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# Introduction

This Update Report for the Florida District 4/6 Regional ITS Architecture (RITSA) identifies the revisions incorporated into the architecture. The purpose of this District 4/6 RITSA Update Report is to document revisions made to the District 4/6 RITSA to support Stakeholder input received through Architecture Change Requests as part of the Florida Intelligent Transportation Systems (ITS) Architecture Support and Maintenance Project.

The Florida ITS Architecture Support and Maintenance Project included the initial major update of the Statewide ITS Architecture (SITSA) and seven RITSAs. Following the major update phase, periodic updates are executed to maintain the architecture content. The FDOT Architecture Team coordinates with the FDOT Project Manager or designee and each applicable District Transportation Systems Management and Operations (TSM&O) Program Engineer or designee for the RITSAs.

# Description of Changes

Four maintenance log items were addressed in the update. Table 1 provides descriptions for each change request that was implemented in the architecture update. A log reference number is provided for each change to relate it to the Architecture Maintenance Log that is provided in Appendix A. Each architecture change that is received is added to the maintenance log for tracking and disposition.

Information about stakeholders, elements, and services is provided to summarize the changes. Some architecture components such as interfaces, roles and responsibilities, functional requirements and standards are numerous and can be reviewed on the architecture website or in the Regional Architecture Development for Intelligent Transportation (RAD-IT) software tool to explore the details of each project.

Table 1 ARCHITECTURE Updates

| **Change** | **Log Ref #** | **Actions Taken / Changes Implemented** |
| --- | --- | --- |
| SR-710/Beeline Hwy FR Martin/PB CO Line to Old Dixie Hwy - CAV Freight Project: The project includes deployment of a combination of Vehicle to Infrastructure (V2I) and Vehicle to Vehicle (V2V) components required for the freight vehicles. The project will integrate number of safety and mobility applications including freight signal priority. The project will include OBUs communicating to the RSUs to be installed at strategic locations along the project routes and traffic signals on SR 710. Additional information at <https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/CAVFreight>  | 138 | The FDOT District 4 Connected Freight Priority System Deployment project is already defined in the RITSA. To reflect the safety and mobility applications beyond the initial freight signal priority application described for the project, the following components were added to the project: * Added Stakeholders: Travelers and Broward County Public Works and Transportation Administration
* Added Elements: Vehicles
* Added Services:
	+ VS02 V2V Basic Safety (FDOT District 4 Connected Freight Priority)
	+ VS08 Queue Warning (FDOT District 4 Connected Freight Priority)
	+ VS09 Reduced Speed Zone Warning / Lane Closure (FDOT District 4 Connected Freight Priority)
	+ VS13 Intersection Safety Warning and Collision Avoidance (FDOT District 4 Connected Freight Priority)
* Added Interfaces.
* Added Roles and Responsibilities.
* Added Functional Requirements.
* Selected Communications Solutions.
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| Train Vehicle Crash Avoidance Pilot Project: District 4 aims to deploy technology solutions to mitigate crashes and hazards at railroad crossings by reducing the number of vehicles stopped on railroad tracks. The following five (5) Railroad (RR) Crossings locations were identified by FDOT for this pilot project: 1. Okeechobee Boulevard (SR 704) 2. Hollywood Boulevard (SR 820) 3. Hallandale Beach Boulevard (SR 858) 4. Commercial Boulevard (SR 870) 5. Forest Hill Boulevard (SR 882). Additional information at <https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/train-vehicle-crash-avoidance-pilot-project>  | 139 | Added new project: District 4 Train Vehicle Crash Avoidance Pilot Project* Added Elements: CAV-ITS Map Update System, FDOT District 4 Arterial Management System, FDOT District 4 CAV Field Equipment, FDOT District 4 Field Equipment, FDOT District 4 Palm Beach TMC, FDOT SCMS, Rail Operations Centers, Railroad Operators Wayside Equipment, and Vehicles.
* Added Services:
	+ SU04 Map Management (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
	+ SU08 Security and Credentials Management (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
	+ SU09Device Certification and Enrollment (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
	+ TM06 Traffic Information Dissemination (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
	+ TM14 Advanced Railroad Grade Crossing (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
	+ TM15 Railroad Operations Coordination (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
	+ VS08 Queue Warning (FDOT District 4 Train Vehicle Crash Avoidance Pilot Project)
* Added Interfaces.
* Added Roles and Responsibilities.
* Added Functional Requirements.
* Selected Communications Solutions.
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| SR-869/SW 10th Street Connector TSMO Smart Work Zone Project: The project will implement smart work zone (SWZ) applications for advanced traveler information and remote monitoring of the nearby arterial corridors as well as safety and mobility during the construction of SW 10th Street and I-95 Design-Build projects. The project will deploy arterial Transportation Systems Management and Operations (TSM&O) and Connected Vehicle (CV) equipment along the surrounding 6 state road corridors: US 1, Dixie Highway, Powerline Road, US 441, Hillsboro Boulevard, and Sample Road. <https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/smart-work-zone>  | 140 | The Broward County SW 10th Street Connector TSMO project is already defined in the RITSA. SR-869 was added to the project description to capture it as part of the project scope. The Broward County TMC element was found to be missing from the TM01 Infrastructure-Based Traffic Surveillance (BC SW 10th Street Smart Work Zone System) service as part of this project. The Broward County TMC element and information flows associated with the Broward County Field Equipment were added to the TM01 service as part of the RITSA update. |
| FDOT District 6 Krome Avenue TSM&O Infrastructure Deployment Project: The intent is to implement TSM&O strategies such as Traffic Incident Management; Traveler Information Systems; Freight-focused Information Systems; Active Arterial Management; and Connected Vehicle (CV) applications (under discussion). The enabling infrastructure may include fiber optic backbone, hub buildings, CCTV cameras, Dynamic Message Signs, Vehicle Detection System, Emergency Stopping Sites, CV devices (e.g., RSUs, OBUs), RTMC Upgrades, and extension of the Incident Response Services along the corridor. Krome Avenue is a Strategic Intermodal System (SIS) corridor designated as a STAMP Priority Corridor, Principal Arterial (Other) and an Evacuation Route. The project goal is to elevate the operations and maintenance of Krome Avenue by implementing TSM&O strategies that improve the mobility and safety of all users of the corridor. Project limits: SR 997/Krome Avenue from SR 998/SW 312 Street to US 27/SR 25/Okeechobee Road. | 142 | Added new project: FDOT District 6 Krome Avenue TSM&O Infrastructure Deployment Project* Added Elements: Archived Data User Systems, CAV-ITS Map Update System, Commercial Vehicle, FDOT District 6 CAV Field Equipment, FDOT District 6 Signal Field Equipment, FDOT District 6 SunGuide Field Equipment, FDOT District 6 SunGuide Transportation Management Center, FDOT SCMS, FHP Regional Dispatch, Florida 511, Florida Highway Patrol Vehicles, Local EOCs, Local Fire/ EMS Dispatch, Local Fire/EMS Vehicles, Local Police Dispatch, Local Police Vehicles, Miami-Dade Traffic Control Center, Miami-Dade Transit Control Center, Miami-Dade Transit Metrobuses, Private Travelers Personal Computing Devices, Vehicles.
* Added Services:
	+ CVO06: Freight Signal Priority (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ DM02: Performance Monitoring (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ PS03: Emergency Vehicle Preemption (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ PS12: Disaster Response and Recovery (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ PS13: Evacuation and Reentry Management (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ PT09: Transit Signal Priority (Miami-Dade Transit Agency)
	+ SU01: Connected Vehicle System Monitoring and Management (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ SU04: Map Management (SR997/Krome Avenue TSMO Infrastructure Deployment)
	+ SU08: Security and Credentials Management (SR997/Krome Avenue TSMO Infrastructure Deployment)
	+ TI01: Broadcast Traveler Information (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM01: Infrastructure-Based Traffic Surveillance (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM02: Vehicle-Based Traffic Surveillance (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM03: Traffic Signal Control (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM04: Connected Vehicle Traffic Signal System (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM06: Traffic Information Dissemination (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM08: Traffic Incident Management System (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ TM17: Speed Warning and Enforcement (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ VS02:V2V Basic Safety (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ VS12: Pedestrian and Cyclist Safety (SR 997/Krome Avenue TSMO Infrastructure Deployment)
	+ VS13: Intersection Safety Warning and Collision Avoidance (SR 997/Krome Avenue TSMO Infrastructure Deployment).
* Added Interfaces.
* Added Roles and Responsibilities.
* Added Functional Requirements.
* Selected Communications Solutions.
* Selected Agreements.
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Appendix A: Architecture Maintenance Log (District 4/6 RITSA)

The maintenance log in Table 2 provides the District 4/6 RITSA maintenance items considerations for the update.

Table 2 Architecture Maintenance Log (District 4/6 RITSA)

| **#** | **Date** | **Architecture** | **Source** | **Contact** | **Change** | **Disposition** | **Recommend Maintenance** | **Incorporated** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 138 | 10/13/2022 | D4/6 RITSA | Change Request Form: FDOT District 4 | Alexandra Lopez / FDOT | SR-710/Beeline Hwy FR Martin/PB CO Line to Old Dixie Hwy - CAV Freight Project: The project includes deployment of a combination of Vehicle to Infrastructure (V2I) and Vehicle to Vehicle (V2V) components required for the freight vehicles. The project will integrate a number of safety and mobility applications including freight signal priority. The project will include OBUs communicating to the RSUs to be installed at strategic locations along the project routes and traffic signals on SR 710. Additional information at https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/CAVFreight | Project is the same in scope as defined in the FDOT District 4 Connected Freight Priority System Deployment project already in D4/6 RITSA as item 138 in maintenance log. Assess project scope compared to current project in RITSA to determine if different and requiring incorporation. | Yes | Yes |
| 139 | 10/13/2022 | D4/6 RITSA | Change Request Form: FDOT District 4 | Alexandra Lopez / FDOT | Train Vehicle Crash Avoidance Pilot Project: District 4 aims to deploy technology solutions to mitigate crashes and hazards at railroad crossings by reducing the number of vehicles stopped on railroad tracks. The following five (5) Railroad (RR) Crossings locations were identified by FDOT for this pilot project: 1. Okeechobee Boulevard (SR 704) 2. Hollywood Boulevard (SR 820) 3. Hallandale Beach Boulevard (SR 858) 4. Commercial Boulevard (SR 870) 5. Forest Hill Boulevard (SR 882). Additional information at https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/train-vehicle-crash-avoidance-pilot-project | Add new project. | Yes | Yes |
| 140 | 10/13/2022 | D4/6 RITSA | Change Request Form: FDOT District 4 | Alexandra Lopez / FDOT | SR-869/SW 10th Street Connector TSMO Smart Work Zone Project: The project will implement smart work zone (SWZ) applications for advanced traveler information and remote monitoring of the nearby arterial corridors as well as safety and mobility during the construction of SW 10th Street and I-95 Design-Build projects. The project will deploy arterial Transportation Systems Management and Operations (TSM&O) and Connected Vehicle (CV) equipment along the surrounding 6 state road corridors: US 1, Dixie Highway, Powerline Road, US 441, Hillsboro Boulevard, and Sample Road. https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/smart-work-zone | Project is the same in scope as defined in the Broward County 10th Street Connector project already in D4/6 RITSA as item 121 in maintenance log. Assess project scope compared to current project in RITSA to determine if different and requiring incorporation. | Yes | Yes |
| 142 | 10/31/2022 | D4/6 RITSA | Change Request Form: FDOT District 6 | Yamilet Diaz / FDOT | FDOT District 6 Krome Avenue TSM&O Infrastructure Deployment Project: The intent is to implement TSM&O strategies such as Traffic Incident Management; Traveler Information Systems; Freight-focused Information Systems; Active Arterial Management; and Connected Vehicle (CV) applications (under discussion). The enabling infrastructure may include fiber optic backbone, hub buildings, CCTV cameras, Dynamic Message Signs, Vehicle Detection System, Emergency Stopping Sites, CV devices (e.g., RSUs, OBUs), RTMC Upgrades, and extension of the Incident Response Services along the corridor. Krome Avenue is a Strategic Intermodal System (SIS) corridor designated as a STAMP Priority Corridor, Principal Arterial (Other) and an Evacuation Route. The project goal is to elevate the operations and maintenance of Krome Avenue by implementing TSM&O strategies that improve the mobility and safety of all users of the corridor. Project limits: SR 997/Krome Avenue from SR 998/SW 312 Street to US 27/SR 25/Okeechobee Road. | Add new project. | Yes | Yes |