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# Introduction

This Update Report for the Florida District 7 Regional ITS Architecture (RITSA) identifies the revisions incorporated into the architecture. The purpose of this District 7 RITSA Update Report is to document revisions made to the District 7 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

Three maintenance log item 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** |
| --- | --- | --- |
| Pinellas Connected Community (PCC) ATCMTD CAV Project:  The project includes adding CAV Roadside Units (RSUs) to the existing RSU road network, and intersection video analytics (IVA), mobile video analytics (MVA) and mobile routing analytics (MRA), including hardware and software with PSC ATMS, CMP, CMCC, and SCDP interfaces. The project uses a Decision Support System (DSS) and demand management tool for load balancing and rerouting. The project uses Artificial intelligence (AI) in the IVA and MVA applications to determine congestion and crash risk. The project aims to improve travel times on key corridors in the County, which has a high demand arterial network. The PCC project aims to extend the capabilities of the Pinellas Smart City (PSC) Advanced Transportation Management System (ATMS), Connected Mobility Platform (CMP), Connected Mobility Command Center (CMCC), and Smart City Data Platform (SCDP). | 133 | Added new project: Pinellas Connected Community ATCMTD CAV Project   * Included Stakeholders: City of Clearwater Traffic Operations Division, City of St. Petersburg, County Public Safety Agencies, FDOT CO, FDOT District 7, Florida Highway Patrol, NOAA, Pinellas County, Pinellas County PWD, Pinellas Suncoast Transit Authority, Private ISPs, Private Weather Information Providers, Regional Public Safety Agencies, Travelers * Added Elements: Pinellas County CAV Field Equipment, Pinellas County Connected Mobility Platform(CMP), Pinellas County Maintenance Vehicles, Pinellas County Smart City Data Platform(SCDP) * Included Existing Elements: 911 Emergency Call Centers, CAV Authorizing Center, CAV-ITS Map Update System, City of Clearwater Traffic Control Center, City of St. Petersburg Traffic Control Center, County Fire EMS/Rescue Vehicles, FDOT District 7 Tampa Bay SunGuide Center, FDOT SCMS, FHP Vehicles, National Weather Service, Pedestrians, Personnel Device, Pinellas County Field Equipment, Pinellas County Traffic Management Center, Private Traveler Information Services, Private Travelers Personal Computing Devices, Private Weather Information Providers, PSTA Transit Management Center, PSTA Transit Vehicles, Vehicles * Added Services: * DM01: ITS Data Warehouse (Pinellas Connected Community ATCMTD CAV) * MC10: Asset Tracking (Pinellas Connected Community ATCMTD CAV) * PS02: Emergency Response (Pinellas Connected Community ATCMTD CAV) * PS03: Emergency Vehicle Preemption (Pinellas Connected Community ATCMTD CAV) * PT09: Transit Signal Priority (PSTA/ Pinellas County) * SU01: Connected Vehicle System Monitoring and Management (Pinellas Connected Community ATCMTD CAV) * SU03: Data Distribution (Pinellas Connected Community ATCMTD CAV) * SU04: Map Management (Pinellas Connected Community ATCMTD CAV) * SU08: Security and Credentials Management (Pinellas Connected Community ATCMTD CAV) * TI01: Broadcast Traveler Information (Pinellas Connected Community ATCMTD CAV) * TI07: In-Vehicle Signage (Pinellas Connected Community ATCMTD CAV) * TM01: Infrastructure-Based Traffic Surveillance (Pinellas Connected Community ATCMTD CAV) * TM02: Vehicle-Based Traffic Surveillance (Pinellas Connected Community ATCMTD CAV) * TM03: Traffic Signal Control (Pinellas Connected Community ATCMTD CAV) * TM04: Connected Vehicle Traffic Signal System (Pinellas Connected Community ATCMTD CAV) * TM06: Traffic Information Dissemination (Pinellas Connected Community ATCMTD CAV) * TM07: Regional Traffic Management (Pinellas Connected Community ATCMTD CAV) * TM09: Integrated Decision Support and Demand Management (Pinellas Connected Community ATCMTD CAV) * VS12: Pedestrian and Cyclist Safety (Pinellas Connected Community ATCMTD CAV) * VS13: Intersection Safety Warning and Collision Avoidance (Pinellas Connected Community ATCMTD CAV) * Added Interfaces. * Added Roles and Responsibilities. * Added Functional Requirements. * Selected Communications Solutions. |
| Pinellas County Signal Phase and Timing (SPaT) Project: FDOT, in partnership with Pinellas County, deployed a Signal Phase and Timing (SPaT) project at 23 traffic signals along a portion of US 19 corridor. 11 traffic signals are at-grade intersections on US 19 and 12 signals are along frontage roads. This project adds to two other FDOT initiatives with the AASHTO SPaT Challenge: Tallahassee US 90 and Gainesville Trapezium. Project complete but not in RITSA. Additional information at <https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/pinellas-county-spat.shtm> | 135 | Updated existing project: FDOT District 7 US 19 Signal Phase and Timing (SPaT) Project to include Pinellas County   * Included Stakeholders: FDOT District 7, Pinellas County PWD, Travelers * Included Existing Elements: FDOT District 7 CAV Field Equipment, FDOT District 7 Tampa Bay SunGuide Center, Pinellas County CAV Field Equipment, Pinellas County Field Equipment, Pinellas County Traffic Management Center, Vehicles * Included Services:   + Connected Vehicle Traffic Signal System (FDOT District 7 US 19 SPaT)   + Intersection Safety Warning and Collision Avoidance (FDOT District 7 US 19 SPaT) * Added Interfaces. * Added Roles and Responsibilities. * Added Functional Requirements. * Selected Communications Solutions. |
| SR 60 West Coast Smart Signal Corridor Project: Pinellas County, in partnership with FDOT District 7 and the City of Clearwater are proposing a connected vehicle project along SR 60 in Pinellas County. The proposed enhancements through the Smart Signal Corridor project include, new ATC controller upgrades, improved detection systems for both intersection and mid-block system detection, pedestrian detection systems, additional CCTV cameras to complete coverage and new field communications equipment upgrades. | 137 | Added new project: Pinellas County SR 60 West Coast Smart Signal Corridor Project   * Included Stakeholders: FDOT CO, Pinellas County PWD, Travelers * Added Element: Pinellas County CAV Field Equipment * Included Existing Elements: CAV Authorizing Center, CAV-ITS Map Update System, FDOT SCMS, Pedestrians, Pinellas County Field Equipment, Pinellas County Traffic Management Center, Private Travelers Personal Computing Devices, Vehicles * Added Services:   + SU01: Connected Vehicle System Monitoring and Management (Pinellas County SR 60 West Coast Smart Signal Corridor)   + SU04: Map Management (Pinellas County SR 60 West Coast Smart Signal Corridor)   + SU08: Security and Credentials Management (Pinellas County SR 60 West Coast Smart Signal Corridor)   + TM01: Infrastructure-Based Traffic Surveillance (Pinellas County SR 60 West Coast Smart Signal Corridor)   + TM02: Vehicle-Based Traffic Surveillance (Pinellas County SR 60 West Coast Smart Signal Corridor)   + TM03: Traffic Signal Control (Pinellas County SR 60 West Coast Smart Signal Corridor)   + TM04: Connected Vehicle Traffic Signal System (Pinellas County SR 60 West Coast Smart Signal Corridor)   + VS12: Pedestrian and Cyclist Safety (Pinellas County SR 60 West Coast Smart Signal Corridor) * Added Interfaces. * Added Roles and Responsibilities. * Added Functional Requirements. * Selected Communications Solutions. |

Appendix A: Architecture Maintenance Log (District 7 RITSA)

The maintenance log in Table 2 provides the District 7 RITSA maintenance items considerations for the update.

Table 2 Architecture Maintenance Log (District 7 RITSA)

| **#** | **Date** | **Architecture** | **Source** | **Contact** | **Change** | **Disposition** | **Recommend Maintenance** | **Incorporated** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 133 | 9/1/2022 | D7 RITSA | Change Request Form: Pinellas County | Tom Washburn / Pinellas County DPW | Pinellas Connected Community (PCC) ATCMTD CAV Project: The project includes adding CAV Roadside Units (RSUs) to the existing RSU road network, and intersection video analytics (IVA), mobile video analytics (MVA) and mobile routing analytics (MRA), including hardware and software with PSC ATMS, CMP, CMCC, and SCDP interfaces. The project uses a Decision Support System (DSS) and demand management tool for load balancing and rerouting. The project uses Artificial intelligence (AI) in the IVA and MRA applications to determine congestion and crash risk. The project aims to improve travel times on key corridors in the County, which has a high demand arterial network. The PCC project aims to extend the capabilities of the Pinellas Smart City (PSC) Advanced Transportation Management System (ATMS), Connected Mobility Platform (CMP), Connected Mobility Command Center (CMCC), and Smart City Data Platform (SCDP). | Add new project. | Yes | Yes |
| 135 | 10/13/2022 | D7 RITSA | Change Request Form: FDOT District 7 | Megan Arasteh / FDOT | Pinellas County Signal Phase and Timing (SPaT) Project: FDOT, in partnership with Pinellas County, deployed a Signal Phase and Timing (SPaT) project at 23 traffic signals along a portion of US 19 corridor. 11 traffic signals are at-grade intersections on US 19 and 12 signals are along frontage roads. This project adds to two other FDOT initiatives with the AASHTO SPaT Challenge: Tallahassee US 90 and Gainesville Trapezium. Project complete but not in RITSA. Additional information at <https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/pinellas-county-spat.shtm> | Add project to RITSA and merge as complete. | Yes | Yes |
| 137 | 10/13/2022 | D7 RITSA | Change Request Form: FDOT District 7 | Megan Arasteh / FDOT | SR 60 West Coast Smart Signal Corridor Project: Pinellas County, in partnership with FDOT District 7 and the City of Clearwater are proposing a connected vehicle project along SR 60 in Pinellas County. The proposed enhancements through the Smart Signal Corridor project include, new ATC controller upgrades, improved detection systems for both intersection and mid-block system detection, pedestrian detection systems, additional CCTV cameras to complete coverage and new field communications equipment upgrades. Additional information at <https://www.fdot.gov/traffic/teo-divisions.shtm/cav-ml-stamp/cv/maplocations/sr-60-west-coast-smart-signal-corridor-project> | Add new project. | Yes | Yes |