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|  | Florida ITS Architecture Support and Maintenance Project  District 4/6 Conversion Report  (ARC-IT Version 9.3) |

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Table of Contents

[1.0 Introduction 4](#_Toc187374384)

[2.0 Description of Changes 4](#_Toc187374385)

[3.0 Architecture Conversion Results 5](#_Toc187374386)

[3.1 Architecture Inventory Elements 5](#_Toc187374387)

[3.2 Architecture Information Flows 6](#_Toc187374388)

[3.3 Architecture Functional Requirements 6](#_Toc187374389)

List of Tables

[Table 1. Conversion Analysis of Inventory Elements 5](#_Toc187312443)

[Table 2. Conversion Analysis of Functional Requirements 7](#_Toc187312444)

# Introduction

This Architecture Conversion Report records the Florida District 4/6 Regional ITS Architecture (RITSA) update from its reference in the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 9.2 to ARC-IT Version 9.3. There were no updates made to the District 4/6 RITSA, so this report addresses notable results from the conversion process.

# Description of Changes

The architecture conversion process uses the Regional Architecture Development for Intelligent Transportation (RAD-IT) software Version 9.2 to convert the architecture to be compatible with ARC-IT Version 9.3. The process includes the following steps to accomplish the conversion.

* Architecture conversion: Conversion features in RAD-IT Version 9.3 convert the architecture database schema to be compatible with RAD-IT Version 9.3 and aligned to reference ARC-IT Version 9.3 content.
* Conversion analysis: Conversion information is produced by RAD-IT for the architecture conversion noting the changes made. The conversion information notes the schema and content changes, such as service splits or consolidations, element divisions, and information flow adjustments. Analysis is required for each converted item to assess the appropriateness of each change for the architecture.
* Architecture content update: The intent of the conversion process was to maintain the alignment of the converted Architecture content to the greatest extent possible with the pre-conversion Architecture content. Element physical object mapping changes, service package changes, information flow additions and adjustments, and the evolution of the standards mappings in ARC-IT Version 9.3 required changes to be made to the Architecture content. Unless it was necessary, no additional changes beyond those required to align the pre-conversion and converted architecture content were made. During the course of the Annual Architecture Maintenance Update, ARC-IT Version 9.2 features that could be considered as additional information to the Architecture will be assessed.
* Architecture website posting: The converted architecture will be posted to the Florida ITS Architecture website.

# Architecture Conversion Results

The District 4/6 RITSA was converted to be compatible with ARC-IT Version 9.3. The following sections highlight the changes made to the architecture as a result of the conversion process.

## Architecture Inventory Elements

Table 1 provides conversion results for architecture inventory elements impacted by the conversion process. The table information shows the element impacted, the results of the element conversion, the analysis disposition which may indicate a revision to the conversion results depending on the architecture content, and the notes of the conversion implementation. The changes identified in the table as “added” reflect that an additional mapping has been made to the specific element. For the majority of the elements identified, the vehicle subsystem mapping was added to reflect the general vehicle functionality adjustments in ARC-IT Version 9.3 and to properly align with the selected services involving the element.

Table 1. Conversion Analysis of Inventory Elements

| **Element Name** | **Change** | **Old Mapping** | **New Mapping** |
| --- | --- | --- | --- |
| All Aboard Florida Vehicles | Added |  | Vehicle |
| BCT Supervisor and Maintenance Vehicles | Added |  | Vehicle |
| Broward County Rail Vehicles | Added |  | Vehicle |
| Broward County TOPS Paratransit Vehicles | Added |  | Vehicle |
| County and City PWD Vehicles | Added |  | Vehicle |
| County Fire EMS/Rescue Vehicles | Added |  | Vehicle |
| County Sheriffs Vehicles | Added |  | Vehicle |
| FDOT District 4 Maintenance Vehicles | Added |  | Vehicle |
| FDOT District 4 Road Ranger Service Patrol Vehicles | Added |  | Vehicle |
| FDOT District 6 Maintenance Vehicles | Added |  | Vehicle |
| FDOT District 6 Road Ranger Service Patrol Vehicles | Added |  | Vehicle |
| Florida Highway Patrol Vehicles | Added |  | Vehicle |
| FTE Maintenance and Construction Vehicles | Added |  | Vehicle |
| GMX Road Ranger Service Patrol Vehicles | Added |  | Vehicle |
| GMX Roadway Maintenance Vehicles | Added |  | Vehicle |
| Indian River GoLine / Community Coach Transit Vehicles | Added |  | Vehicle |
| Local Fire/EMS Vehicles | Added |  | Vehicle |
| Local Police Vehicles | Added |  | Vehicle |
| Local TMA Transit Vehicles | Added |  | Vehicle |
| Local Transit Operators Vehicles | Added |  | Vehicle |
| Maintenance and Construction Personnel Device | Added |  | Personal |
| MARTY Vehicles | Added |  | Vehicle |
| Miami-Dade Transit Metrobuses | Added |  | Vehicle |
| Miami-Dade Transit Metromover Vehicles | Added |  | Vehicle |
| Miami-Dade Transit Metrorail Vehicles | Added |  | Vehicle |
| Miami-Dade Transit Special Transportation Services Vehicles | Added |  | Vehicle |
| Palm Tran Vehicles | Added |  | Vehicle |
| POMT Maintenance Vehicles | Added |  | Vehicle |
| Private Tow Wrecker Vehicles | Added |  | Vehicle |
| Private Travelers Personal Computing Devices | Added |  | Personal |
| Private/Public Ambulance Vehicles | Added |  | Vehicle |
| School District Transportation Buses | Added |  | Vehicle |
| SFRTA Commuter Bus | Added |  | Vehicle |
| St. Lucie Community Transit Vehicles | Added |  | Vehicle |
| SunPass Tag | Added |  | Personal |

## Architecture Information Flows

No architecture information flows were impacted by the conversion process.

## Architecture Functional Requirements

Table 2 provides conversion results for architecture functional requirements impacted by the conversion process. The table information shows the element impacted, the type of change made, the old functional object, number, and requirement, along with the new functional object, number, and requirement to display the change made.

Table 2. Conversion Analysis of Functional Requirements

| **Element Name** | **Change** | **Old Functional Object** | **Old Num** | **Old Req** | **New Functional Object** | **New Num** | **New Req** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| BCT Fixed Route Vehicles | Modified | Transit Vehicle On-Board Information Services | 2 | The transit vehicle shall broadcast advisories about the imminent arrival of the transit vehicle at the next stop via an on-board automated annunciation system. | Transit Vehicle On-Board Information Services | 2 | The transit vehicle shall broadcast advisories about the imminent arrival of the transit vehicle at the next station/stop via an on-board automated annunciation system. |
| BCT Fixed Route Vehicles | Modified | Vehicle Control Automation | 16 | The vehicle shall be capable of performing control actions based upon information received from other vehicles regarding their status approaching the intersection the vehicle is approaching. | Vehicle Control Automation | 16 | The vehicle shall be capable of performing control actions based upon information received from other vehicles regarding their status. This includes intersection-related status, maneuver coordination, and other status information received from vehicles in the vicinity. |
| BCT Fixed Route Vehicles | Modified | Vehicle Control Warning | 5 | The vehicle shall provide warnings to the driver based on information received from other vehicles regarding potentially hazardous road conditions or road hazards. | Vehicle Control Warning | 5 | The vehicle shall provide warnings to the driver based on information received from other vehicles regarding potentially hazardous road conditions, road hazards, or pending/in-progress vehicle maneuvers. |
| BCT Fixed Route Vehicles | Modified | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, border crossing information, and weather information. |
| BCT Fixed Route Vehicles | Modified | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, and other special information. | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, border crossing advisories, and other special information. |
| Broward County Field Equipment | Modified | Roadway Signal Control | 15 | The field element shall receive requests for emergency vehicle signal preemption. | Roadway Signal Control | 17 | The field element shall receive requests for signal preemption. |
| Broward County TMC | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| Commercial Vehicle | Modified | Vehicle Control Automation | 16 | The vehicle shall be capable of performing control actions based upon information received from other vehicles regarding their status approaching the intersection the vehicle is approaching. | Vehicle Control Automation | 16 | The vehicle shall be capable of performing control actions based upon information received from other vehicles regarding their status. This includes intersection-related status, maneuver coordination, and other status information received from vehicles in the vicinity. |
| Commercial Vehicle | Modified | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, border crossing information, and weather information. |
| Commercial Vehicle | Modified | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, and other special information. | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, border crossing advisories, and other special information. |
| County and Local Traffic Control Systems | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| FDOT District 4 Arterial Management System | Modified | TMC Advanced Rail Crossing Management | 6 | The center shall implement control plans to coordinate signalized intersections around highway-rail intersections (HRI), under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, equipment faults, pedestrian crossings, etc. | TMC Advanced Rail Crossing Management | 6 | The center shall support control plans to coordinate signalized intersections around highway-rail intersections (HRI), under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, equipment faults, pedestrian crossings, etc. |
| FDOT District 4 Arterial Management System | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| FDOT District 4 CAV Field Equipment | Modified | RSE Intersection Management | 4 | The field element shall receive signal priority requests from commercial vehicles and forward to the traffic signal controller. | RSE Intersection Management | 4 | The field element shall receive signal priority requests from commercial vehicles and forward to the traffic signal controller. |
| FDOT District 4 Maintenance Vehicles | Modified | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, and other special information. | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, border crossing advisories, and other special information. |
| FDOT District 4 Palm Beach TMC | Modified | TMC Advanced Rail Crossing Management | 6 | The center shall implement control plans to coordinate signalized intersections around highway-rail intersections (HRI), under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, equipment faults, pedestrian crossings, etc. | TMC Advanced Rail Crossing Management | 6 | The center shall support control plans to coordinate signalized intersections around highway-rail intersections (HRI), under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, equipment faults, pedestrian crossings, etc. |
| FDOT District 4 Road Ranger Service Patrol Vehicles | Modified | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, border crossing information, and weather information. |
| FDOT District 4 Road Ranger Service Patrol Vehicles | Modified | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, and other special information. | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, border crossing advisories, and other special information. |
| FDOT District 6 CAV Field Equipment | Modified | RSE Intersection Management | 10 | The field element shall receive signal prioity requests from maintenance and construction vehicles and forward to the traffic signal controller. | RSE Intersection Management | 10 | The field element shall receive signal priority requests from maintenance and construction vehicles and forward to the traffic signal controller. |
| FDOT District 6 CAV Field Equipment | Modified | RSE Intersection Management | 4 | The field element shall receive signal prioity requests from commercial vehicles and forward to the traffic signal controller. | RSE Intersection Management | 4 | The field element shall receive signal priority requests from commercial vehicles and forward to the traffic signal controller. |
| FDOT District 6 Signal Field Equipment | Modified | Roadway Signal Control | 15 | The field element shall receive requests for emergency vehicle signal preemption. | Roadway Signal Control | 17 | The field element shall receive requests for signal preemption. |
| FDOT District 6 SunGuide Transportation Management Center | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| Indian River County Field Equipment | Modified | Roadway Signal Control | 15 | The field element shall receive requests for emergency vehicle signal preemption. | Roadway Signal Control | 17 | The field element shall receive requests for signal preemption. |
| Indian River County TMC | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| Local Police Vehicles | Modified | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, border crossing information, and weather information. |
| Miami-Dade Traffic Control Center | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| Miami-Dade Transit Metrobuses | Modified | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, border crossing information, and weather information. |
| Miami-Dade Transit Metrobuses | Modified | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, and other special information. | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, border crossing advisories, and other special information. |
| Palm Beach County Field Equipment | Modified | Roadway Signal Control | 15 | The field element shall receive requests for emergency vehicle signal preemption. | Roadway Signal Control | 17 | The field element shall receive requests for signal preemption. |
| Palm Beach County TMC | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| St. Lucie County Traffic Signal System | Modified | TMC Signal Control | 10 | The center shall adjust signal timing in respond to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. | TMC Signal Control | 10 | The center shall adjust signal timing in response to a signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other requests for right-of-way. |
| Vehicles | Modified | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. | Vehicle Traveler Information Reception | 1 | The vehicle shall receive traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, border crossing information, and weather information. |
| Vehicles | Modified | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, and other special information. | Vehicle Traveler Information Reception | 2 | The vehicle shall receive advisory information, such as evacuation information, proximity to a maintenance and construction vehicle, wide-area alerts, work zone intrusion information, variable speed limits, tunnel entrance restrictions, border crossing advisories, and other special information. |