway Rail Intersection (HRI) warning system

Emergency vehicle preemption system

Parking Management System.

RWIS

Roadgrip Sensor System

Other

If any of the items listed below apply, you cannot use this form and should contact **ODOT Office of Traffic Operations**.

* Signal projects that require the integration of signal systems with FMS or RWIS.
* An ITS systems that involves multiple political jurisdictions.
* An ITS project that involves interagency systems.

Note: One or more of the above boxes must be filled in. If you are doing only a Signal System Interconnect Architecture, indicate on the data flow diagram (titled 2. ITS Architecture/Systems Engineering) which of the data flows will be used.

|  |  |
| --- | --- |
| **This form Completed by:** | |
| Name:  Agency:  Title: | Phone:  Email:  Date: |
| **Reviewed by:** | |
| Name:  Agency:  Title: | Phone:  Email:  Date: |
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| **Reviewed by:** | |
| Name:  Agency:  Title: | Phone:  Email:  Date: |

1. **Scope of work**
   * PID:
   * Location: :
   * Project Description (from ELLIS or other sources):
   * Description of the ITS work:
   * Project Background (Summary of Purpose and Need):
2. **ITS Architecture/Systems Engineering:***(Indicate on the drawing below which data flows will be implemented by this project.)*

Local Agency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_...

Traffic Signal System Field Equipment

Local Agency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_...

Traffic Control Center

Police/Sheriff: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_...

Emergency Vehicles (Police/Sheriff)

Railroad Operator

Railroad Wayside Equipment

Local Agency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_...

Traffic Control Center\_Personnel

Traveler

Pedestrians

Railroad Operator

Railroad Operations Center

Fire/Rescue/EMS: \_\_\_\_\_\_\_\_\_\_\_\_\_...

Emergency Vehicles

(Fire/Rescue/EMS)

hri status

intersection blockage notification

request for right-of-way

signal control status

traffic flow

traffic images

hri control data

hri request

signal control data

traffic sensor control

video surveillance control

local signal preemption request

hri operational status

intersection blockage notification

arriving train information

track status

traffic operator data

traffic operator inputs

crossing permission

crossing call

hri advisories

local signal preemption request

**Instructions for using the data flow diagram**:

1. At the top of the appropriate box, fill in the names(s) of the agency responsible for the corresponding function, system, equipment or reasurce. (i.e. Local\_Agency: Your Entry Here ).

2. Review Data Flows, and mark next to each flow name with one of the following descriptors:  
 (E) Existing,  
 (P) Planned for this project,  
 (F) Future Project,  
 (X) Not Planned.

3. Definitions of each ITS data flow on the above diagram are provided below.

**Data Flow Definitions:**

*Crossing Call*: Direct Pedestrian request to cross the roadway. This may be an overt (e.g., push button) request from a pedestrian or the physical presence of a pedestrian that can be detected by sensors or surveillance systems.

*Crossing Permission*: Signal to pedestrians indicating permission to cross roadway.

*Local Signal Preemption Request*: Direct control signal or message to a signalized intersection that results in preemption of the current control plan and grants right-of-way to the requesting vehicle.

*Request For Right-Of-Way*: Forwarded request from signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other source for right-of-way.

*Signal Control Data*: Information used to configure and control traffic signal systems.

*Signal Control Status*: Status of surface street signal controls including operating condition and current operational state.

*Traffic Flow*: Raw and/or processed traffic detector data which allows derivation of traffic flow variables (e.g., speed, volume, and density measures) and associated information (e.g., congestion, potential incidents). This flow includes the traffic data and the operational status of the traffic detectors.

*Traffic Images*: High fidelity, real-time traffic images suitable for surveillance monitoring by the operator or for use in machine vision applications. This flow includes the images and the operational status of the surveillance system.

*Traffic Operator Data*: Presentation of traffic operations data to the operator including traffic conditions, current operating status of traffic control equipment, maintenance activity status, incident status, and other information. This data keeps the operator apprised of current road network status, provides feedback to the operator as traffic control actions are implemented, and supports review of historical data and preparation for future traffic operations activities.

*Traffic Operator Inputs*: Traffic operations requests for information, configuration changes, commands to adjust current traffic control strategies (e.g., adjust signal timing plans, change Dynamic Message Sign (DMS) messages), and other traffic operations data entry.

*Traffic Sensor Control*: Information used to configure and control traffic sensor systems.

*Video Surveillance Control*: Information used to configure and control video surveillance systems.

*Intersection Blockage Notification*: Notification that a highway-rail intersection is obstructed and supporting information.

*HRI Advisories*: Notification of Highway-Rail Intersection equipment failure, intersection blockage, or other condition requiring attention, and maintenance activities at or near highway rail intersections.

*HRI Control Data*: Data required for HRI information transmitted at railroad grade crossings and within railroad operations.

*HRI Operational Status*: Status of the highway-rail grade crossing equipment including both the current state or mode of operation and the current equipment condition.

*HRI Request*: A request for highway-rail intersection status or a specific control request intended to modify HRI operation.

*HRI Status*: Direct Status of the highway-rail intersection equipment including both the current state or mode of operation and the current equipment condition.

*Arriving Train Information*: Information for a train approaching a highway-rail intersection that may include direction and allow calculation of approximate arrival time and closure duration.

*Track Status*: Current status of the wayside equipment and notification of an arriving train.

1. **List of Stakeholders.**

*(Include a list of agencies and their roles and responsibilities. Also, provide a Concept of Operations that includes a statement of goals and objectives, a statement of the responsibilities and authority of the roles played in the process, and the specific operational processes.)*

AGENCIES:

     :

     :

     :

     :

CONCEPT OF OPERATIONS:

1. **Functional requirement of the project.**

5. **Analysis of alternative system configurations and technology options.**

(*Provide a detailed description of the various technologies considered and why the proposed technology was selected.)*

6. **Describe the various procurement methods available and include rationale for the selected method.**

7. **Identify ITS Standards that will be used in the project.**

*(List all the ITS standards applicable to the ITS elements and/or components of the project, and identify on said list which of those applicable ITS standards will be implemented with this project.)*

*For more information:*

[*first visit FHWA Page: http://www.standards.its.dot.gov/learn\_Application.asp*](https://www.dot.state.oh.us/Local%20Settings/Temporary%20Internet%20Files/OLK1B/first%20visit%20FHWA%20Page:%20http:/www.standards.its.dot.gov/learn_Application.asp)*.*

*Then scroll down and look for the link that corresponds to the ITS application(s) that the project includes. Click on the link to get to the page that has the list of applicable standards for that particular ITS application*

8. **Testing Procedures.**

*(All required items are included in the specifications. All elements of the specifications are included and tested in the traceability matrix.)*

9. **Traceability matrix.**

*Fill out traceability matrix and attach to end of this form.*

10. **Change control management,**

11. **Maintenance, operation and funding of the system after completion.**

*(The maintenance plan addresses the repairs, upgrades, and plans for funding all aspects of the project, particularly during operations. The Operations Concept includes a clear statement of goals and objectives, a clear statement of the responsibilities and authority of the roles played in the process, and the specific operational processes and development and maintenance of the process.*)

MAINTENANCE PLAN:

OPERATIONS CONCEPT:

12. **Documentation for revising the Regional ITS architecture.**

*(Submit the revised data flow diagram to the appropriate* ***MPO****. If no* ***MPO*** *exists for this area, contact the* ***ODOT District****.)*

| TRACEABILITY MATRIX | | | | | |
| --- | --- | --- | --- | --- | --- |
| **FUNCTIONAL REQUIREMENT[[1]](#footnote-1)** | **SOURCE DOCUMENT[[2]](#footnote-2)** | **SOURCE DOCUMENT REFERENCE[[3]](#footnote-3)** | **TEST[[4]](#footnote-4)** | **PASS/FAIL[[5]](#footnote-5)** | **CORRECTIVE ACTION [[6]](#footnote-6)** |
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1. List the Functional Requirements from Section 4. [↑](#footnote-ref-1)
2. Source Document can be plans, specifications, special provisions, etc. where the requirement is found. [↑](#footnote-ref-2)
3. Source Document Reference is the section, item number, page, etc. from this source document. [↑](#footnote-ref-3)
4. How will this requirement be tested? [↑](#footnote-ref-4)
5. (To be completed after installation) Results of the test. [↑](#footnote-ref-5)
6. (To be completed after installation) Corrective action taken. [↑](#footnote-ref-6)