



## ITS Projects – Systems Engineering Process Compliance Checklist

### FHWA Final Rule (23 CFR 940)

This checklist is to be completed by the MDOT or LPA Project Management Staff. Please refer to the accompanying Systems Engineering Management Plan (SEMP) document for information on the checklist items as well as a completed example.

Attached Checklist Sections *		Project Name:		
		Date	Name of Person Filling/Modifying the Form	Notes
<input type="checkbox"/>	<b>A</b>			
<input type="checkbox"/>	<b>B</b>			
<input type="checkbox"/>	<b>C</b>			
<input type="checkbox"/>	<b>D</b>			
<input type="checkbox"/>	<b>E</b>			
<input type="checkbox"/>	<b>F</b>			
<input type="checkbox"/>	<b>G</b>			
<input type="checkbox"/>	<b>H</b>			

\* Check all that apply

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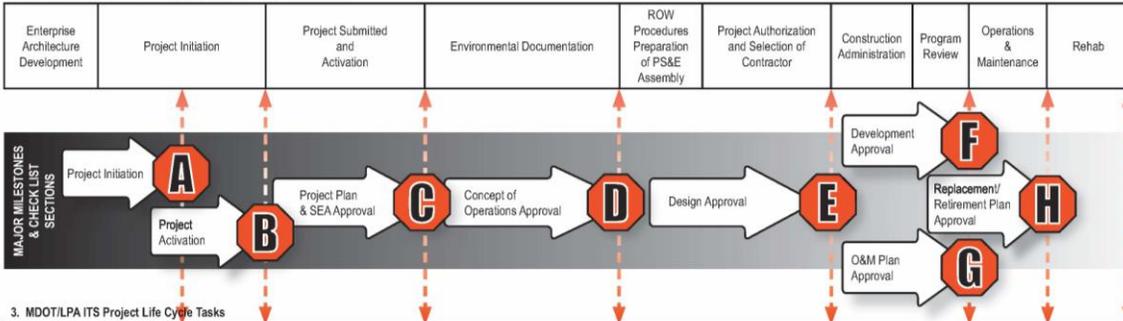
## ITS Project Life Cycle Key

1. Typical Capital Project Development Life Cycle Tasks

Transportation Planning	Identify Project Needs	Form ProjDev Team	Project Studies (PSR, PSSR . . .)	Secure Project Program	Prepare Draft Report	Perform Environ Report	Secure Project Approval	PS&E Development Approval Agreement Acquire ROW	Complete Project Design	Prepare & Advertise Project	Construct Project	Project Close-out	Operations & Maintenance	Rehab
Identify Project*		Secure Project Program*		Perform Environmental *										

\*Local Agency Activities

2. Conventional MDOT/LPA Project Development Life Cycle Tasks



3. MDOT/LPA ITS Project Life Cycle Tasks

Regional Architecture Development	Project Initiation	Feasibility & Concept Exploration	Project Planning & Systems Engineering Analysis (SEA)	Concept of Operations & Systems Requirements Definition	System Design	System Development, Deployment & Validation	Operations & Maintenance/Changes & Upgrades	System Retirement & Replacement
	Phase 0		Phase 1		Phase 2	Phase 3	Phase 4	Phase 5

4. FHWA ITS Life Cycle Phases From The Systems Engineering Guidebook for ITS

Architecture Development	Concept Exploration & Benefits Analysis	Project Planning & Concept of Operations	System Definition	System Development & Integration	Operations & Maintenance	System Retirement/Replacement
Phase [-1]	Phase 0	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5





# PROJECT INFORMATION

This checklist section applies, in part, to Phase 0 activities of the ITS Project Life Cycle. It summarizes general project data defined in the early stages of project development and documents the identified project need and/or justification.

## COMPLETE AND SUBMIT FOR PROJECT ACTIVATION REVIEW / APPROVAL

### PART 1 – General Project Data

1.1 PROJECT TITLE	1.2 PROJECT NUMBER: <input type="checkbox"/> New Project <input type="checkbox"/> Modification to existing Project
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1.3 BRIEF DESCRIPTION/PURPOSE

1.4 CONTACT PERSON/GROUP	1.5 PROJECT LOCATION	1.6 PERIOD OF PERFORMANCE	1.7 BUDGET & FUNDING SOURCE
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1.8 NATURE OF WORK  
 Scoping  Design  Software/Integration  Implementation  Operations  Evaluations  Others (Please specify):

1.9 RELATIONSHIP TO OTHER PROJECTS AND PHASES

1.10 EQUIPMENT TO BE PURCHASED WITH PROJECT FUNDING

1.11 STATUS <input type="checkbox"/> Commission Approval <input type="checkbox"/> Environmental Clearance, If applicable	<input type="checkbox"/> TIP/STIP Amendment <input type="checkbox"/> FHWA Authorization
--	--

1.12 IS THERE A WORK PLAN FOR THIS PROJECT WITH TASK BREAKDOWN?  
 No  
 Yes, Provide Document Reference  
 To Be Developed  
 Other, Please Explain

### PART 2 – Identified General Project Need

2.1 WHAT IS/ARE THE PROBLEM(S) WITH THE CURRENT SITUATION?

2.2 WHAT NEEDS DOES THIS PROJECT ADDRESS?

2.3 HOW WERE THESE NEEDS IDENTIFIED?  
 Internal MDOT Assessment  Stakeholder Involvement  From Technical Reviews or other studies  Other

Please provide details on how needs were identified – If other documentation was used as reference, please identify it here:

# FEASIBILITY and CONCEPT EXPLORATION

This checklist section applies, in part, to Phase 0 of the ITS Project Life Cycle and verifies that the applicable Statewide and/or Regional ITS Architecture outputs are used to identify alternative system concepts, assess their feasibility and recommend the best alternatives.

## COMPLETE AND SUBMIT FOR PROJECT ACTIVATION REVIEW / APPROVAL

### PART 3 – Planning and Regional ITS Architecture(s) Interface

#### 3.1 ITS ARCHITECTURE(S) IMPACTED BY PROJECT

- Gulf Coast
- Hattiesburg-Petal-Forrest-Lamar
- Central MS
- MDOT Statewide
- Northwest MS
- Other, Please Specify

Changes communicated to appropriate architecture maintenance agencies  No  Yes

#### 3.2 PORTIONS OF ARCHITECTURE(S) BEING IMPLEMENTED

- Turbo Architecture – “Project Architecture Report”  Attached  Unavailable
- Turbo Architecture – “Interconnect and Flow Diagrams”  Attached  Unavailable

If “Unavailable”, Please Specify and provide detail:

#### 3.3 ARE OTHER MDOT and/or LPA RESOURCES OUTSIDE OF THE ITS PROGRAM GROUP REQUIRED FOR THIS PROJECT?

- No  Yes

If “Yes”, Please Specify and provide detail:

#### 3.4 HAVE THE FOLLOWING SECTIONS OF THE ITS ARCHITECTURE(S) BEEN UTILIZED? (REF: FHWA RULE 940.9)

Please Check All That Apply:

- Architecture Scope (geographic region, timeframe, range of services, institutions and jurisdictions)
- Stakeholder Identification (name, responsibility and jurisdiction)
- Operational Concept (roles and responsibilities of primary stakeholders)
- Functional Requirements (High level requirements of each ITS system and what each ITS element will do)
- Interfaces/Flows (Connections b/t ITS systems in the region and what information is exchanged)
- Operational Concept (roles and responsibilities of primary stakeholders)
- Functional Requirements (High level requirements of each ITS system and what each ITS element will do)
- Interfaces/Flows (Connections b/t ITS systems in the region and what information is exchanged)
- Agreements (List of agreements and their type that may be needed)
- Standards Identification (ITS standards consistent with the National ITS Architecture)
- Project Sequencing (Order that the projects will be implemented)

Please Explain unchecked items and provide detail:

#### 3.5 IDENTIFY STAKEHOLDERS IN THE ITS ARCHITECTURE(S) INCLUDED IN THIS PROJECT

Turbo Architecture – “Stakeholder Report”  Attached  Unavailable  Other, Please Explain:

**3.6 IDENTIFY INVENTORY ELEMENTS IN THE ITS ARCHITECTURE(S) INCLUDED IN THIS PROJECT**

Turbo Architecture – “Inventory Report”  Attached  Unavailable  Other, Please Explain:

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**3.7 ARE CHANGES RECOMMENDED TO THE ITS ARCHITECTURE(S) AS A RESULT OF THIS PROJECT?**

No  Yes

If “Yes”, Please Specify and provide detail:

Turbo Architecture – “Region to Project Comparison Report”  Attached  Unavailable  Other, Please Explain:

---

**PART 4 – Needs Assessment**

**4.1 IS THERE A NEEDS ASSESSMENT REPORT FOR THIS PROJECT?**

No  Yes  To Be Developed

If “No” was selected, please explain:

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**4.2 IF “Yes” WAS SELECTED, PLEASE FILL OUT THE FOLLOWING**

- Have all relevant stakeholders been represented?  Yes  No
- Have appropriate resources been utilized to define the needs?  Yes  No
- Have the collected needs been reviewed with the stakeholders?  Yes  No
- Has an objective approach been identified for prioritizing needs?  Yes  No
- Are conclusions and rationale for decisions made documented?  Yes  No
- Have all stakeholders agreed that their needs have been clearly represented?  Yes  No

If “No” was checked in any of the boxes, please specify reason:

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**4.3 PLEASE PROVIDE NEEDS ASSESSMENT DOCUMENT REFERENCE IF AVAILABLE**

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**PART 5 – Concept Selection and Feasibility Assessment**

**5.1 IS THERE A STATEMENT OF VISION, GOALS AND OBJECTIVES THAT HAS BEEN VALIDATED BY THE PRIMARY (TIER 1) STAKEHOLDERS FOR THIS PROJECT?**

No  Yes  To Be Developed

If “Yes” was not selected, please explain:

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**5.2 WAS THE EVALUATION CRITERIA USED IN COMPARING ALTERNATIVES VALIDATED BY THE TIER 1 STAKEHOLDERS?**

No  Yes  To Be Developed

If “Yes” was not selected, please explain:

---

**5.3 IS THE SELECTED CONCEPT AND RATIONALE FOR SELECTION DOCUMENTED?**

No  Yes

If “Yes”, please provide document reference, otherwise explain:



# PROJECT PLANNING and SYSEMS ENGINEERING ANALYSIS (SEA)

This checklist section applies, in part, to Phase 1 of the ITS Project Life Cycle and identifies project activities to be included in the project plan and systems engineering management planning for the project.

## COMPLETE AND SUBMIT FOR PROJECT PLAN and SEA REVIEW / APPROVAL

### PART 6 – MDOT Project Planning Check

#### 6.1 ASSIGNED MDOT PROJECT DIRECTOR(S)

#### 6.2 HAVE ALL REQUIRED PROJECT-LEVEL RESOURCES BEEN IDENTIFIED AND COMMITTED?

Please Check All That Apply:

- Project task budget(s) approved
- Project task schedule approved
- Documents needed for procurement of contracted effort are complete
- Project Plan developed (for both administrative and technical tasks)

Please Explain unchecked items and provide detail:

[completion of this Part pending MDOT SEMP draft documentation review and input]

### PART 7 – Systems Engineering Management Planning

#### 7.1 HAVE THE PROCESS STEPS BEEN IDENTIFIED FOR THE PROJECT TASK(S) AND DEVELOPED IN TO A LOGICAL WORK BREAKDOWN STRUCTURE?

- Yes    In Progress

If "In Progress" was selected, please explain:

#### 7.2 HAVE KNOWN MAJOR REQUIREMENTS / CONSTRAINTS BEEN INCORPORATED INTO THE PROCESS STEPS?

- No    Yes

If "No" was selected, please explain:

#### 7.3 HAVE THE NECESSARY TECHNICAL REVIEWS AND PROCESS CONTROL MILESTONES BEEN IDENTIFIED WHERE MDOT REVIEW AND APPROVAL IS REQUIRED?

- Yes    In Progress

Please provide document reference for project milestone summary:

#### 7.4 HAS A FORMAL SYSTEMS ENGINEERING ANALYSIS (SEA) BEEN PERFORMED FOR THE PROJECT?

- No    Yes    In Progress

If "No" was selected, please explain:

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**7.5 IF "Yes" or "In Progress" WAS SELECTED FOR PART 7.4, PLEASE FILL OUT THE FOLLOWING:**

*The SEA documentation contains the following sections. Please Check All That Apply:*

- Project Purpose
- Program objectives addressed by the project
- Overview of SEA requirements for the project
- Work Breakdown Structure
- Task Inputs and Deliverables
- Decision Gates
- Reviews and Meetings
- Resources
- Procurement Plan
- Systems Process (Project-Level) Overview
- Risk Management Plan
- Project Specific Technical Plans
- Systems Engineering Schedule
- References

Please Explain unchecked items and provide detail:

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**7.6 HAVE ALL IDENTIFIED PROJECT RISKS BEEN REVIEWED APPROVED BY MDOT / LPA MANAGEMENT?**

- No  Yes

If "No" was selected, please explain:

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**7.7 PLEASE PROVIDE THE SEA DOCUMENT REFERENCE**

- Copy attached  Unavailable, Please Explain:

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**7.8 PLEASE VALIDATE THE FOLLOWING ELEMENTS OF THE SEA PRIOR TO TRANSMITTAL TO THE CONCEPT OF OPERATIONS DEVELOPMENT TEAM.**

*The SEA:*

- Identifies all project process steps, inputs and outputs?  Yes  No
- Incorporates known design constraints (specific hardware and COTS Software products) ?  Yes  No
- Identifies all necessary technical reviews?  Yes  No
- Identifies needed resources for each process task?  Yes  No
- Identifies the required content of each deliverable?  Yes  No
- Identifies the required format for each deliverable?  Yes  No
- Identifies a Configuration Management baseline?  Yes  No
- Establishes selection criteria in support of each required procurement activity?  Yes  No
- Supports the Mississippi ITS Program deployment goals?  Yes  No
- Adequately addresses all risk areas (Ref: 7.6)  Yes  No

If "No" was checked in any of the boxes, please specify reason:

# CONCEPT OF OPERATIONS and SYSTEMS REQUIREMENTS DEFINITION

This checklist section applies, in part, to Phase 1 of the ITS Project Life Cycle and identifies project activities to be included in the development of a Concept of Operations (COO) and initial detailed System Requirements Specifications (SRS) for the project system.

## COMPLETE AND SUBMIT FOR CONCEPT OF OPERATIONS REVIEW / APPROVAL

### PART 8 – Concept of Operations

#### 8.1 IS THERE A CONCEPT OF OPERATIONS (COO) DOCUMENT FOR THIS PROJECT?

No  Yes  To Be Developed

If "No" was checked, Please Explain:

#### 8.2 IF "Yes" WAS SELECTED, PLEASE FILL OUT THE FOLLOWING

The COO document contains the following:

- Scope (Geographic, Timeframe, Region etc)  Yes  No
- Description of what the project/system is expected to do  Yes  No
- Roles and Responsibilities for all Tier 1 stakeholders  Yes  No
- Operational Scenarios  Yes  No
- Project/System Impacts  Yes  No

If "No" was checked in any of the boxes, please specify reason:

#### 8.3 PLEASE PROVIDE COO DOCUMENT REFERENCE IF AVAILABLE

Turbo Architecture – "Roles and Responsibilities Report"  Attached  Unavailable  Other, Please Explain:

#### 8.4 PLEASE EVALUATE THE FOLLOWING ELEMENTS OF THE COO PRIOR TO ADVANCING THE PROJECT TO SYSTEMS REQUIREMENTS ANALYSIS:

The COO:

- Describes operations from the viewpoint of the stakeholders?  Yes  No
- Includes descriptions of both normal and failure operational scenarios?  Yes  No
- Identifies stakeholders and their responsibilities?  Yes  No
- Includes a statement of goals, objectives, and vision?  Yes  No
- Clearly defines constraints and associated metrics?  Yes  No
- Identifies all required external "system" interfaces?  Yes  No
- Clearly defines the proposed operational and support environment?  Yes  No
- Describes alternative concepts and rationale for selection?  Yes  No
- Contains approved operational scenarios?  Yes  No

If "No" was checked in any of the boxes, please specify reason:

#### 8.5 OTHER REFERENCE DOCUMENTS (IF ANY)

**PART 9 – System Requirements Definition**

**9.1 ARE HIGH-LEVEL FUNCTIONAL REQUIREMENTS WRITTEN AND DOCUMENTED?**

No  Yes  To Be Developed

**9.2 IF “Yes” WAS SELECTED, PROVIDE REQUIREMENTS DOCUMENT REFERENCE**

Turbo Architecture – “Functional Requirements Report”  Attached  Unavailable  Other, Please Explain:

**9.3 WAS A REQUIREMENTS “WALKTHROUGH” HELD WITH THE STAKEHOLDERS TO VALIDATE THE REQUIREMENTS?**

No  Yes

If “No” was checked, Please Explain:

**9.4 IS THE REQUIREMENT SET COMPLETE, AS FOLLOWS?**

Please Check All That Apply:

- Functional Requirements
- Performance Requirements
- Enabling Requirements (training, operations and maintenance support, development, testing, production, deployment)
- Data Requirements
- Interface Requirements
- Environmental Requirements
- Non-functional Requirements (reliability and availability)

Please Explain unchecked items and provide detail:

**9.5 WAS A VERIFICATION & VALIDATION PLAN “TEST CASE” FOR EACH REQUIREMENT DEVELOPED? (TEST, DEMONSTRATION, ANALYSIS, INSPECTION)**

No  Yes

If “No” was checked, Please Explain:

**9.6 WERE ATTRIBUTES (QUALITY FACTORS) CONSIDERED FOR EACH REQUIREMENT, AS FOLLOWS?**

Please Check All That Apply:

- Priority  Owner assignment and acceptance
- Risk  Date / Timeline
- Cost  Verification Method (demonstration, analysis, testing and inspection)

Please Explain unchecked items and provide detail:

**9.7 PLEASE EVALUATE THE FOLLOWING ELEMENTS OF THE SYSTEMS REQUIREMENTS DEFINITION DOCUMENTATION PRIOR TO ADVANCING THE PROJECT TO HIGH-LEVEL DESIGN:**

Does each requirement meet the following criteria?

- |   |  |                                   |  |
|---|--|-----------------------------------|--|
| - Necessary ( <i>can be traced to a user need</i> ) | <input type="checkbox"/> Yes <input type="checkbox"/> No | - Technology Independent          | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Concise ( <i>minimal</i> )                        | <input type="checkbox"/> Yes <input type="checkbox"/> No | - Unambiguous ( <i>clear</i> )    | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Feasible ( <i>attainable</i> )                    | <input type="checkbox"/> Yes <input type="checkbox"/> No | - Complete                        | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| - Testable ( <i>measurable</i> )                    | <input type="checkbox"/> Yes <input type="checkbox"/> No | ( <i>function fully defined</i> ) | <input type="checkbox"/> Yes <input type="checkbox"/> No |

If “No” was checked in any of the boxes, please specify reason:

**9.8 DURING THIS PROCESS STEP, WERE PERIODIC REVIEWS PERFORMED IN ACCORDANCE WITH THE REVIEW PLAN DOCUMENTED IN THE SEA?**

Yes  No, Provide Explanation:

# SYSTEM DESIGN

This checklist section applies to Phase 2 of the ITS Project Life Cycle and includes the high level design and component level detailed design for the project system.

## COMPLETE AND SUBMIT FOR DESIGN REVIEW / APPROVAL

### PART 10 – High-Level Design (Project Level Architecture)

#### 10.1 WERE ALTERNATIVE PROJECT ARCHITECTURES / HIGH-LEVEL DESIGNS (HLD) CONSIDERED?

No  Yes  To Be Developed

If "Yes", Please provide reference to design document :

Otherwise, Please Explain:

#### 10.2 ARE ALL REQUIRED SYSTEM INTERFACES IDENTIFIED AND DOCUMENTED?

No  Yes

If "No" was checked, Please Explain:

#### 10.3 HAVE INDUSTRY STANDARDS BEEN IDENTIFIED?

Yes  To Be Developed

Please provide reference to the Standards List:

#### 10.4 HAVE THE HIGH-LEVEL DESIGN ELEMENTS BEEN TRACED TO THE SYSTEM REQUIREMENTS?

Yes  To Be Developed

Please provide reference to the Traceability Matrix:

Otherwise, Please Explain:

#### 10.5 DO ANY OF THE APPROVED SYSTEM REQUIREMENTS NEED TO BE CHANGED BASED ON THE HLD EFFORT?

No  Yes

If "Yes" was checked, Please List/Specify:

#### 10.6 IF "Yes" WAS ANSWERED FOR PART 10.5, HAVE THE SPECIFIC SYSTEM TECHNICAL PLANS BEEN UPDATED IN THE PROJECT SYSTEMS ENGINEERING ANALYSIS (SEA).

No  Yes

If "No" was checked, Please Explain:

### PART 11 – Component Level Detailed Design

#### 11.1 IS THERE A DESIGN DOCUMENT AVAILABLE?

No  Yes  To Be Developed

Please provide description and reference to design document:

Otherwise, Please Explain:

**11.2 IF "YES" WAS SELECTED, PLEASE COMPLETE THE FOLLOWING**

- Are the design details well documented?  Yes  No
- Do the details of the design trace to requirements definitions?  Yes  No
- Are boundaries and interfaces of the system clearly identified?  Yes  No
- Is there a process for Configuration Control?  Yes  No
- Was a verification plan for each component defined?  Yes  No
- Was each component checked for performance?  Yes  No
- Did each component have a technical review?  Yes  No
- Was a critical design review conducted?  Yes  No
- Was an alternatives analysis done on the COTS products used?  Yes  No

If "No" was checked in any of the boxes, please specify reason:

---

**11.3 DOES THE DESIGN INCORPORATE NATIONAL ITS STANDARDS?**

No  Yes

If "Yes", Please List / Identify what ITS Standards are being used:

Turbo Architecture – "Standards Report"  Attached  Unavailable  Other, Please Explain:

---

**11.4 DOES THE DESIGN INCORPORATE ANY MDOT / LPA GENERAL BUSINESS SOLUTION OR IT ENTERPRISE STANDARDS?**

No  Yes

If "Yes", Please List/Specify what Agency Enterprise Standards are being used:

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**11.5 WERE ALL SYSTEM AND SUB-SYSTEM REQUIREMENTS UPDATED AT THE TIME OF DESIGN REVIEW?**

No  Yes

If "No", Please Explain:

# SYSTEM DEVELOPMENT, DEPLOYMENT and VALIDATION

This checklist section applies to Phase 3 of the ITS Project Life Cycle and includes system hardware and software development, integration, initial system deployment and an assessment of the system against identified needs..

## COMPLETE AND SUBMIT FOR DEVELOPMENT REVIEW / APPROVAL

### PART 12 – Hardware and Software Development

**12.1 HAS A TECHNICAL REVIEW AND COORDINATION MEETING SCHEDULE SPECIFIC TO HARWDARE / SOFTWARE (H / S) DEVELOPMENT BEEN ESTABLISHED AND DOCUMENTED?**

No  Yes  To Be Developed

If "Yes", Please provide schedule reference. Otherwise, Please Explain:

**12.2 HAS THE PROCESS BEEN DOCUMENTED FOR DEVELOPING HARDWARE, SOFTWARE, DATABASES AND COMMUNICATIONS?**

No  Yes  To Be Developed

If "Yes", Please provide document reference. Otherwise, Please Explain:

**12.3 IS THERE AN APPROVED SCHEDULE AND METHOD FOR MEASURING SOFTWARE AND HARDWARE DEVELOPMENT PROGRESS?**

No  Yes  To Be Developed

If "Yes", please provide document reference. Otherwise, Please Explain:

### PART 13 – Integration and Verification

**13.1 BASED ON PROJECT COMPLEXITY, HAS A WRITTEN INTEGRATION PLAN BEEN DOCUMENTED?**

No  Yes

If "Yes", Please provide reference:

**13.2 ARE THE EXTERNAL SYSTEMS NEEDED TO SUPPORT INTEGRATION AVAILABLE OR DOES THE INTERFACE NEED TO BE SIMULATED?**

Available  To Be Simulated

If "Simulated", Please List / Identify affected systems:

**13.3 HAVE THE COMPONENTS TO BE INTEGRATED BEEN PLACED UNDER CONFIGURATION CONTROL?**

No  Yes

If "Yes", Please provide document reference (Configuration Management Plan):

If "No" was checked, provide reason:

**13.4 HAS A SYSTEM VERIFICATION & VALIDATION PLAN BEEN DOCUMENTED?**

No  Yes

If "Yes", Please provide document reference. Otherwise, Please Explain:

---

**13.5 PLEASE VALIDATE THAT THE FOLLOWING SYSTEM VERIFICATION ELEMENTS HAVE BEEN FOLLOWED:**

*Please Check All That Apply:*

- All requirements traced to the Verification Plan test case?
- Required participants identified and trained?
- Readiness of resources needed for testing determined?
- All participants notified of testing schedule?
- Verification Report prepared?

If "No" was checked in any of the boxes, please specify reason:

---

**13.6 HAS A SYSTEM ACCEPTANCE PLAN BEEN DOCUMENTED?**

- No  Yes

If "Yes", Please provide document reference. Otherwise, Please Explain:

---

**PART 14 – System Deployment**

**14.1 HAVE DEPLOYMENT GOALS BEEN DEVELOPED THAT MEET THE STAKEHOLDER NEEDS?**

- No  Yes

**IF "Yes" WAS SELECTED, CAN THE GOALS BE TRACED TO THE DEPLOYMENT STRATEGY?**

- No  Yes

If "No" was checked, Please provide an explanation:

---

**14.2 DOES THE DEPLOYMENT STRATEGY MINIMIZE RISK OF INTERFERENCE TO ON-GOING OPERATIONS?**

- No  Yes

If "No" was checked, Please provide an explanation:

---

**14.3 IF THIS IS A "PHASED" DEPLOYMENT HAS THE INITIAL DEPLOYMENT PLAN BEEN DOCUMENTED?**

- No  Yes

If "Yes", Please provide reference. If "No", skip to Part 14.5.

---

**14.4 IF "YES" WAS CHECKED IN PART 14.3, PLEASE FILL OUT THE FOLLOWING:**

- Is there clear criteria for system completion?  Yes  No
- Are there clear performance metrics for system acceptance?  Yes  No
- Is there adequate documentation for all users and maintainers?  Yes  No

If "No" was checked in any of the boxes, please specify reason:

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**14.5 PROCUREMENT DETAILS**

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**14.6 DOES THE DEPLOYMENT STRATEGY SATISFY THE FOLLOWING?**

- Consider available funding?  Yes  No
- Produce an operationally useful system?  Yes  No
- Minimize risk of interference with on-going operations?  Yes  No
- Offer a viable operational fallback at each step in the process?  Yes  No
- Stakeholders that are aware of their roles and responsibilities?  Yes  No
- Consider the availability of needed resources for each step?  Yes  No

If "No" was checked in any of the boxes, please specify reason:

---

**14.7 REFERENCE DOCUMENTS (IF ANY)**

Turbo Architecture – "List of Agreements"  Attached  Unavailable  Other, Please Explain:

---

**PART 15 – System Validation****15.1 WERE THE STAKEHOLDERS INVOLVED IN THE FOLLOWING?**

- Validation planning and definition of validation strategy?  Yes  No
- Performance of the validation?  Yes  No
- Requirements walkthrough and approval process?  Yes  No

If "No" was checked in any of the boxes, please specify reason:

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*[remainder of page left intentionally blank]*



## OPERATIONS & MAINTENANCE, CHANGES and UPGRADES

This checklist section applies to advance review and approval of Phase 4 activities of the ITS Project Life Cycle and includes operations and maintenance strategies, and the planned implementation of any necessary changes and upgrades.

**COMPLETE AND SUBMIT FOR OPERATIONS & MAINTENANCE PLAN REVIEW / APPROVAL**

### PART 16 – Operations and Maintenance (O&M) Plan

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**16.1 IS FUNDING AND MANAGEMENT SUPPORT IN PLACE FOR ON-GOING O&M?**

No  Yes  In Progress

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**16.2 HAS AN OPERATIONS & MAINTENANCE PLAN BEEN DOCUMENTED?**

No  Yes

If "Yes", Please provide reference:

---

**16.3 WHO WILL MAINTAIN THE SYSTEM?**

---

**16.4 IS THERE A PLAN FOR LONG TERM UPGRADES?**

No  Yes

If "Yes", Please provide reference:

---

**16.5 IS THERE A CHANGE MANAGEMENT SYSTEM IN PLACE?**

No  Yes

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**16.6 ARE PLANNED UPGRADES OR CHANGES EXPECTED TO IMPACT THE PROJECT ARCHITECTURE?**

No  Yes

**If "Yes", IS THE UPDATED PROJECT ARCHITECTURE CONSISTENT WITH THE ITS STATEWIDE AND/OR REGIONAL ARCHITECTURE(S)?**

No  Yes

If "No", Please Explain and describe planned process for ITS Architecture(s) updates:

If "Yes", Please provide reference/link to updated project architecture:

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## SYSTEM RETIREMENT and REPLACEMENT

This checklist section applies to Phase 5 of the ITS Project Life Cycle and includes an assessment of the system performance against identified needs and determining the need for system retirement / replacement.

### COMPLETE AND SUBMIT FOR SYSTEM RETIREMENT AND REPLACEMENT PLAN REVIEW / APPROVAL

#### PART 17 – System Retirement and Replacement

##### 17.1 HAS A STUDY BEEN PERFORMED ON THE COST / BENEFIT OF UPGRADING THE LEGACY SYSTEM AGAINST THE COST / BENEFIT OF PROCURING A NEW SYSTEM?

No  Yes

If “No” was checked, please provide explanation:

##### 17.2 DID THE STUDY INCLUDE OPERATIONS AND MAINTENANCE COSTS OF BOTH THE LEGACY AND NEW SYSTEM / SUB-SYSTEM?

No  Yes

If “Yes”, Please provide reference:

##### 17.3 IS THE NEW SYSTEM WELL DOCUMENTED – DOES IT HAVE THE FOLLOWING?

- New Concept of Operations  Yes  No
- Requirements documentation  Yes  No
- High-level design documentation  Yes  No
- Detailed design documentation  Yes  No
- Verification Plans  Yes  No
- Supporting documentation  Yes  No  
(training, maintenance, user’s manuals...)

If “No” was checked, please provide explanation:

##### 17.4 HAS THE REPLACEMENT STRATEGY BEEN DOCUMENTED?

No  Yes

If “Yes”, Please provide reference. Otherwise, Please Explain: