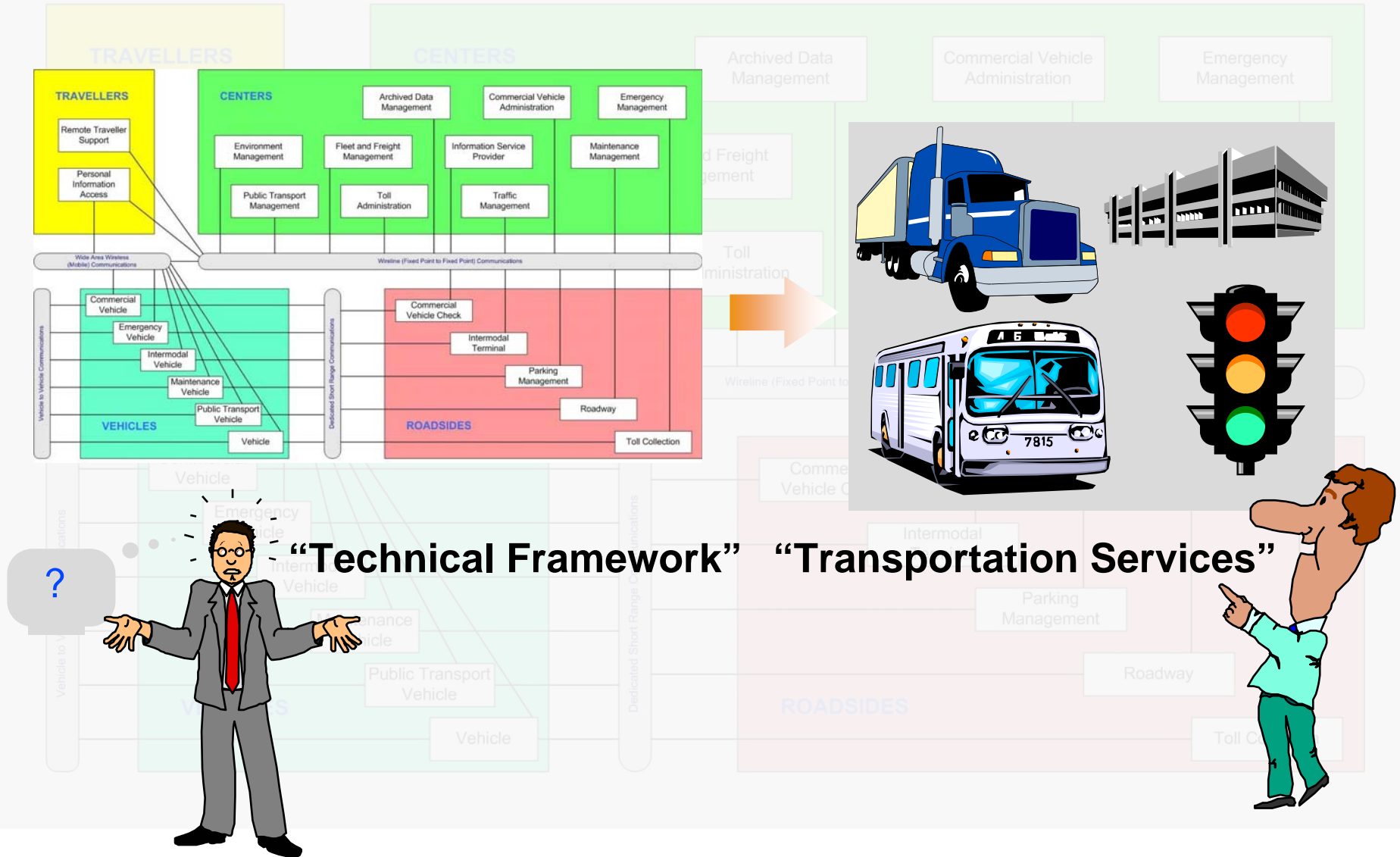


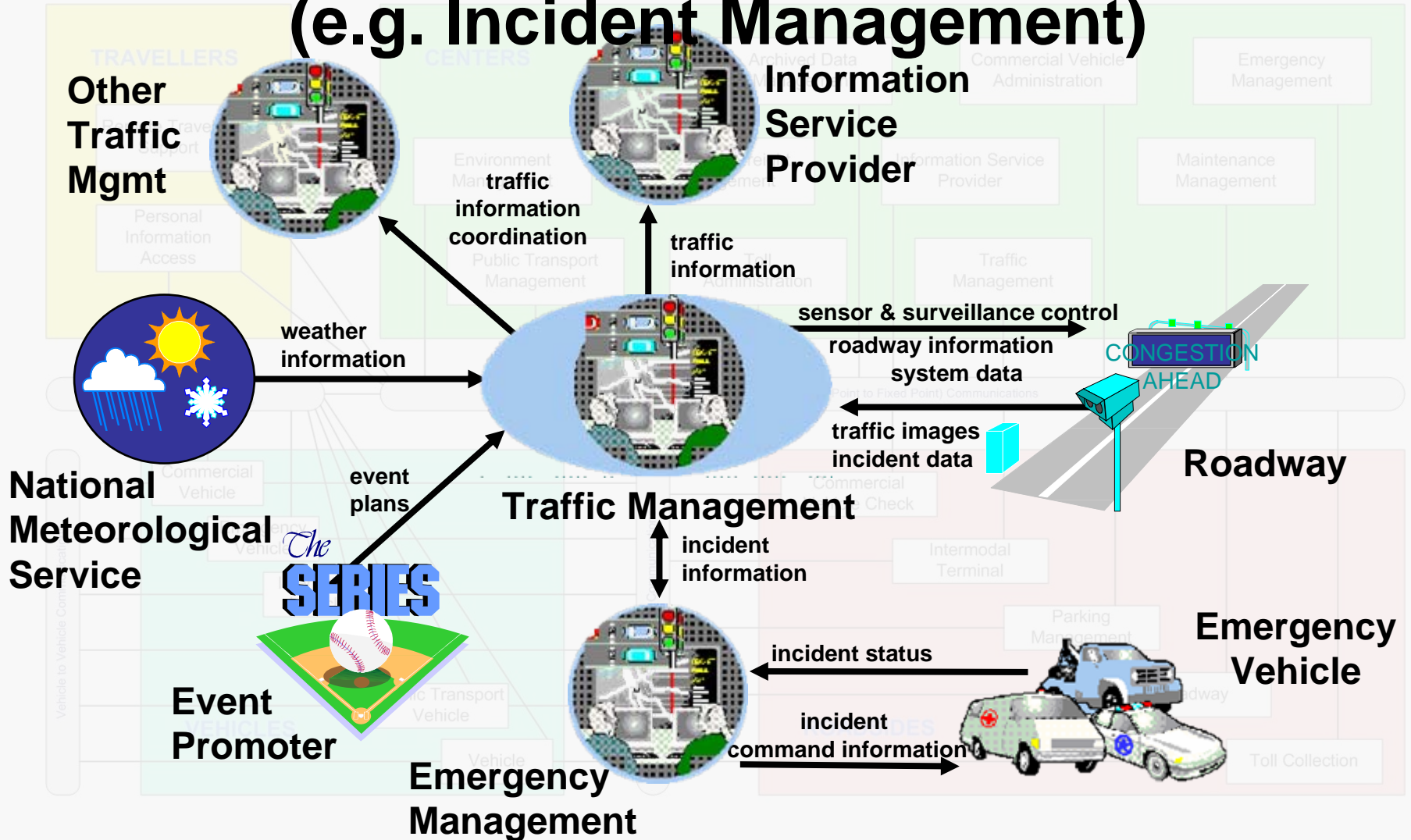
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Focused Architecture Views



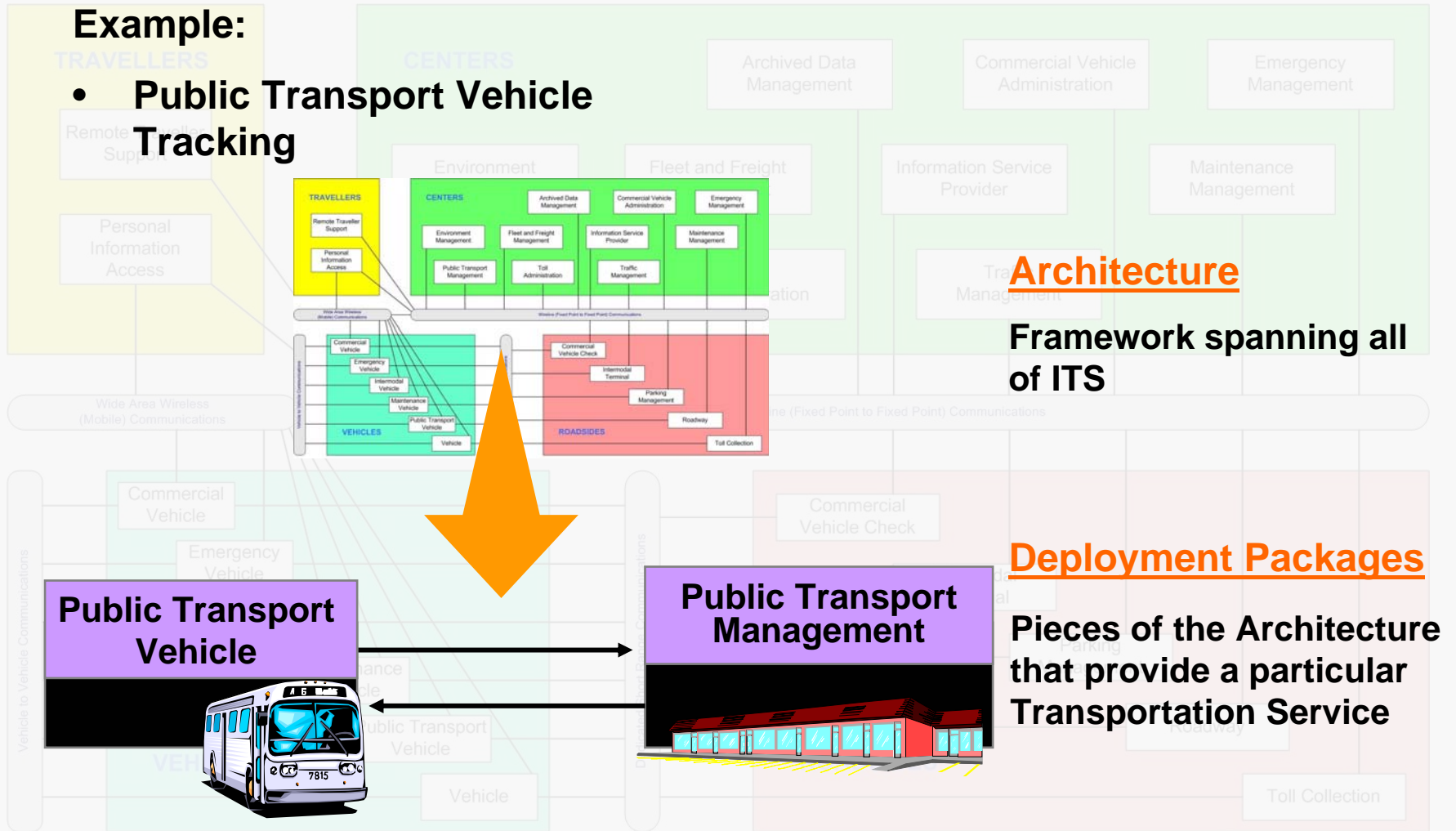
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Many ITS Services are Highly Distributed (e.g. Incident Management)



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Deployment Packages



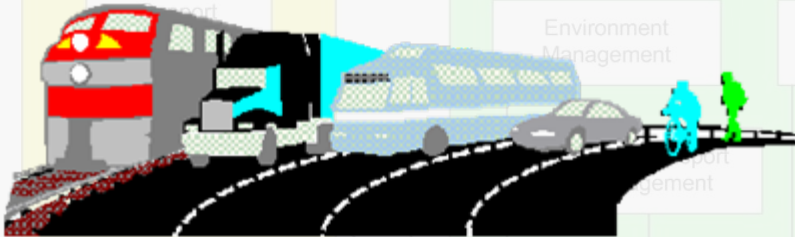
Deployment Packages (2)

- Identify the pieces and Collect together several different:-
 - Subsystems, Terminators, Equipment packages, Architecture Flows and Supporting Logical Architecture Elements to provide the desired services
- More specific than User Services
 - Segregate potential early deployments from higher risk services
 - Map closely to Sub-services
- The DP then describe how the packages can be used to plan and implement the Integrated Transportation System to the local needs

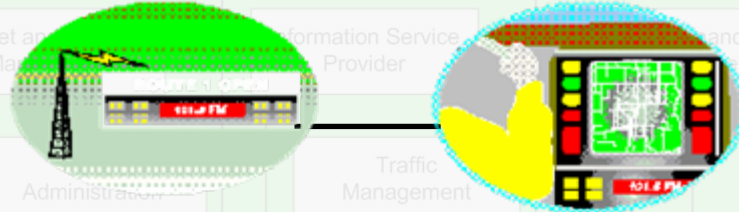
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Deployment Packages Identify Diverse ITS Implementations

Address Each User



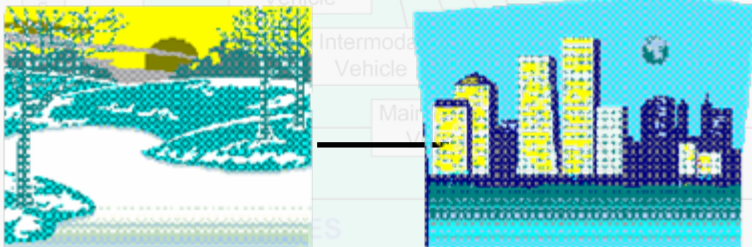
Support Multiple Service Levels



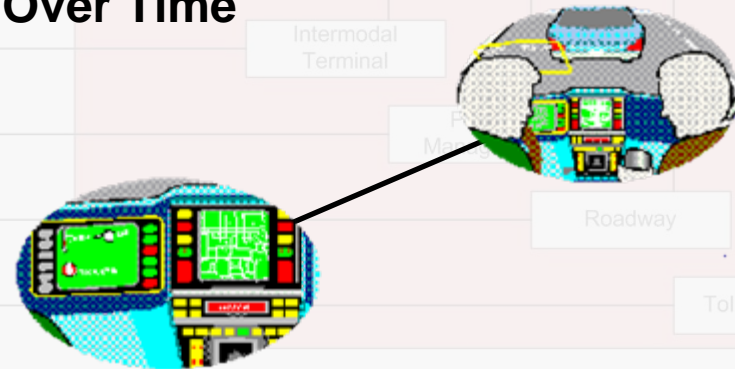
Broadcast Traveller Information

Dynamic Route Guidance

Provide for Varied Regional Needs

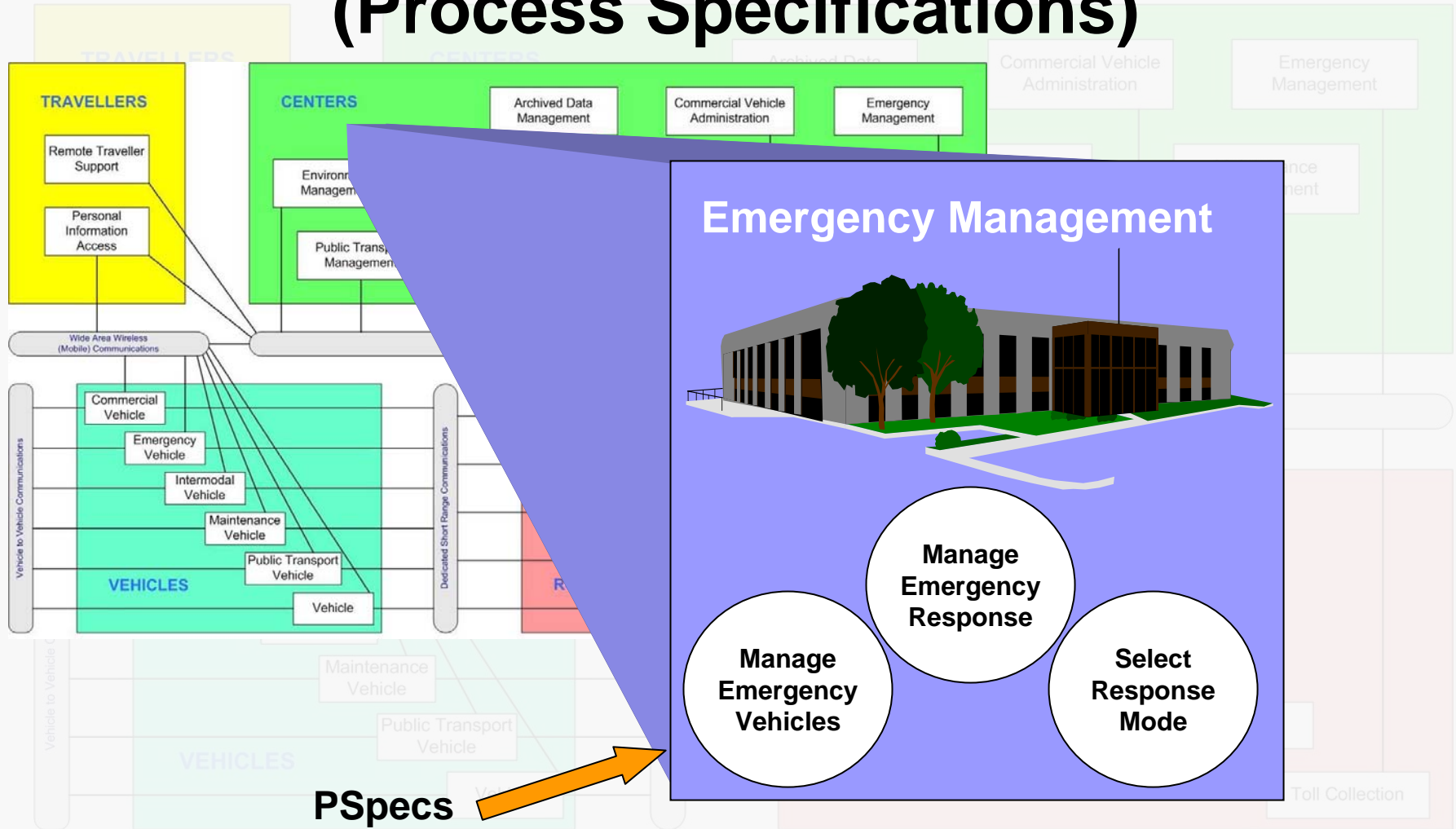


Support Progressive Deployments Over Time



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Subsystems are Comprised of PSpecs (Process Specifications)

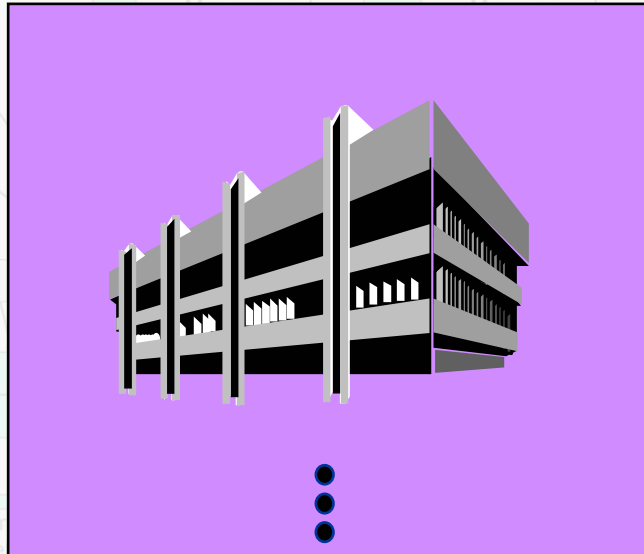


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Deployment Packages, Subsystems and PSpecs

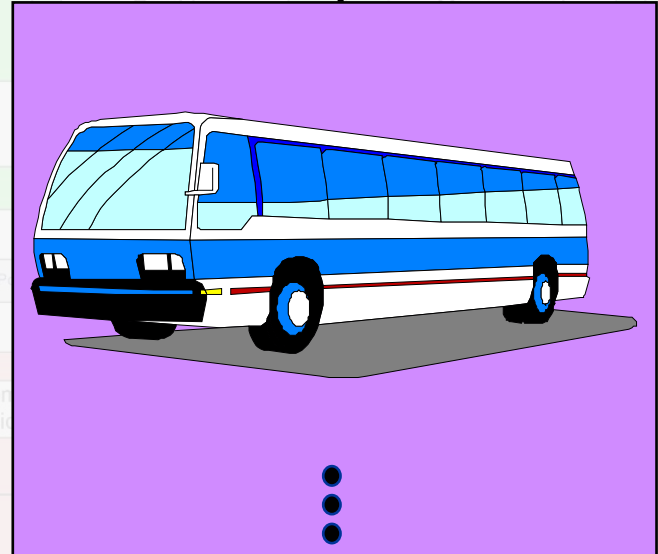
Subsystems

Public Transport Management



Transit Centre Tracking and Dispatch

Public Transport Vehicle



On-Board Transit Trip Monitoring

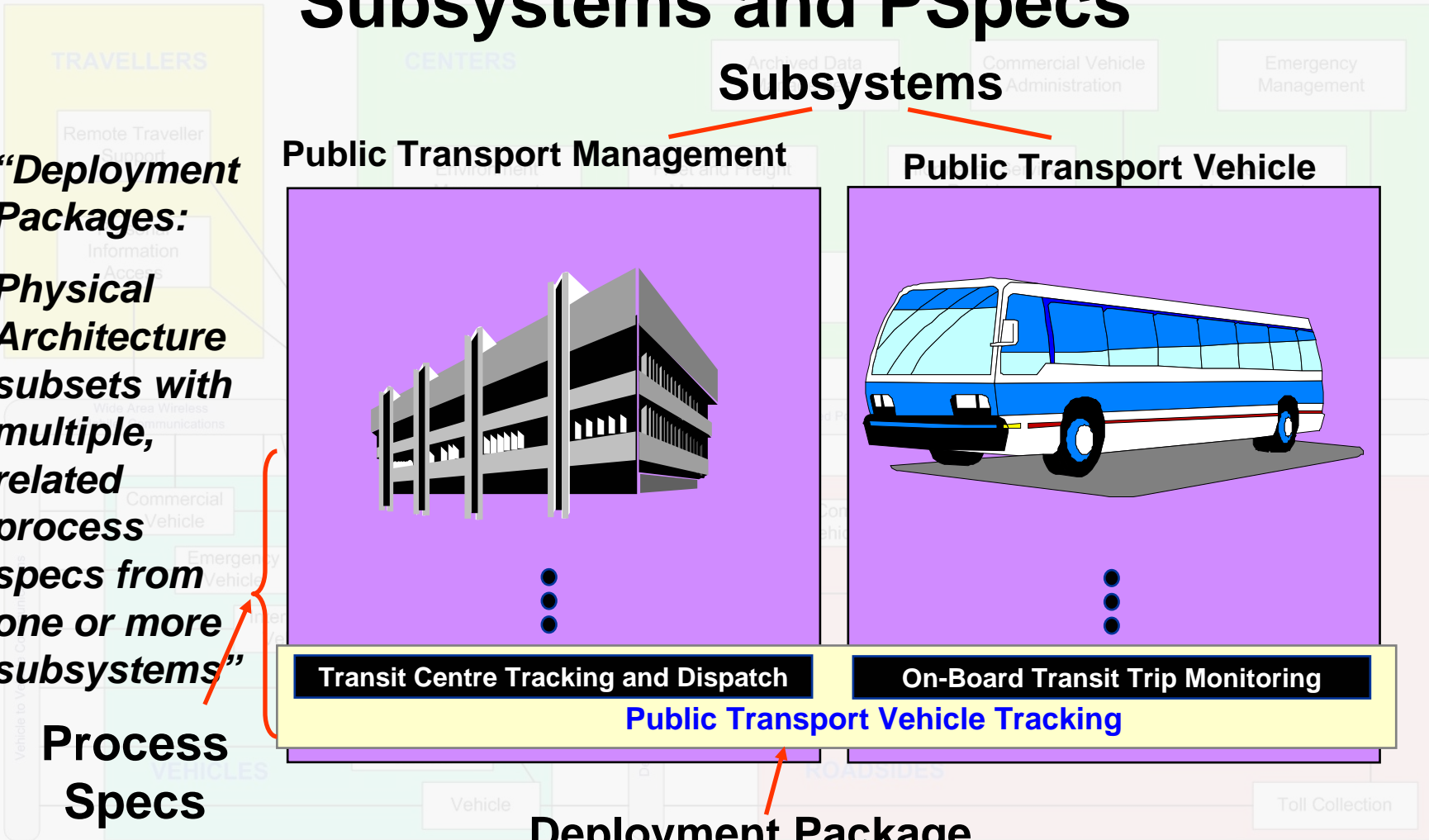
Public Transport Vehicle Tracking

Deployment Package

“Deployment Packages:

Physical Architecture subsets with multiple, related process specs from one or more subsystems”

Process Specs



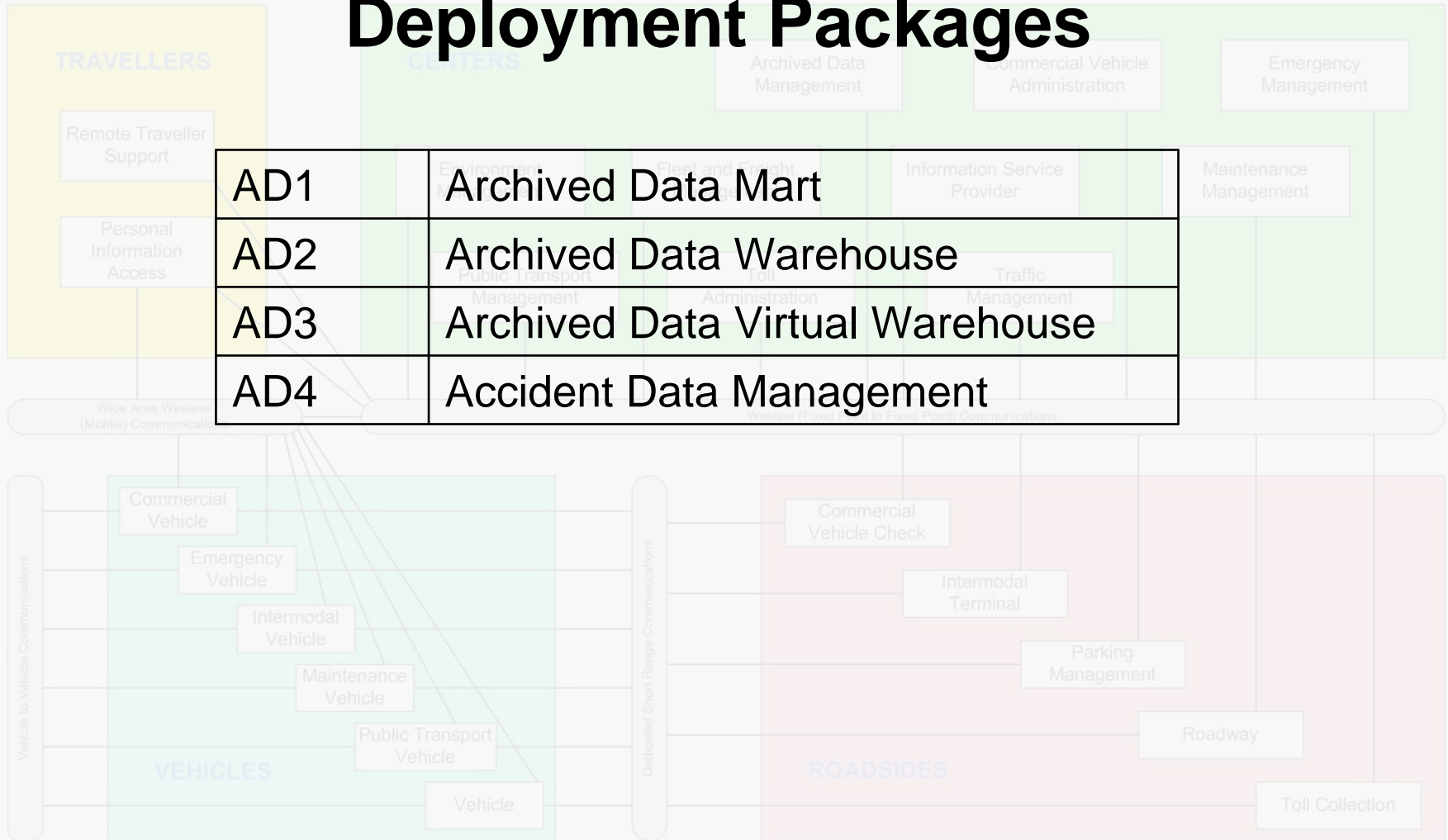
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Deployment Packages



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Archived Data Management Deployment Packages



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Public Transportation Deployment Packages

APTS1	Public transport Vehicle Tracking
APTS2	Public transport Fixed-Route Operations
APTS3	Demand Responsive Public transport
APTS4	Passenger and Fare Management
APTS5	Public Travel Security
APTS6	Public Transport Maintenance
APTS7	Multi-Modal Co-ordination
APTS8	En-Route Public transport Information
APTS9	Multi-Modal Connection Protection

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Traveller Information Deployment Packages

ATIS1	Broadcast Traveller Information
ATIS2	Interactive Traveller Information
ATIS3	Autonomous Route Guidance
ATIS4	Dynamic Route Guidance
ATIS5	ISP-Based Route Guidance
ATIS6	Dynamic Traffic Assignment
ATIS7	Traveller Services Payment and Reservation
ATIS8	Ride Matching
ATIS9	In-Vehicle Signing

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Traffic Management Deployment Packages

ATMS01	Traffic Network Flow Monitoring
ATMS02	Probe-Based Flow Monitoring
ATMS03	Surface Street Control
ATMS04	Highway Control
ATMS05	HOV Lane Management
ATMS06	Traffic Information Dissemination
ATMS07	Regional Traffic Control
ATMS08	Incident Risk Prediction System
ATMS09	Predictive Demand Management
ATMS10	Electronic Toll Collection
ATMS11	Emissions Management
ATMS12	Virtual TMC and Vehicle-Based Sensing
ATMS13	Basic At-Grade Crossing Control
ATMS14	Advanced At-Grade Crossing
ATMS15	Modal Operations Co-ordination
ATMS16	Electronic Parking Payment and Parking Facility Management

ATMS17	Reversible Lane Management
ATMS18	Road Weather Information System
ATMS19	Regional Parking Management
ATMS20	Roadway Environmental Sensing
ATMS21	Roadway and Weather Data Fusion
ATMS22	Environmental Information Dissemination
ATMS23	Roadway Micro-Prediction
ATMS24	Maintenance Fleet Management
ATMS25	Smart Work Zones
ATMS26	Dynamic Roadway Warning
ATMS27	Variable Speed Limit and Enforcement
ATMS28	Signal Enforcement
ATMS29	Mixed Use Warning Systems
ATMS30	Automated Non-Vehicular Road User Protection

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Vehicle Safety Deployment Packages

AVSS01	Vehicle Safety Monitoring
AVSS02	Driver Safety Monitoring
AVSS03	Longitudinal Warning Systems
AVSS04	Lateral Warning Systems
AVSS05	Intersection Collision Warning
AVSS06	Pre-Collision Restraint Deployment
AVSS07	Sensor-Based Driving Safety Enhancement
AVSS08	Longitudinal Collision Avoidance
AVSS09	Lateral Collision Avoidance
AVSS10	Intersection Collision Avoidance
AVSS11	Automated Vehicle Operation

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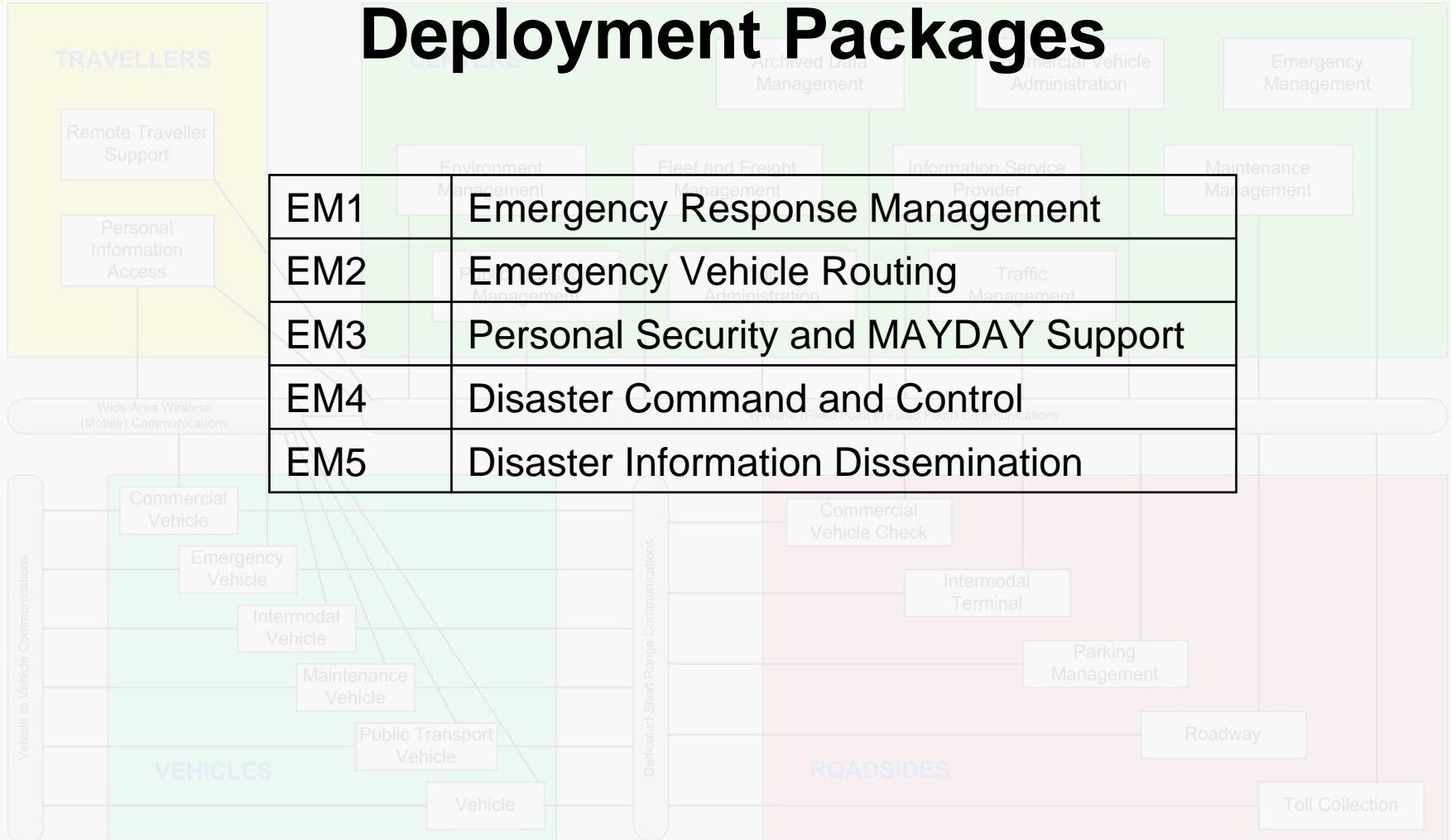
Commercial Vehicle Operations Deployment Packages

CVO01	Fleet Administration
CVO02	Freight Administration
CVO03	Electronic Clearance
CVO04	Commercial Vehicle Administrative Processes
CVO05	International Border Crossing Clearance
CVO06	Weigh-In-Motion (WIM)
CVO07	Roadside CVO Safety
CVO08	On-Board Safety Monitoring
CVO09	CVO Fleet Maintenance
CVO10	Hazardous Material Incident Response
CVO11	Freight In-Public transport Monitoring
CVO12	Freight Terminal Management

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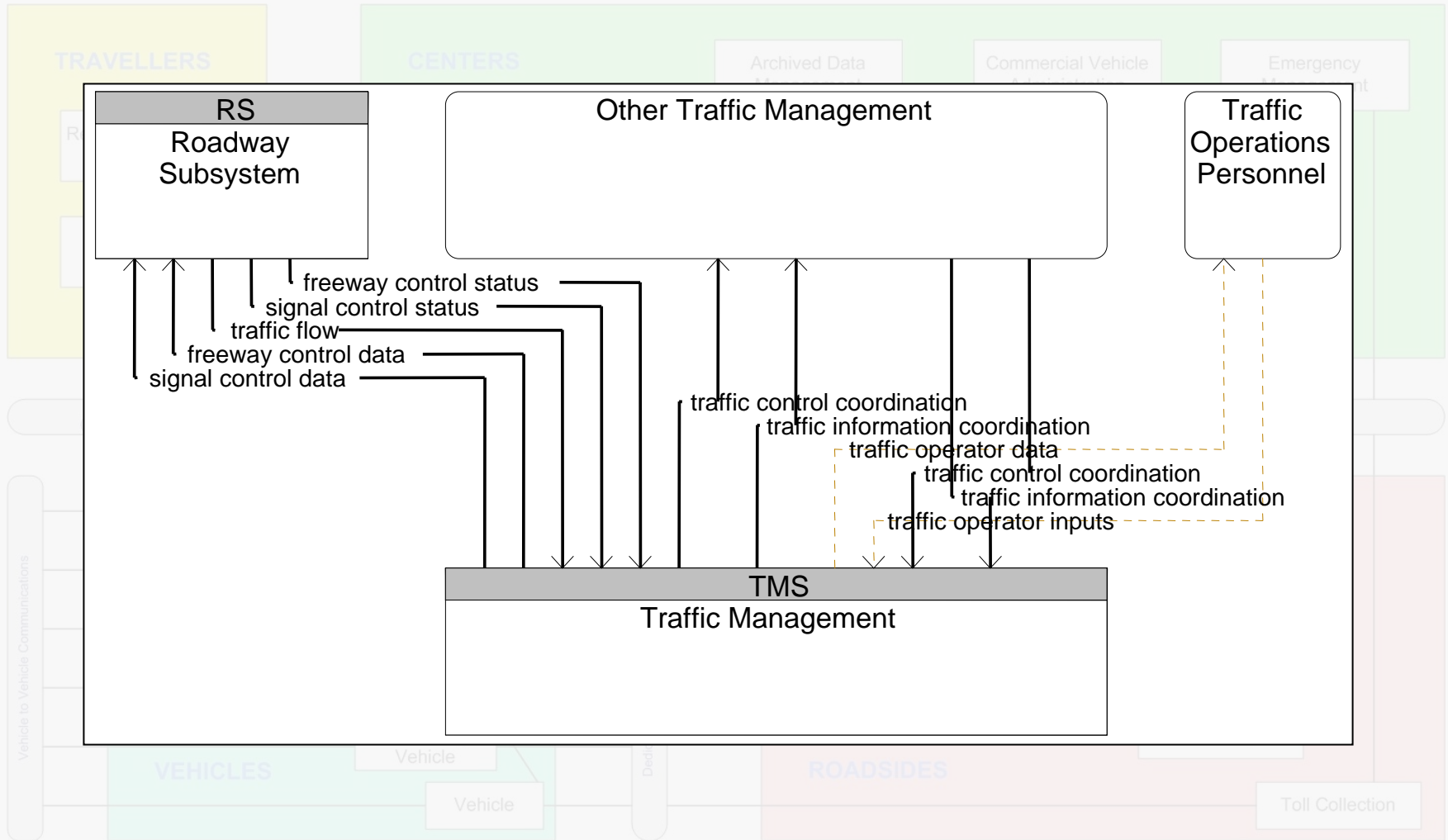
Emergency Management Deployment Packages

EM1	Emergency Response Management
EM2	Emergency Vehicle Routing
EM3	Personal Security and MAYDAY Support
EM4	Disaster Command and Control
EM5	Disaster Information Dissemination



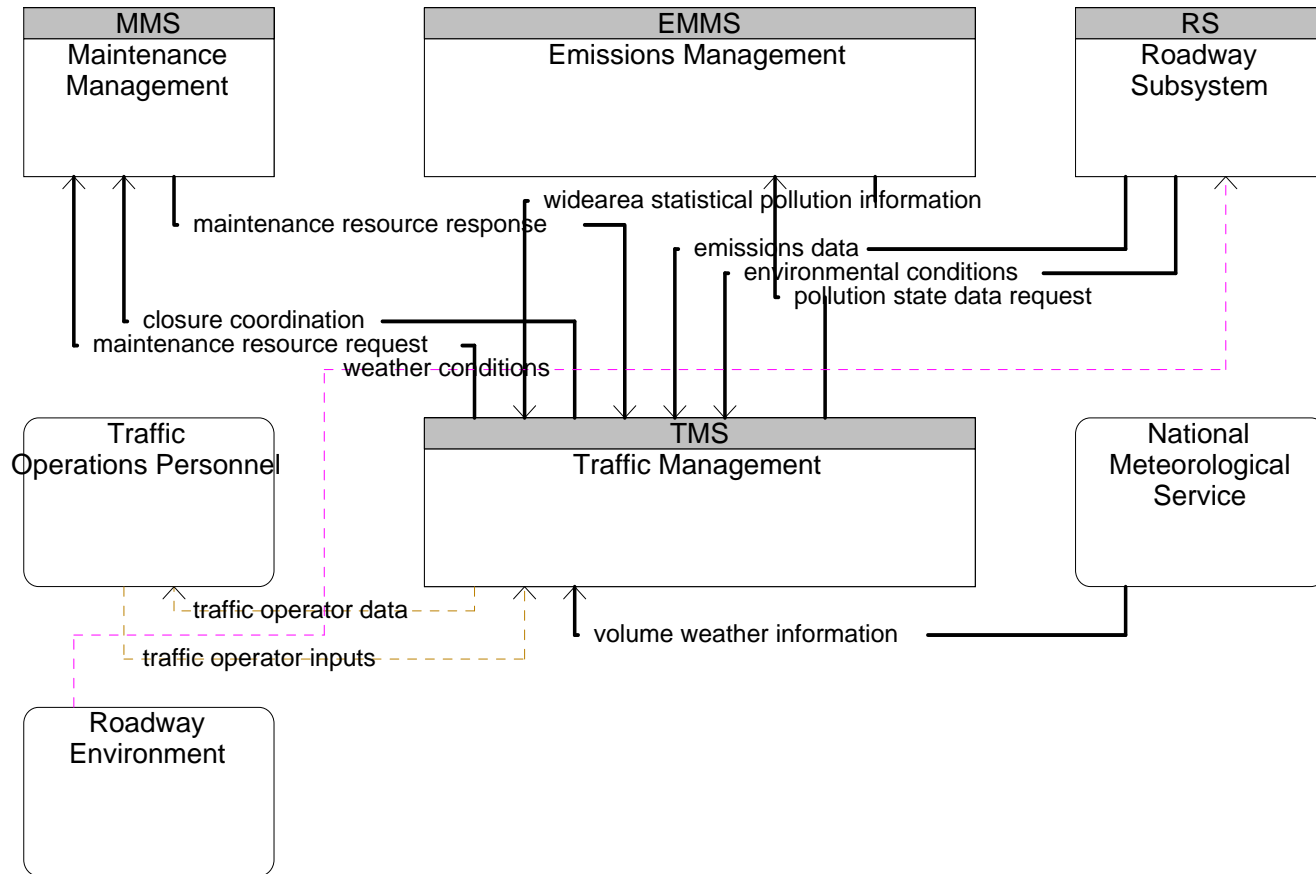
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Regional Traffic Control



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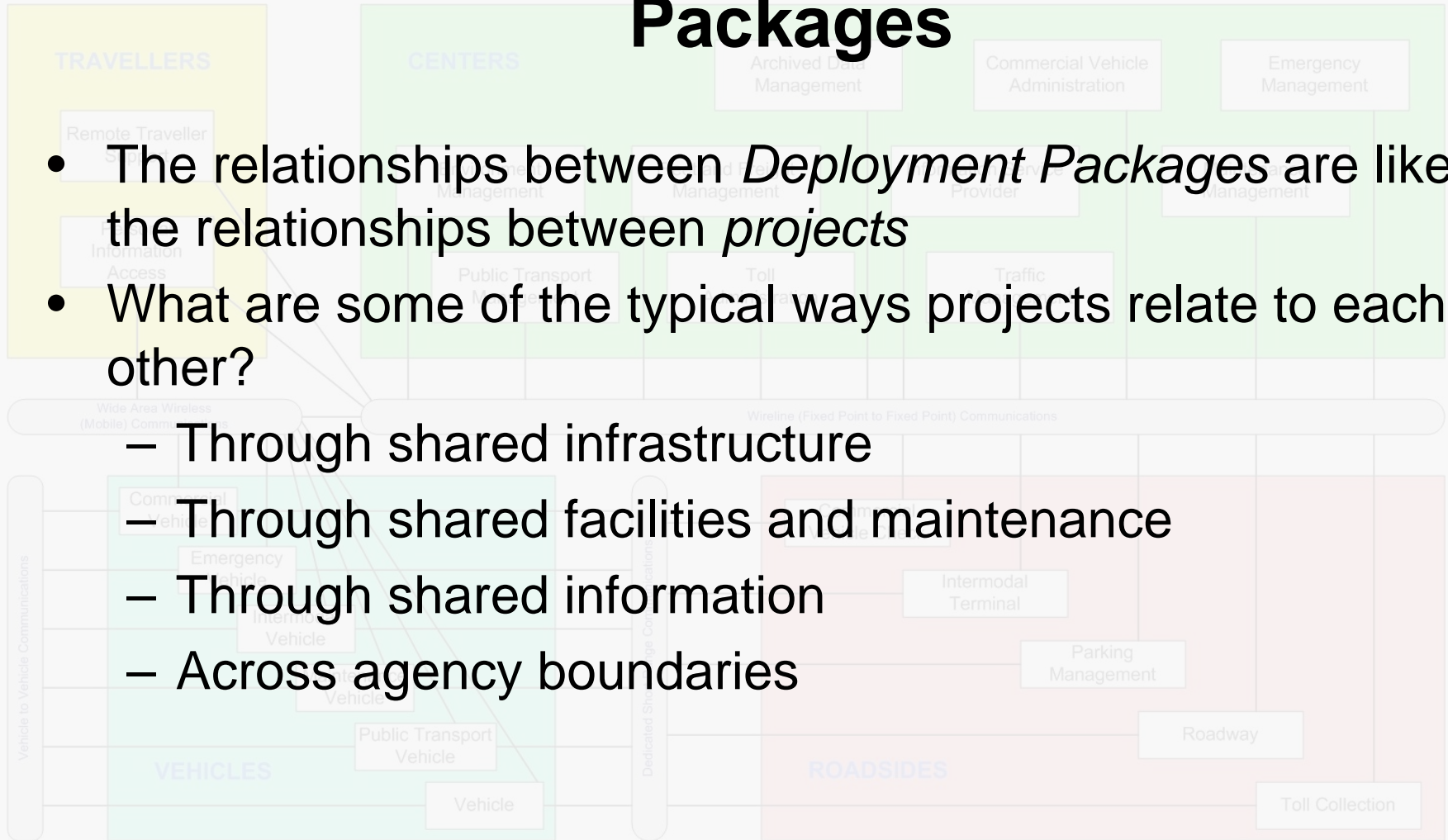
Road Weather Information System



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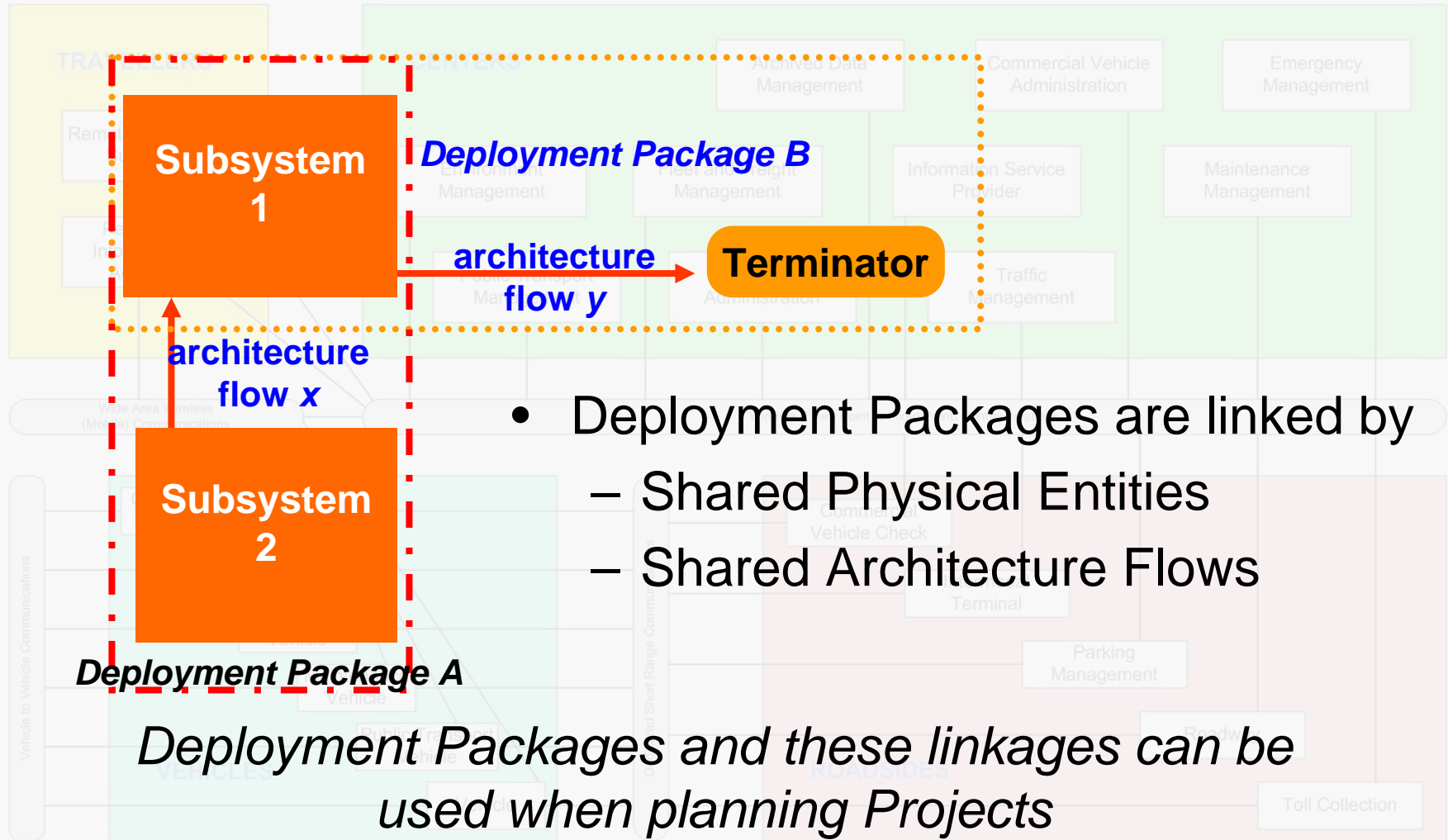
Relationships between Deployment Packages

- The relationships between *Deployment Packages* are like the relationships between *projects*
- What are some of the typical ways projects relate to each other?
 - Through shared infrastructure
 - Through shared facilities and maintenance
 - Through shared information
 - Across agency boundaries

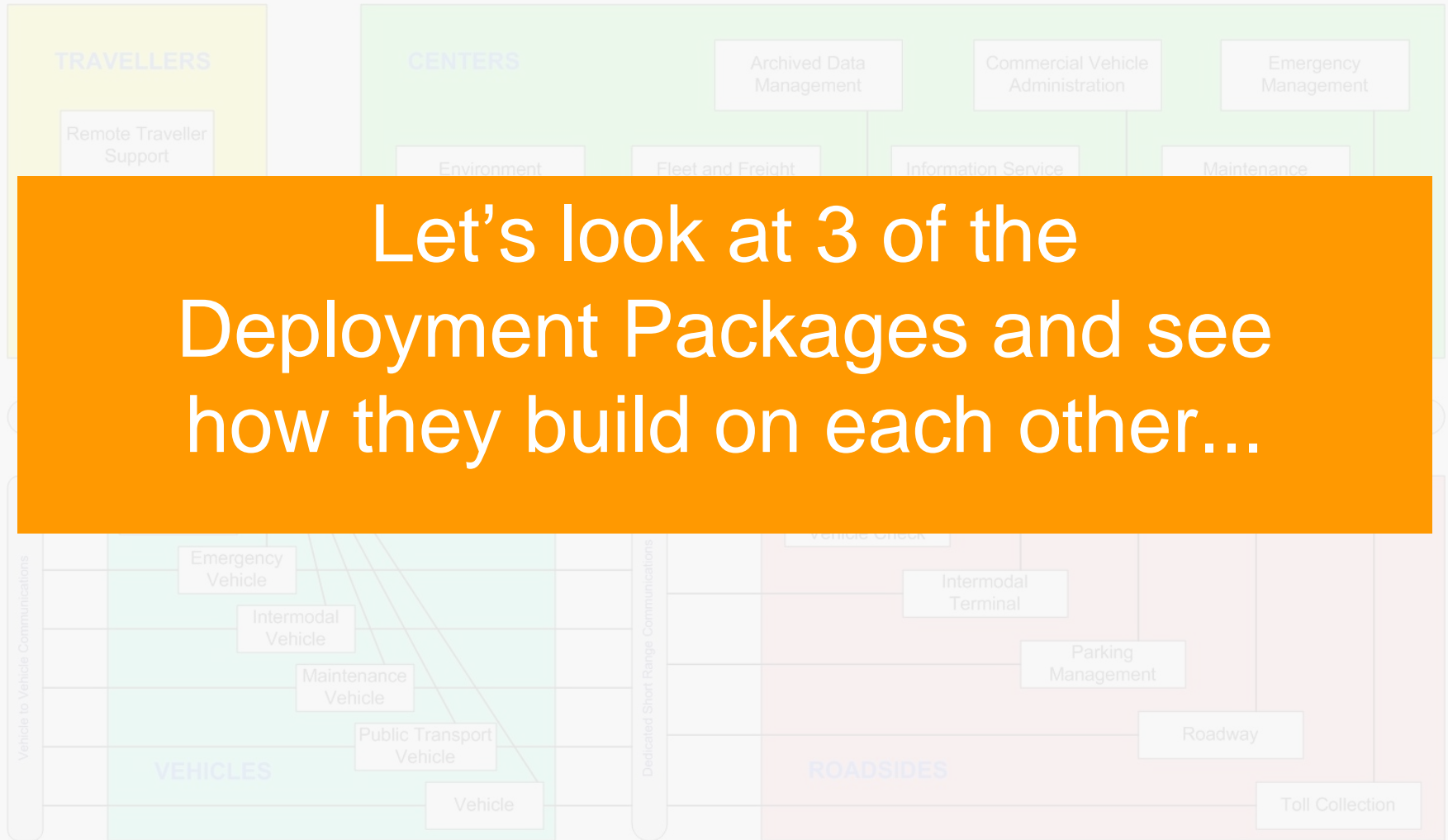


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Deployment Package Linkages

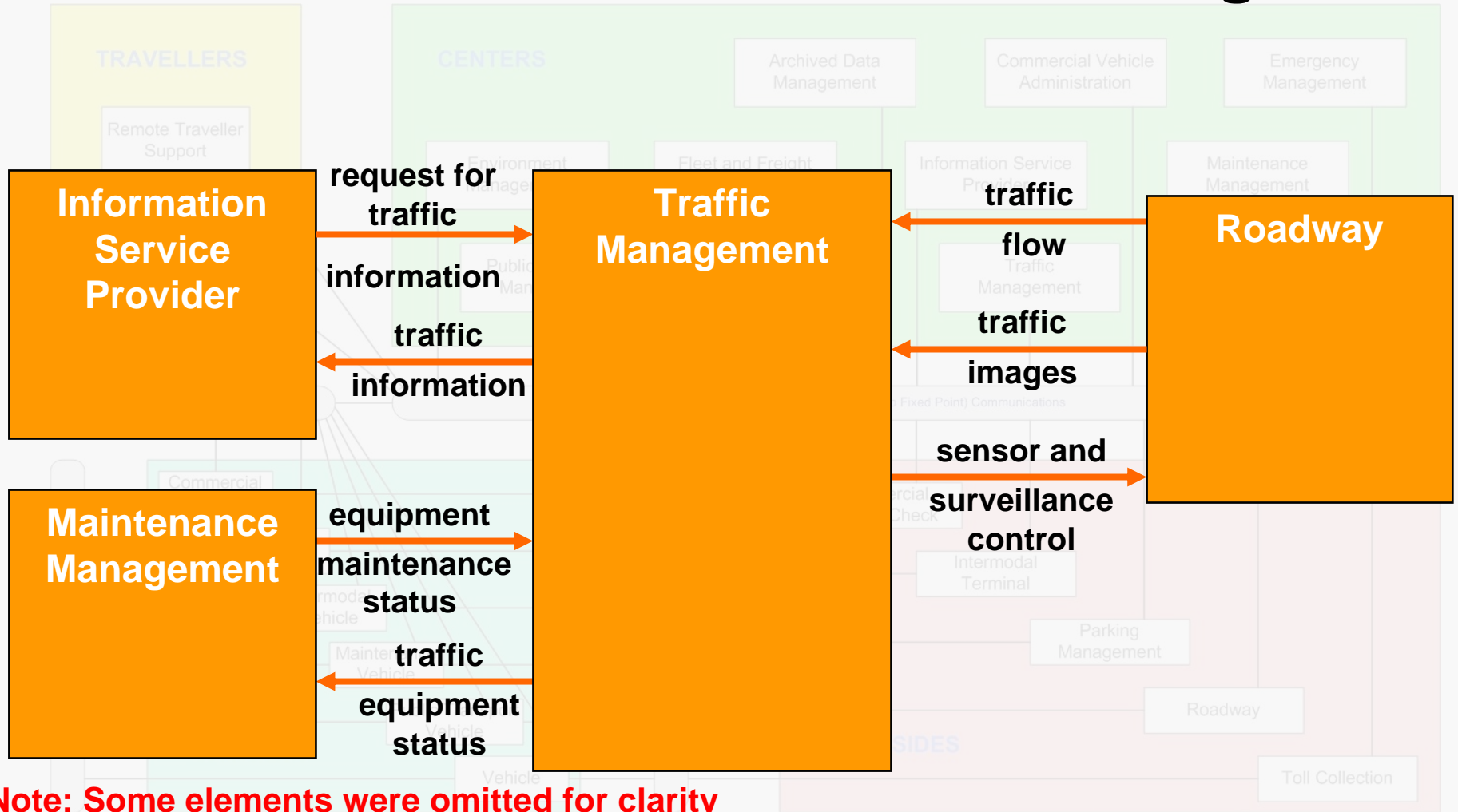


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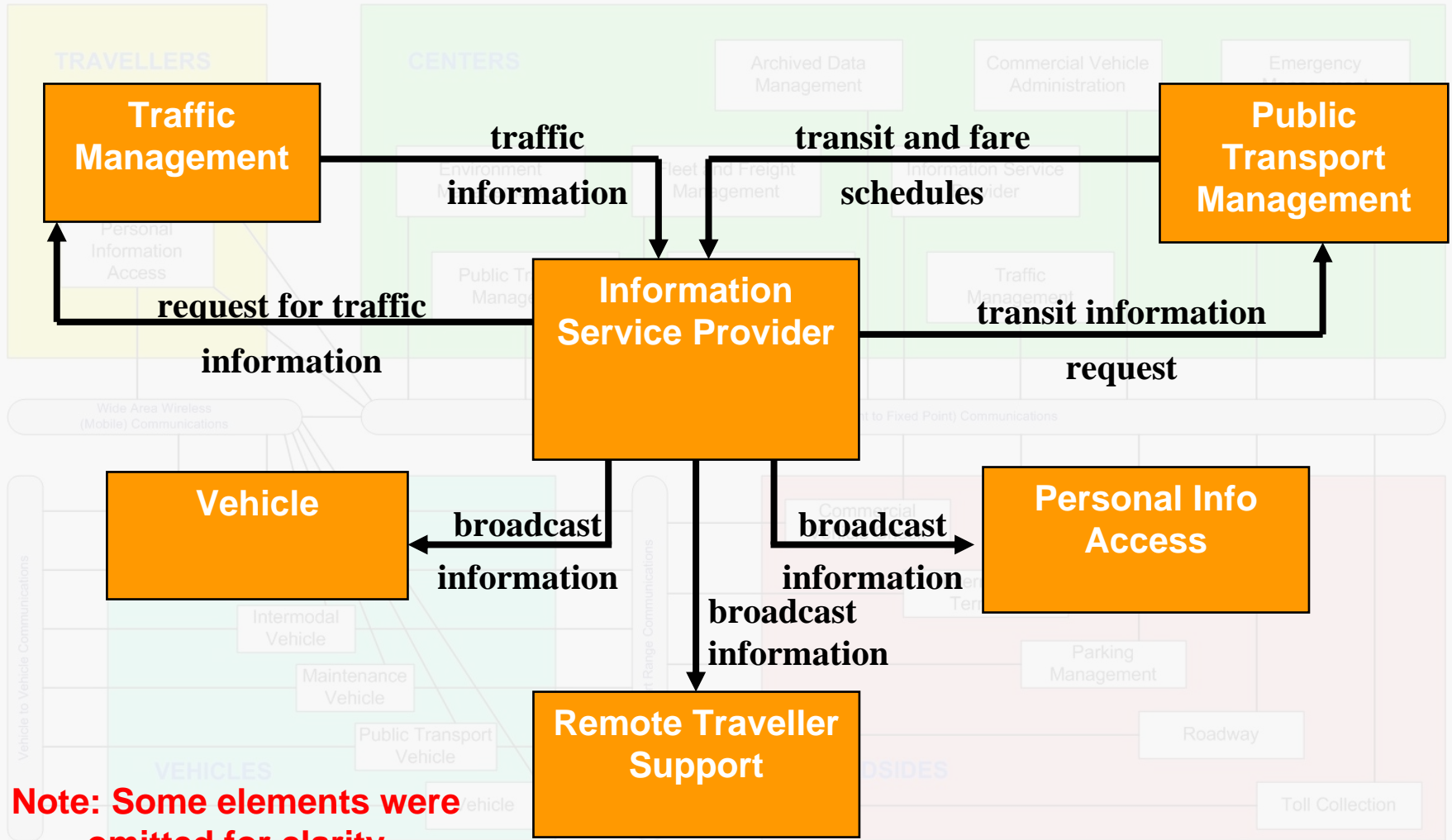
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Traffic Network Flow Monitoring



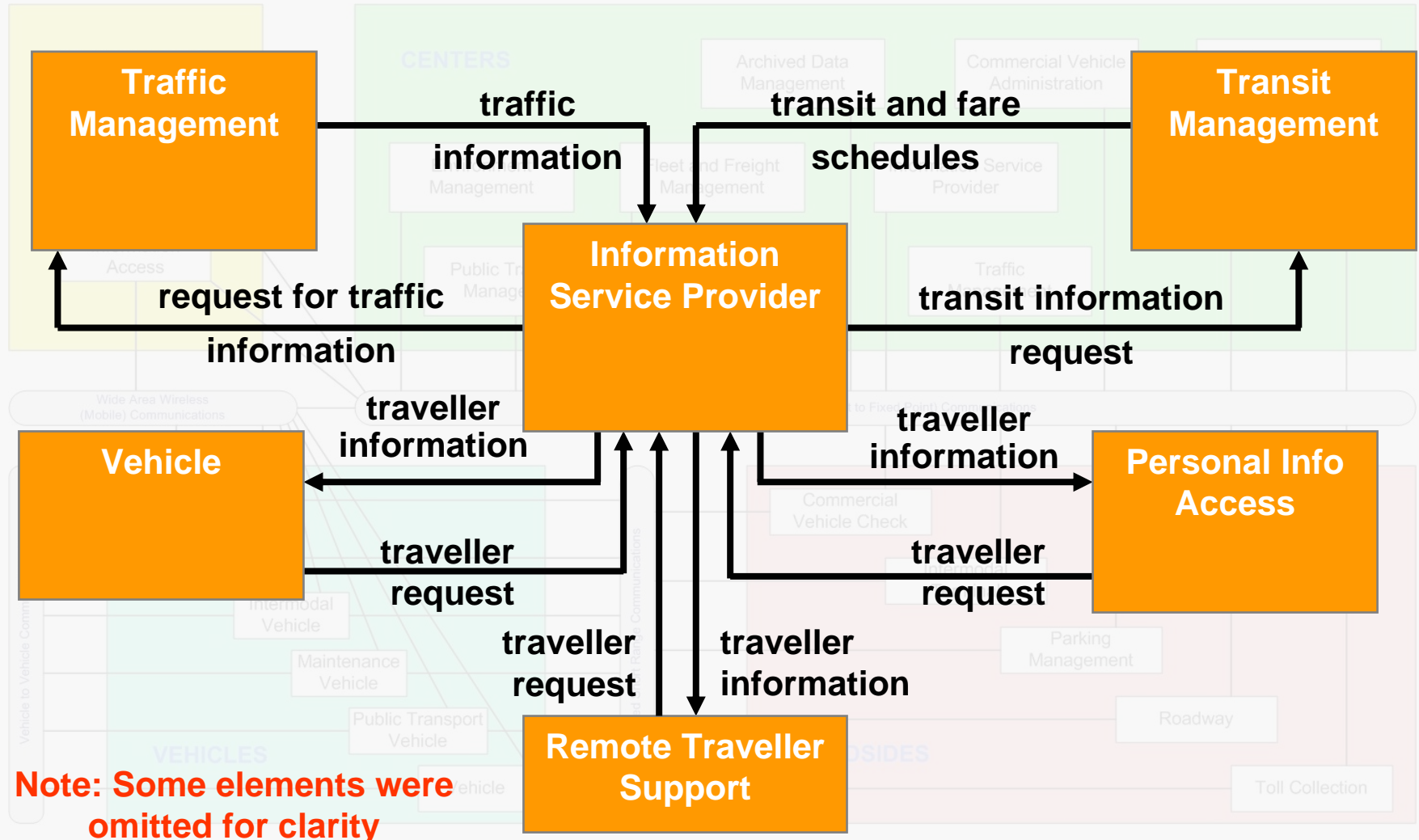
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Broadcast Traveller Information



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Interactive Traveller Information



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Summary

- **Deployment Packages**

- Vertical slices of the ITS Architecture for Malaysia focused on delivering transportation services

- › Finer granularity than User Services (91 vs. 36)

- Geared toward implementation

- › Links problems, potential solutions, and related issues

- What makes up a Deployment Package:

- › Physical Architecture elements only

- › Subsystems, Terminators, and Architecture Flows

