CMAP

Update Regional ITS Architecture & Develop Communications System White Paper

Contract Team:

TranSmart/EJM

AECOM

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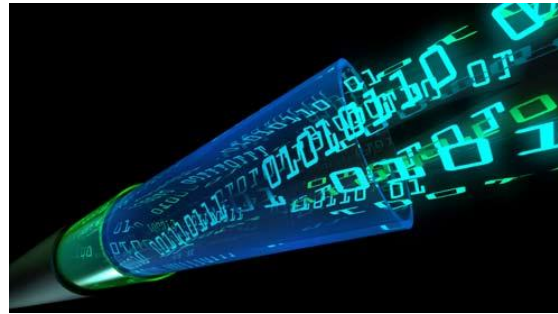Advanced Technology Task Force – March 21st, 2019

Objectives

- Convert from Turbo to RAD-IT

- Outreach and Facilitate Regional Architecture Update and Discussion

  - » Capture the NEW Service Packages

  - » Remove outdated references

  - » Pre-Interview Materials

Objectives

- Communications Scan and Whitepaper

  » State-of-Practice and Near-term considerations

- Regional Architecture Revisions

- Maintenance Plan

What's New

- Updated and Streamlined Online Interface
  - » Was Previously based on 1990s concepts
  - » 'Service' Packages Reformatted
- Integrated with Connected and Autonomous Vehicles (CVRIA)
  - » CVRIA UI copied for ARC-IT Update
- SET-IT for projects and Systems Engineering
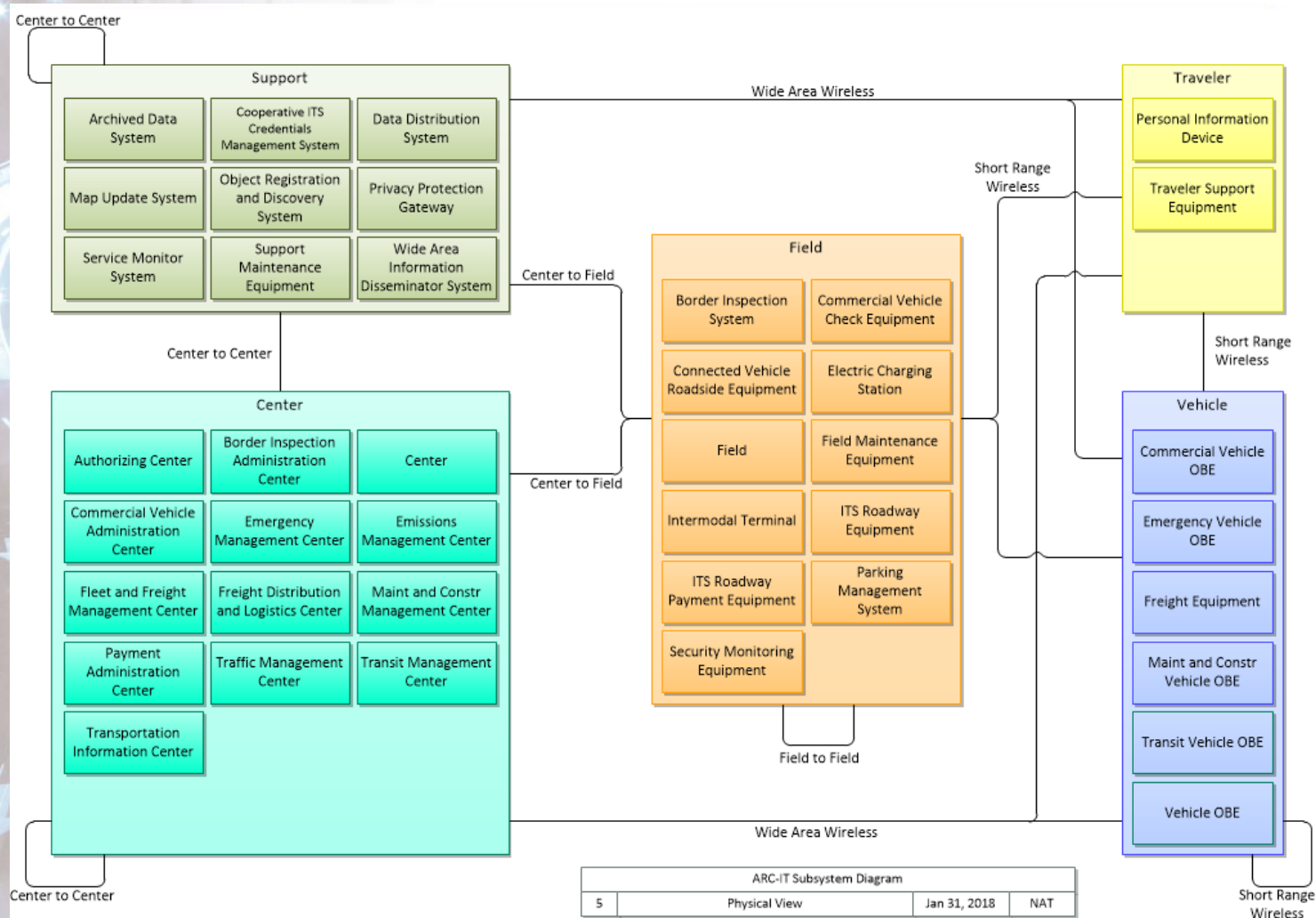
National ITS Architecture 7.1 Heritage

The table below shows how the National ITS Architecture 7.1 service packages trace to ARC-IT 8.0 service packages.

National ITS Architecture 7.1 Service Package		ARC-IT 8.0 Service Package	
Short Name ▲	Name	Short Name	Name
AD1	ITS Data Mart	DM01	ITS Data Warehouse
AD2	ITS Data Warehouse	DM01	ITS Data Warehouse
AD3	ITS Virtual Data Warehouse	DM01	ITS Data Warehouse
APTS01	Transit Vehicle Tracking	PT01	Transit Vehicle Tracking
APTS02	Transit Fixed-Route Operations	PT02	Transit Fixed-Route Operations
APTS03	Demand Response Transit Operations	PT03	Dynamic Transit Operations
APTS04	Transit Fare Collection Management	PT04	Transit Fare Collection Management
APTS05	Transit Security	PT05	Transit Security
APTS06	Transit Fleet Management	PT06	Transit Fleet Management
APTS07	Multi-modal Coordination	PT14	Multi-modal Coordination
APTS08	Transit Traveler Information	PT08	Transit Traveler Information
APTS09	Transit Signal Priority	PT09	Transit Signal Priority
APTS10	Transit Passenger Counting	PT07	Transit Passenger Counting
APTS11	Multimodal Connection Protection	PT17	Transit Connection Protection
ATIS01	Broadcast Traveler Information	TI01	Broadcast Traveler Information
ATIS02	Interactive Traveler Information	TI02	Personalized Traveler Information
ATIS03	Autonomous Route Guidance	TI03	Dynamic Route Guidance
ATIS04	Dynamic Route Guidance	TI03	Dynamic Route Guidance
ATIS05	ISP Based Trip Planning and Route Guidance	TI04	Infrastructure-Provided Trip Planning and Route Guidance

ATIS06	Transportation Operations Data Sharing	SU03	Data Distribution
ATIS07	Travel Services Information and Reservation	TI05	Travel Services Information and Reservation
ATIS08	Dynamic Ridesharing	TI06	Dynamic Ridesharing and Shared Use Transportation
ATIS09	In Vehicle Signing	TI07	In-Vehicle Signage
		VS05	Curve Speed Warning
		VS09	Reduced Speed Zone Warning / Lane Closure
		VS10	Restricted Lane Warnings
ATIS10	Short Range Communications Traveler Information	TI01	Broadcast Traveler Information
ATMS01	Network Surveillance	TM01	Infrastructure-Based Traffic Surveillance
ATMS02	Traffic Probe Surveillance	TM02	Vehicle-Based Traffic Surveillance
ATMS03	Traffic Signal Control	TM03	Traffic Signal Control
ATMS04	Traffic Metering	TM05	Traffic Metering
ATMS05	HOV Lane Management	ST06	HOV/HOT Lane Management
ATMS06	Traffic Information Dissemination	TM06	Traffic Information Dissemination
ATMS07	Regional Traffic Management	TM07	Regional Traffic Management
ATMS08	Traffic Incident Management System	TM08	Traffic Incident Management System
ATMS09	Transportation Decision Support and Demand Management	TM09	Integrated Decision Support and Demand Management
ATMS10	Electronic Toll Collection	PT18	Integrated Multi-Modal Electronic Payment
		TM10	Electronic Toll Collection
ATMS11	Emissions Monitoring and Management	ST01	Emissions Monitoring
ATMS12	Roadside Lighting System Control	ST04	Roadside Lighting
ATMS13	Standard Railroad Grade Crossing	TM13	Standard Railroad Grade Crossing

ATMS14	Advanced Railroad Grade Crossing	TM14	Advanced Railroad Grade Crossing
ATMS15	Railroad Operations Coordination	TM15	Railroad Operations Coordination
ATMS16	Parking Facility Management	PM01	Parking Space Management
		PM03	Parking Electronic Payment
ATMS17	Regional Parking Management	PM04	Regional Parking Management
ATMS18	Reversible Lane Management	TM16	Reversible Lane Management
ATMS19	Speed Warning and Enforcement	TM17	Speed Warning and Enforcement
ATMS20	Drawbridge Management	TM18	Drawbridge Management
ATMS21	Roadway Closure Management	TM19	Roadway Closure Management
ATMS22	Variable Speed Limits	TM20	Variable Speed Limits
ATMS23	Dynamic Lane Management and Shoulder Use	TM22	Dynamic Lane Management and Shoulder Use
ATMS24	Dynamic Roadway Warning	TM12	Dynamic Roadway Warning
ATMS25	VMT Road User Payment	PT18	Integrated Multi-Modal Electronic Payment
		TM11	Road Use Charging
ATMS26	Mixed Use Warning Systems	VS12	Pedestrian and Cyclist Safety
AVSS01	Vehicle Safety Monitoring	VS01	Autonomous Vehicle Safety Systems
AVSS02	Driver Safety Monitoring	VS01	Autonomous Vehicle Safety Systems
AVSS03	Longitudinal Safety Warning	VS01	Autonomous Vehicle Safety Systems
AVSS04	Lateral Safety Warning	VS01	Autonomous Vehicle Safety Systems
AVSS05	Intersection Safety Warning	VS13	Intersection Safety Warning and Collision Avoidance
AVSS06	Pre-Crash Restraint Deployment	VS01	Autonomous Vehicle Safety Systems
		VS02	V2V Basic Safety
AVSS07	Driver Visibility Improvement	VS01	Autonomous Vehicle Safety Systems
AVSS08	Advanced Vehicle Longitudinal Control	VS14	Cooperative Adaptive Cruise Control

Physical View: Sausage Upgrade

Conversion Concepts to Date

- Smooth Conversion; Dense with Info
  » 150+ existing projects modeled
  » 125+ stakeholders, 335+ inventory items
- Upcoming Stakeholder Meetings
  » Create architecture outputs specific for stakeholder, service, element, etc.
  » Maximize value of stakeholder meetings, minimize wasted time

#	Task	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20
1	Project Management	■	■	■	■	■	■	■	■	■	■	■	■	■
2	NE IL ITS Architecture V3 Software Conversion		■											
	Initial RAD-IT Conversion		◆											
	Checks and Updates		◆											
3	Current ITS Architecture Review		■	■										
	Findings Memorandum		■	■	◆									
4	Outreach & Data Collection		■	■	■	■	■							
	Stakeholder List		◆											
	Outreach Summary Document		■	■	■	■	■	◆						
	List of Stakeholder Materials Reviewed		■	■	■	■	◆							
5	Communications Scan				■	■	■	■	■	■				
	Communications System Whitepaper				■	■	■	■	■	◆				
6	Architecture Revision						■	■	■	■	■			
	Updated Northeastern Illinois ITS Architecture						■	■	■	■	◆			
	I-290 Integrated Corridor Management Concept of Operations (support)						■	■	■	■	◆			
7	Update Architecture Elements						■	■	■	■	■			
	Updated Northeastern Illinois ITS Architecture Database						■	■	■	■	◆			
8	Architecture Website	■	■	■	■	■	■	■	■	■	■	■	■	■
9	ITS Architecture Executive Summary										■	■	■	■
	Regional Architecture Executive Summary										■	■	■	◆
10	ITS Architecture Maintenance Plan										■	■		
	Regional Architecture Maintenance Plan										■	◆		

Next Steps

- Expect Calls to Request on-site interviews
- Expect Summary of Knowns
- Plan to Share Changes

Overarching Reference

https://local.iteris.com/arc-it/index.html

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