

APPENDIX A

Deployment Package Context Diagrams

Appendix A – Deployment Package Context Diagrams

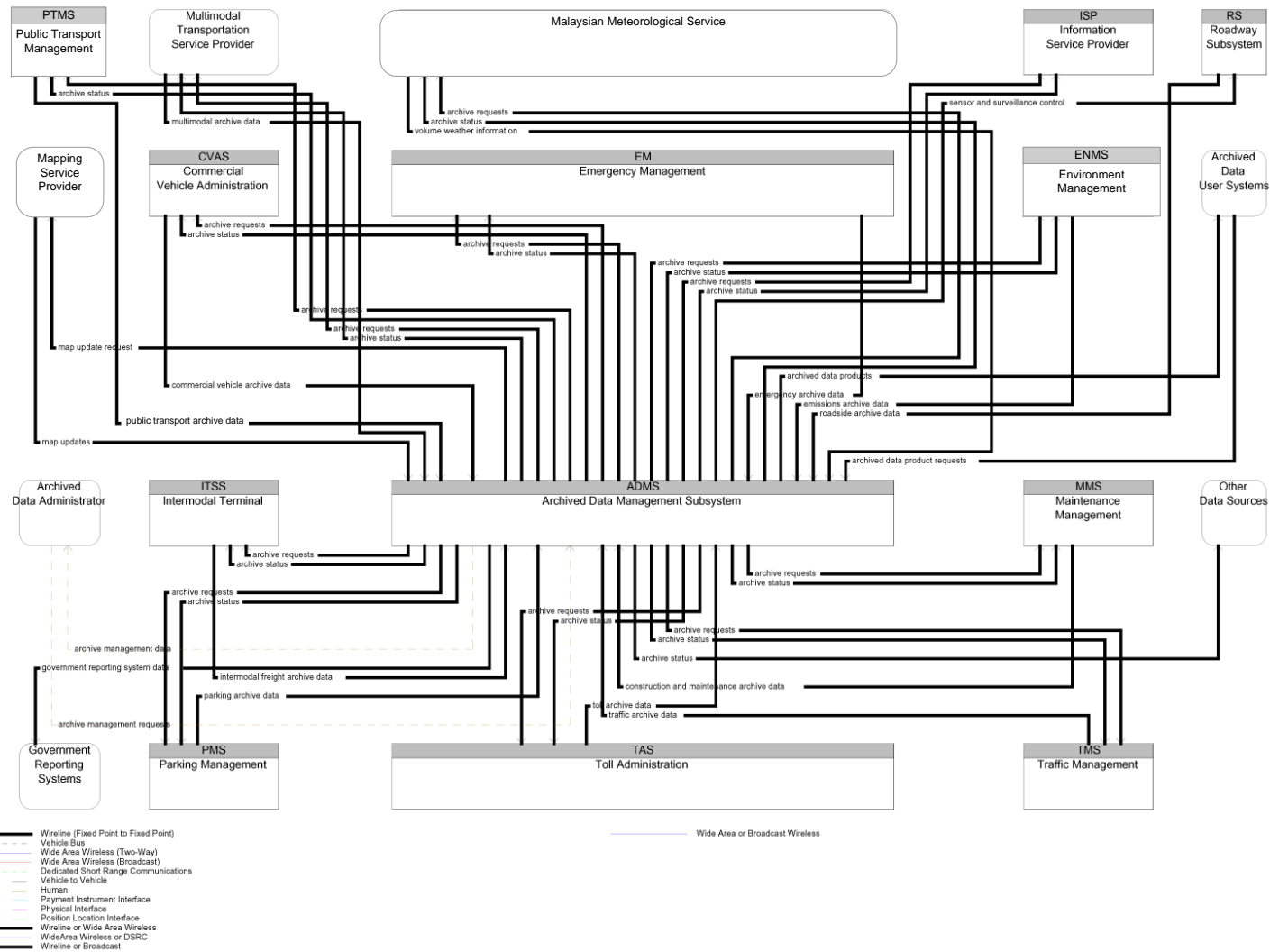
Deployment Package ID	Deployment Package Name	Deployment Package ID	Deployment Package Name
AD1	Archived Data Mart	ATMS05	HOV Lane Management
AD2	Archived Data Warehouse	ATMS06	Traffic Information Dissemination
AD3	Archived Data Virtual Warehouse	ATMS07	Regional Traffic Control
AD4	Accident Data Management	ATMS08	Incident Risk Prediction System
APTS1	Public transport Vehicle Tracking	ATMS09	Predictive Demand Management
APTS2	Public transport Fixed-Route Operations	ATMS10	Electronic Toll Collection
APTS3	Demand Responsive Public transport	ATMS11	Emissions Management
APTS4	Passenger and Fare Management	ATMS12	Virtual TMC and Vehicle-Based Sensing
APTS5	Public Travel Security	ATMS13	Basic At-Grade Crossing Control
APTS6	Public Transport Maintenance	ATMS14	Advanced At-Grade Crossing
APTS7	Multi-Modal Co-ordination	ATMS15	Modal Operations Co-ordination
APTS8	En-Route Public transport Information	ATMS16	Electronic Parking Payment and Parking Facility Management
APTS9	Multi-Modal Connection Protection	ATMS17	Reversible Lane Management
ATIS1	Broadcast Traveller Information	ATMS18	Road Weather Information System
ATIS2	Interactive Traveller Information	ATMS19	Regional Parking Management
ATIS3	Autonomous Route Guidance	ATMS20	Roadway Environmental Sensing
ATIS4	Dynamic Route Guidance	ATMS21	Roadway and Weather Data Fusion
ATIS5	ISP-Based Route Guidance	ATMS22	Environmental Information Dissemination
ATIS6	Dynamic Traffic Assignment	ATMS23	Roadway Micro-Prediction
ATIS7	Traveller Services Payment and Reservation	ATMS24	Maintenance Fleet Management
ATIS8	Ride Matching	ATMS25	Smart Work Zones
ATIS9	In-Vehicle Signing	ATMS26	Dynamic Roadway Warning
ATMS01	Traffic Network Flow Monitoring	ATMS27	Variable Speed Limit and Enforcement
ATMS02	Probe-Based Flow Monitoring	ATMS28	Signal Enforcement
ATMS03	Surface Street Control	ATMS29	Mixed Use Warning Systems
ATMS04	Highway Control	ATMS30	Automated Non-Vehicular Road User Protection
AVSS01	Vehicle Safety Monitoring	CVO01	Fleet Administration
AVSS02	Driver Safety Monitoring	CVO02	Freight Administration

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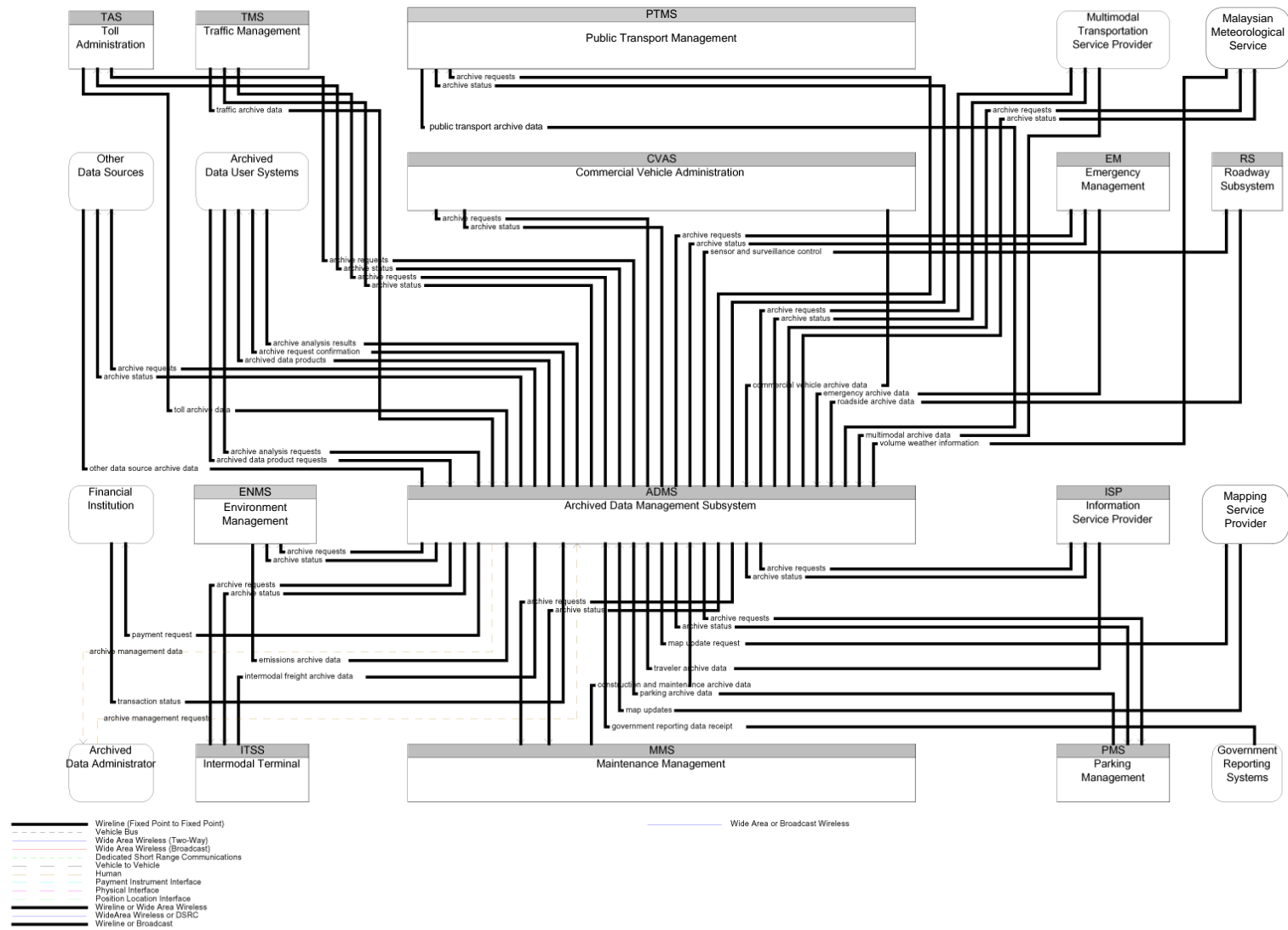
Technical Note No. 5

Deployment Packages Framework

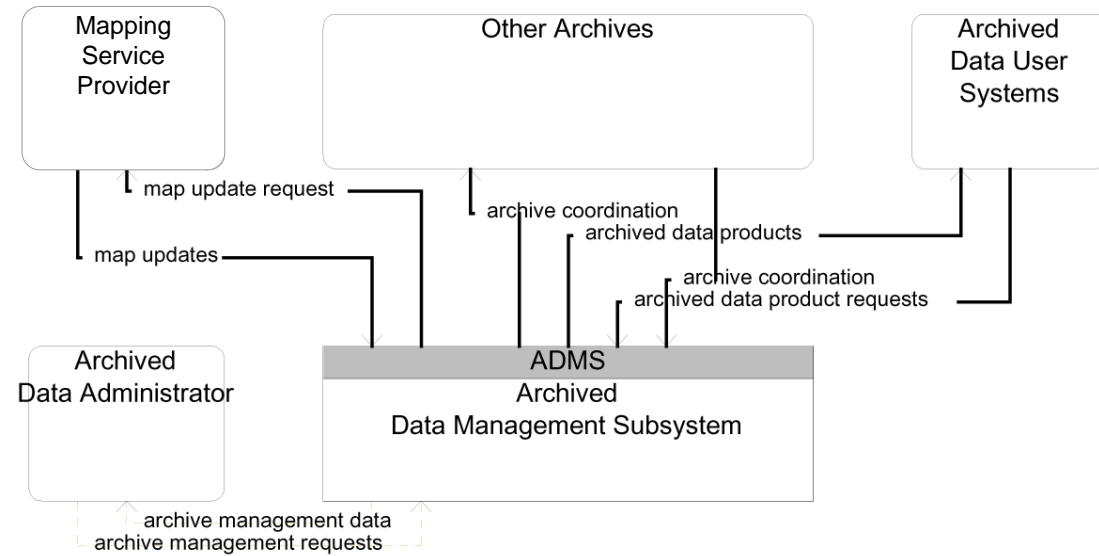
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AVSS03	Longitudinal Warning Systems	CVO03	Electronic Clearance
AVSS04	Lateral Warning Systems	CVO04	Commercial Vehicle Administrative Processes
AVSS05	Intersection Collision Warning	CVO05	International Border Crossing Clearance
AVSS06	Pre-Collision Restraint Deployment	CVO06	Weigh-In-Motion (WIM)
AVSS07	Sensor-Based Driving Safety Enhancement	CVO07	Roadside CVO Safety
AVSS08	Longitudinal Collision Avoidance	CVO08	On-Board Safety Monitoring
AVSS09	Lateral Collision Avoidance	CVO09	CVO Fleet Maintenance
AVSS10	Intersection Collision Avoidance	CVO10	Hazardous Material Incident Response
AVSS11	Automated Vehicle Operation	CVO11	Freight In-Public transport Monitoring
		CVO12	Freight Terminal Management
		EM1	Emergency Response Management
		EM2	Emergency Vehicle Routing
		EM3	Personal Security and MAYDAY Support
		EM4	Disaster Command and Control
		EM5	Disaster Information Dissemination



AD1

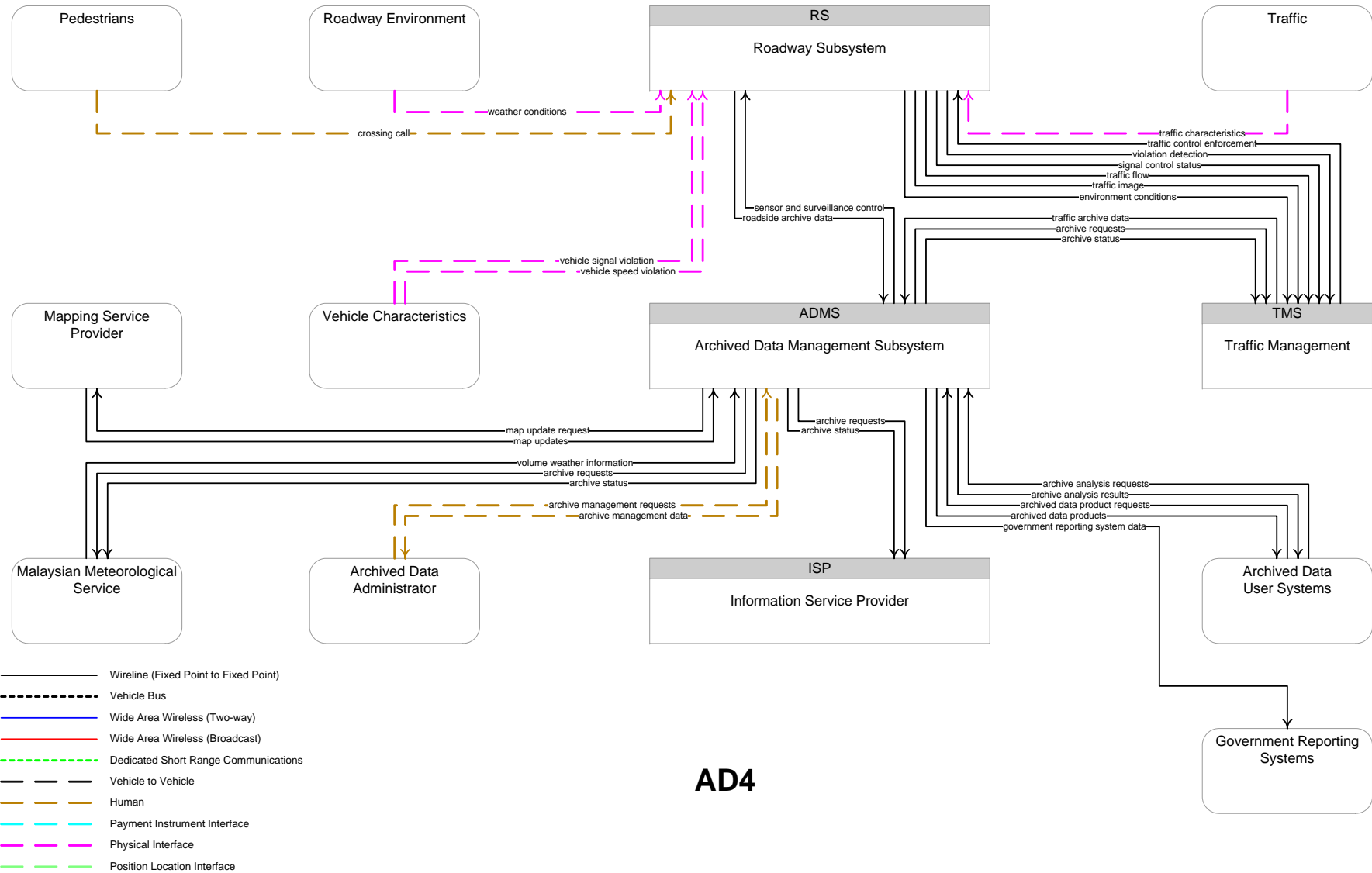


AD2

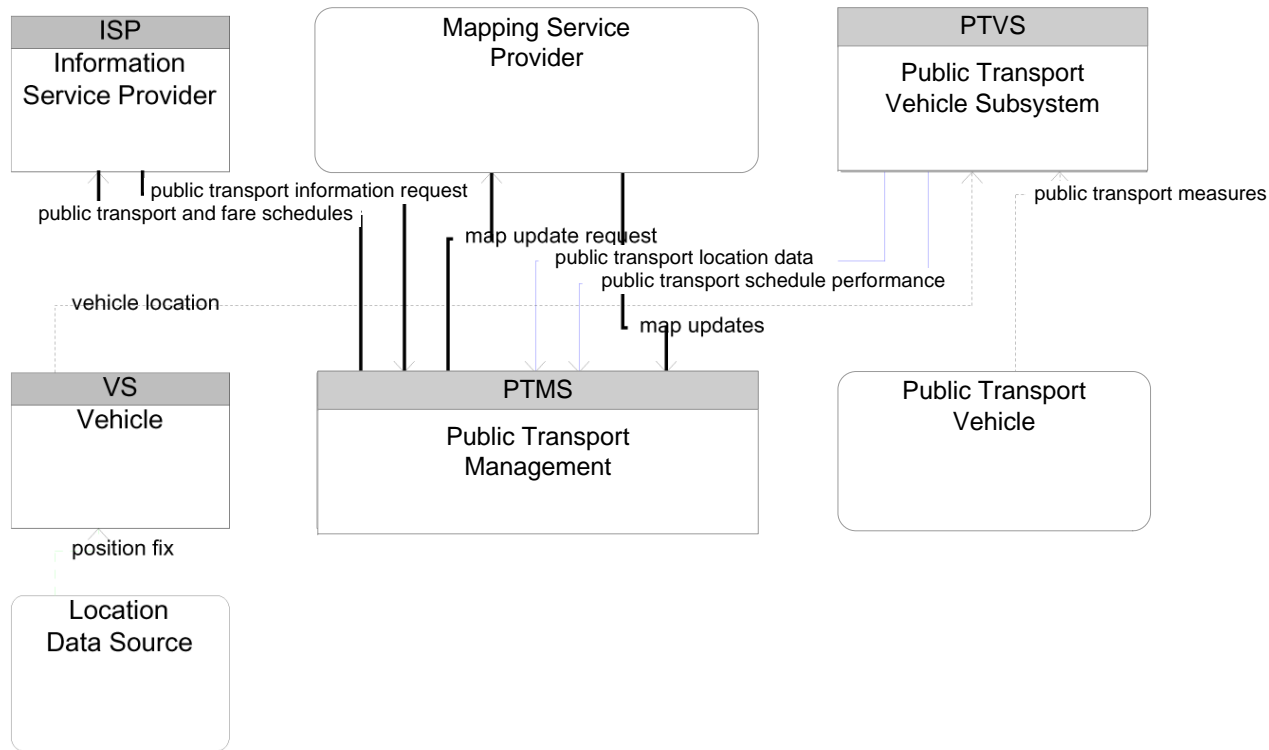


- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- Vehicle to Vehicle
- Human
- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast
- Wide Area or Broadcast Wireless

AD3



AD4



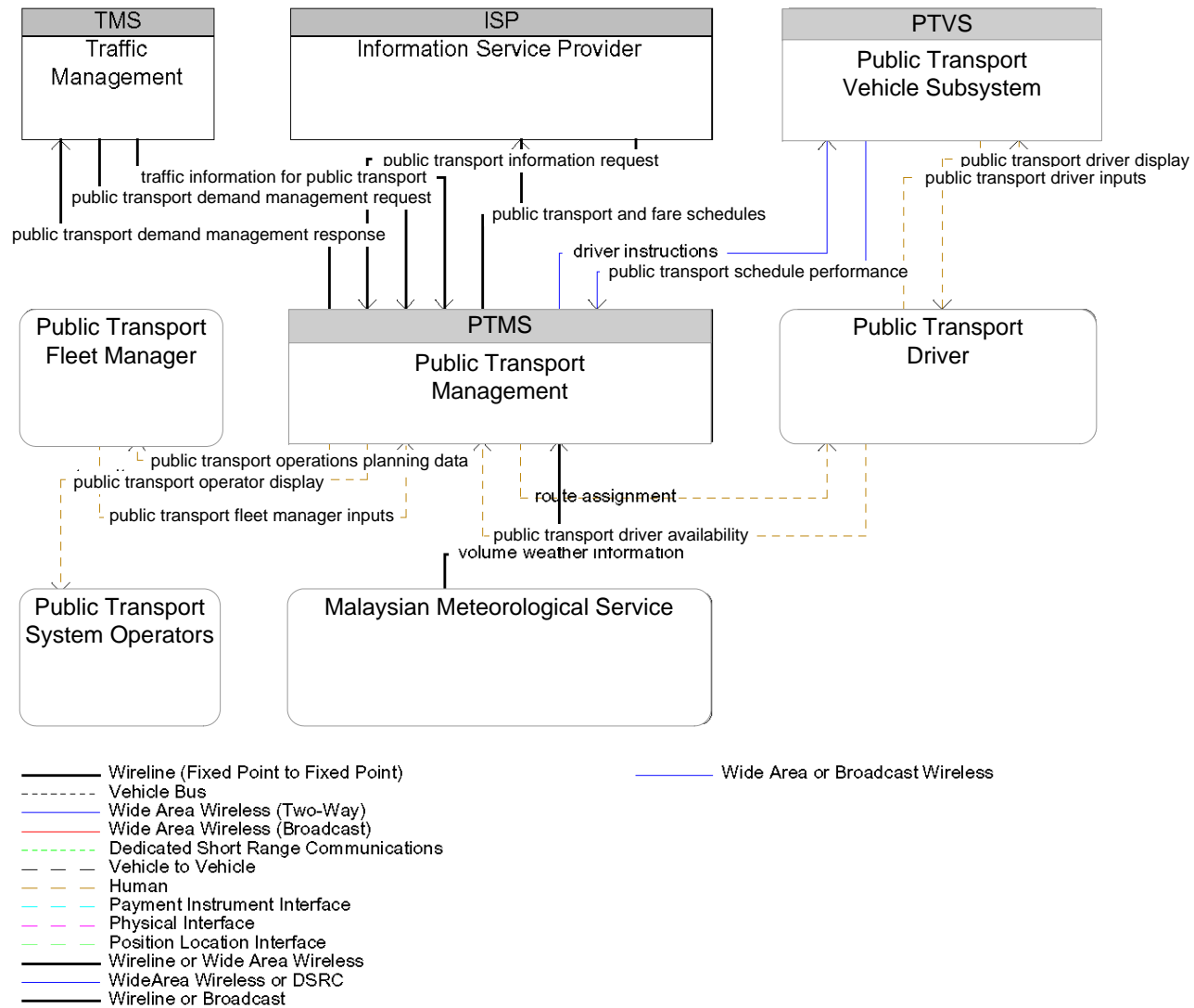
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APTS1

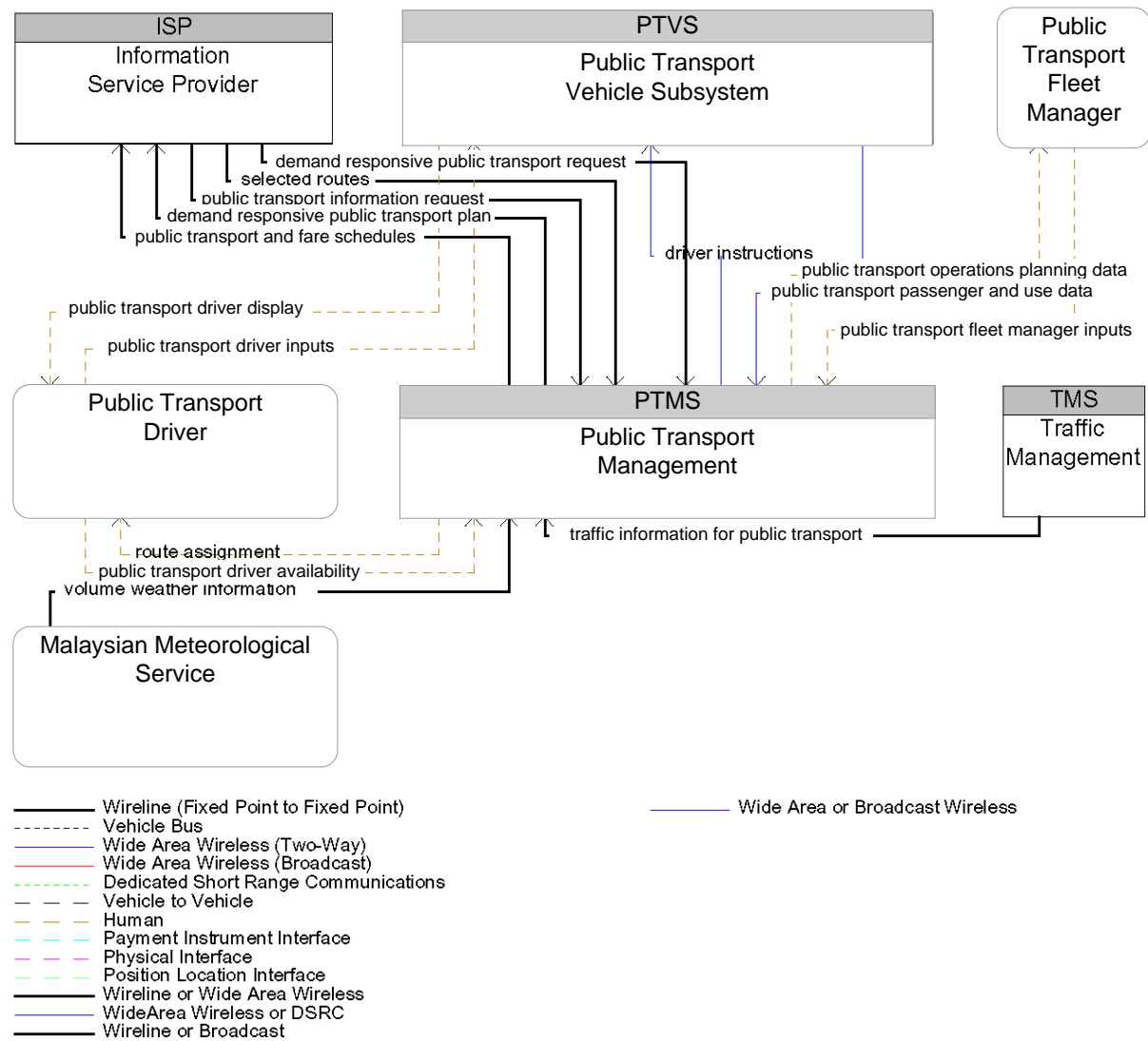
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APTS2

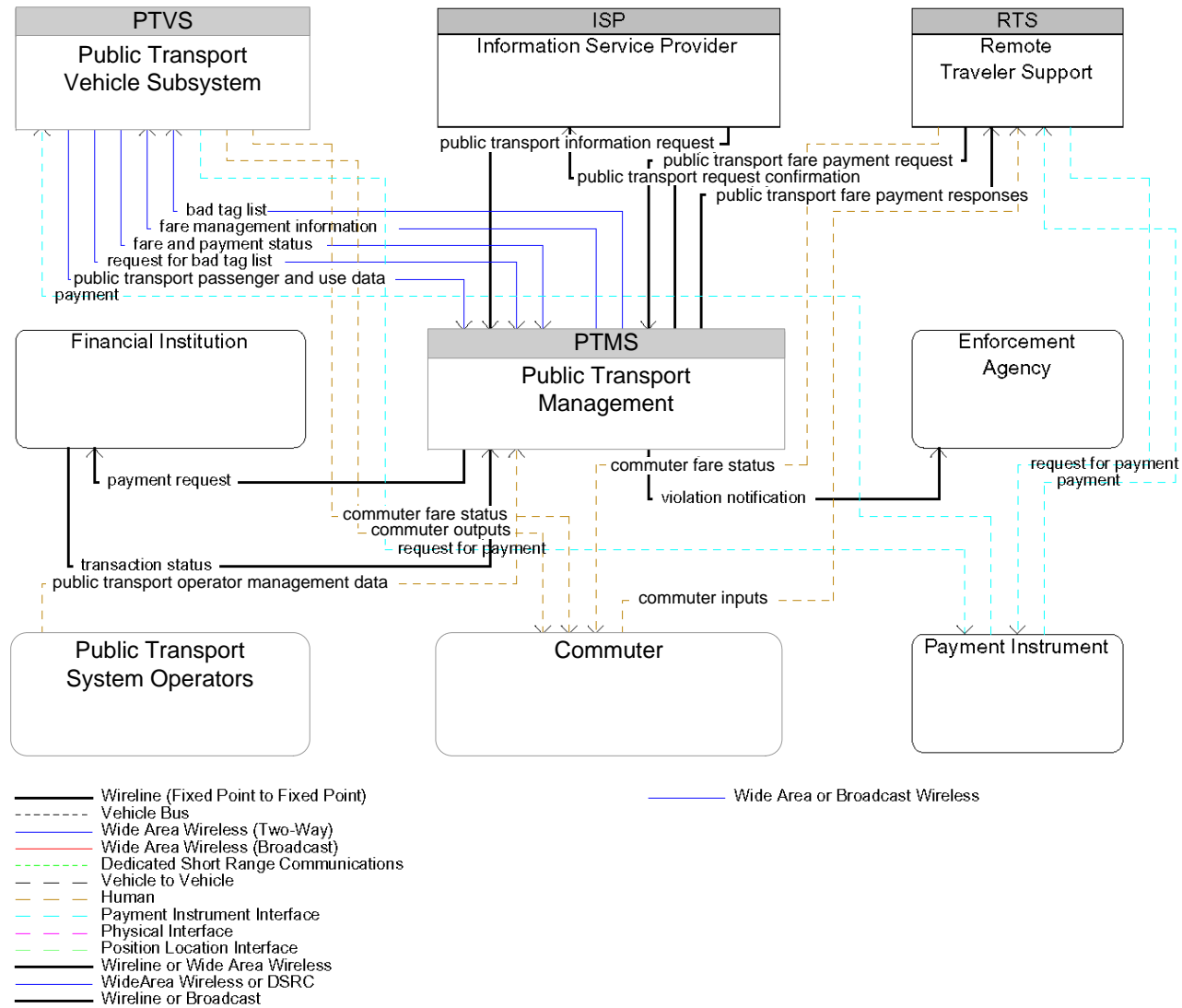


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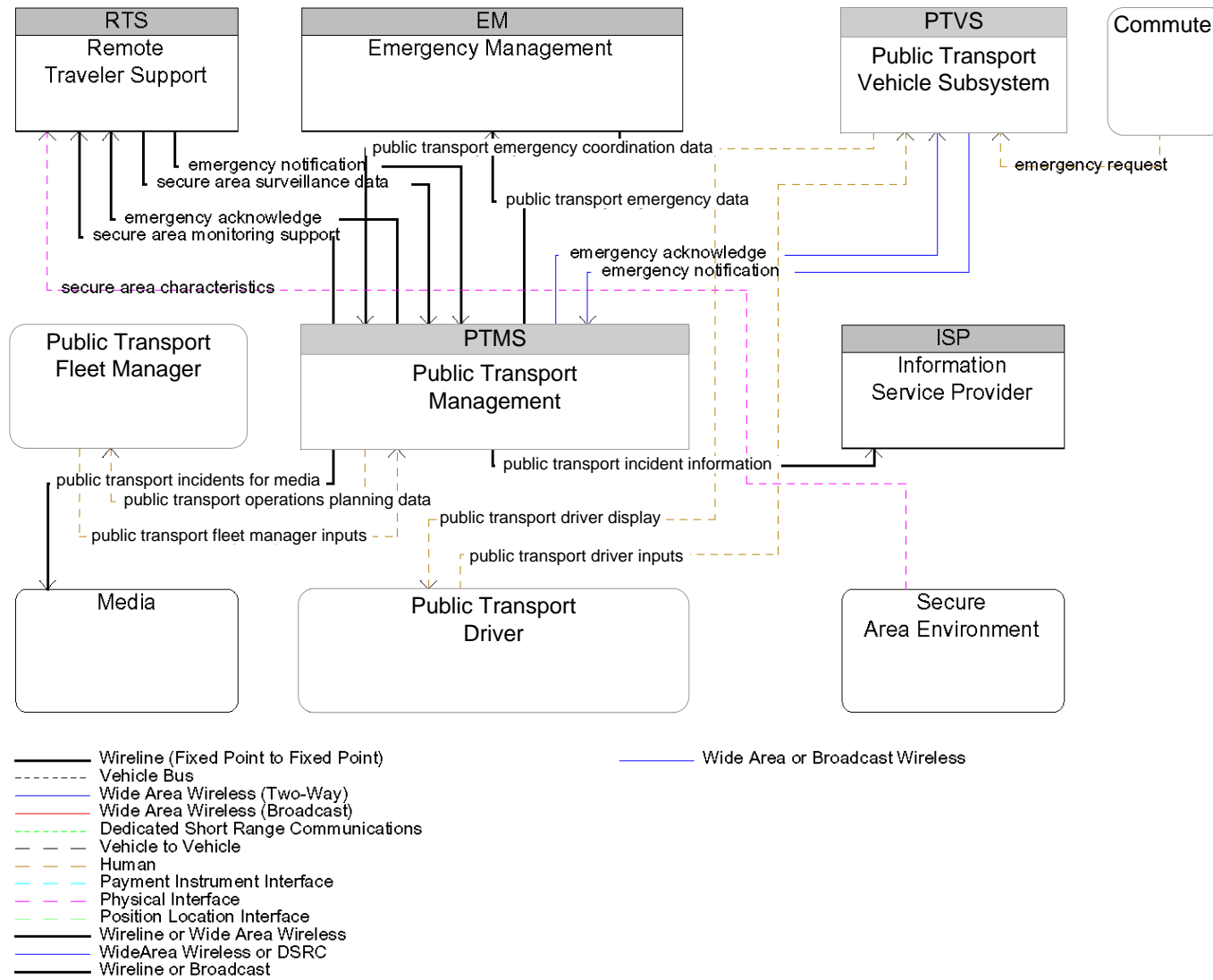
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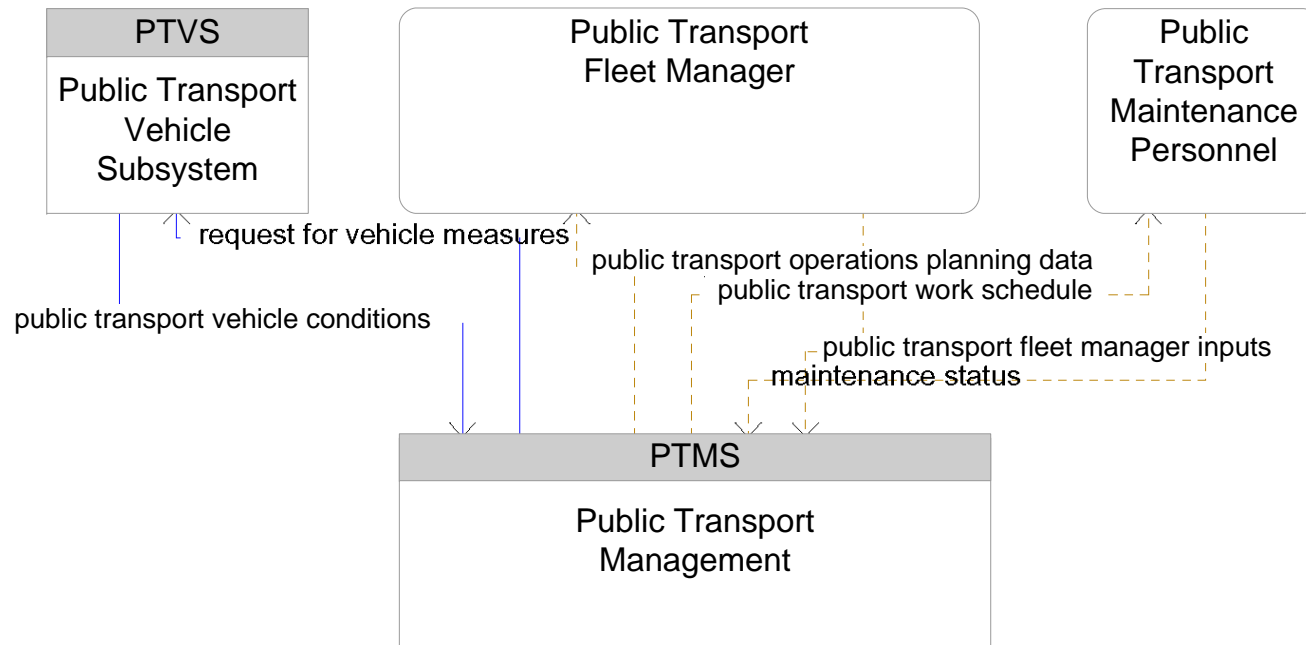
Deployment Packages Framework



APTS4

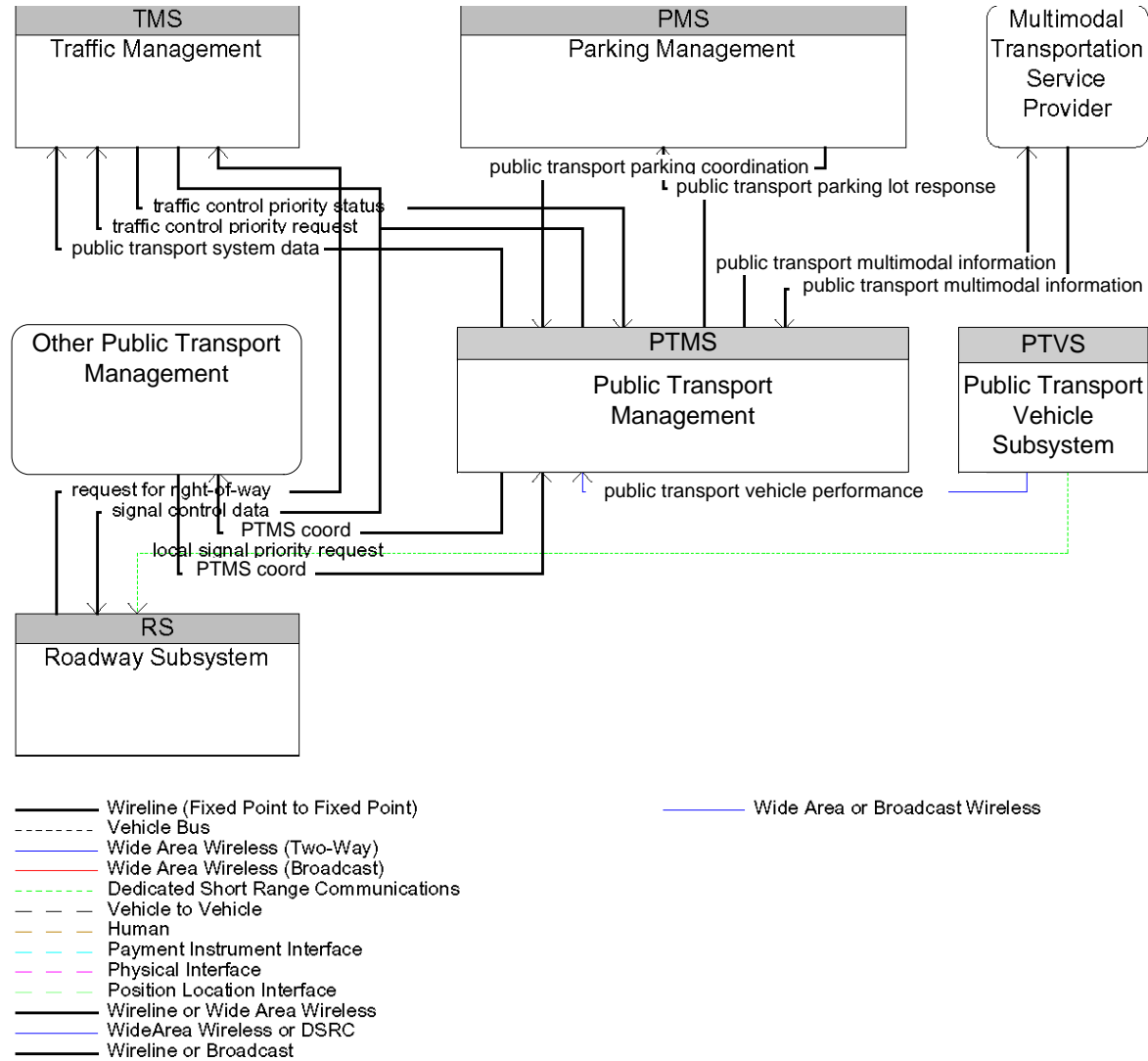


APTS5



- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
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- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- - - - Vehicle to Vehicle
- - - - Human
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- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

APTS6

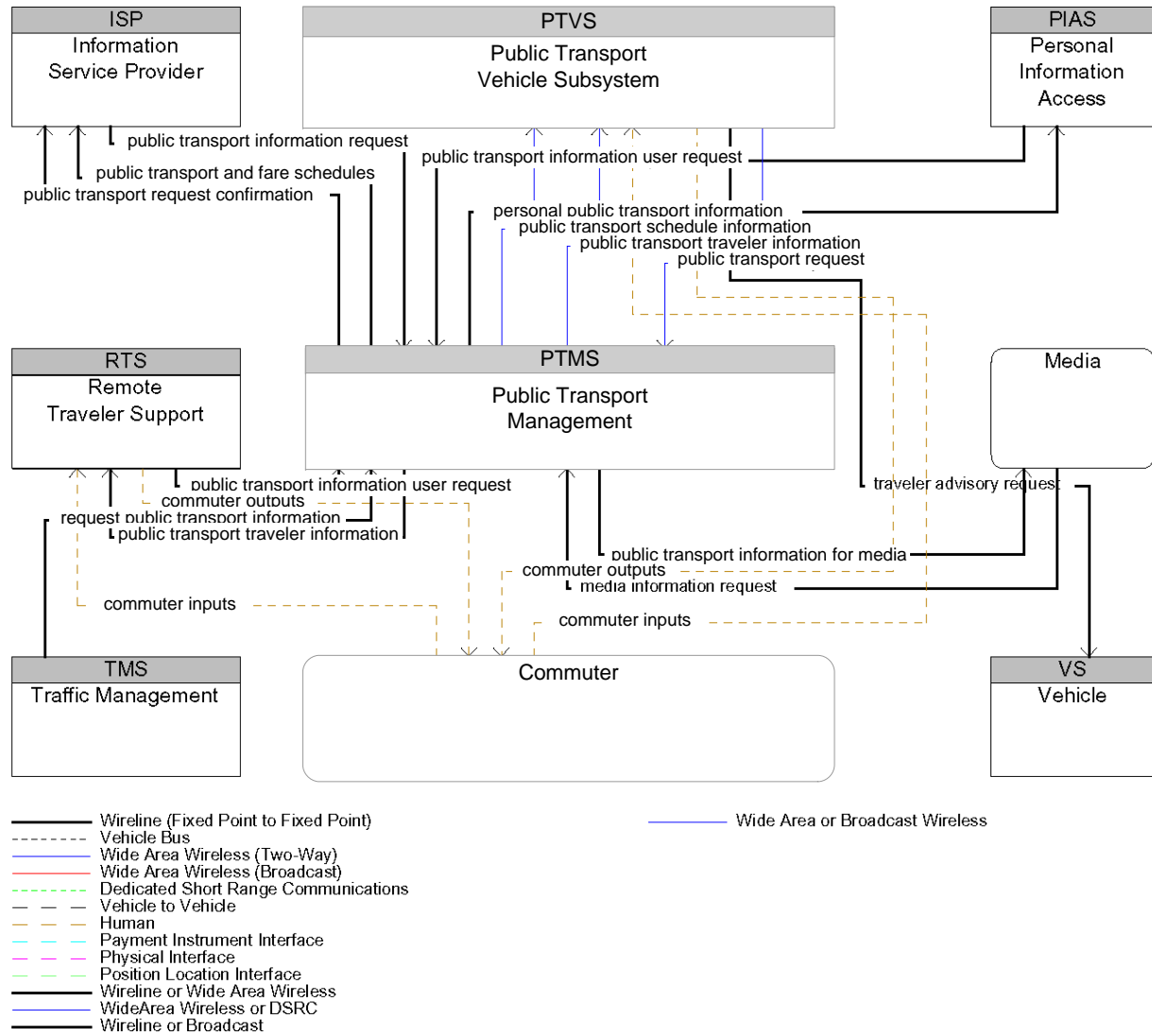


APTS7

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Deployment Packages Framework

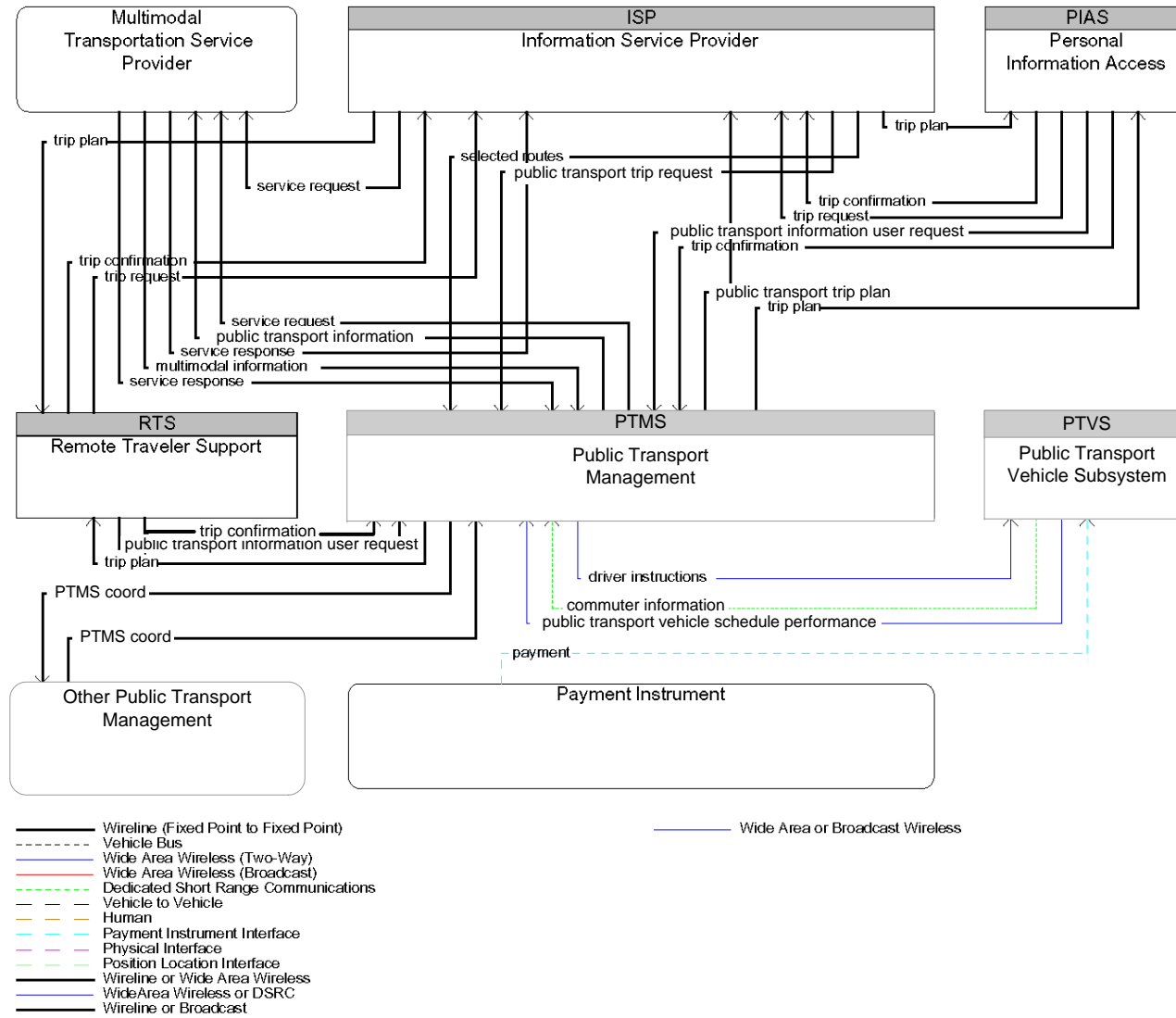


APTS8

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Deployment Packages Framework

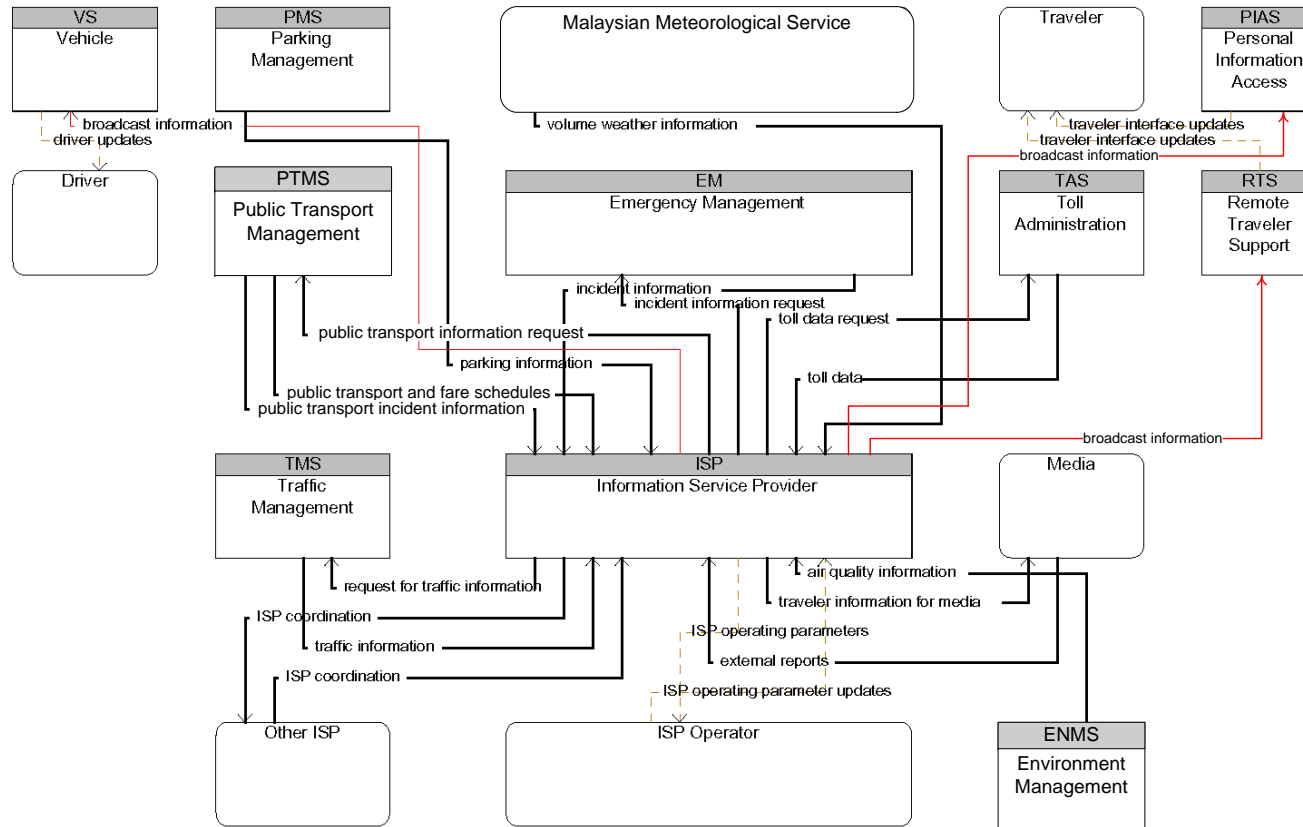


APTS9

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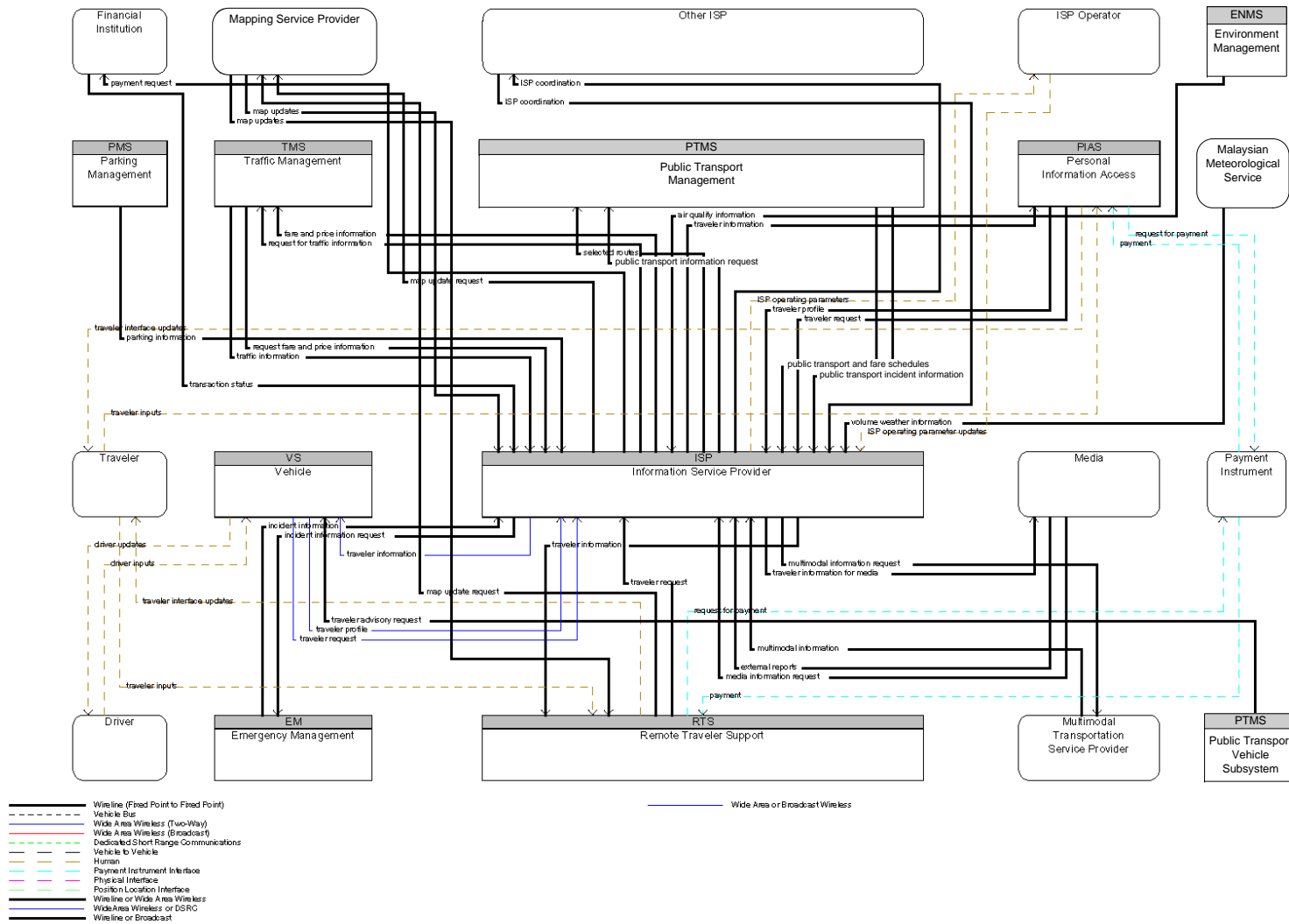
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Deployment Packages Framework

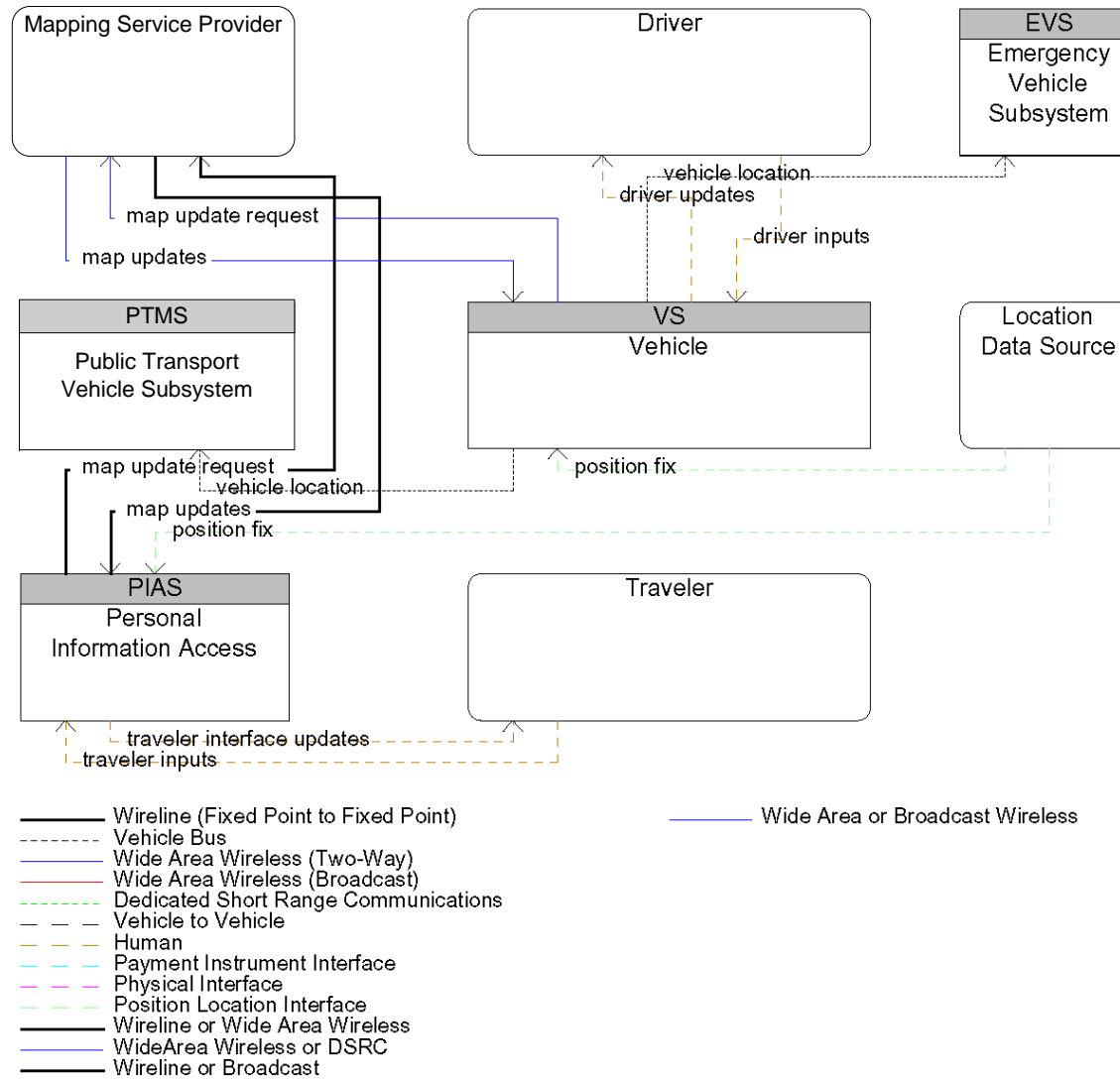


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- Wireline or Broadcast
- Wide Area or Broadcast Wireless

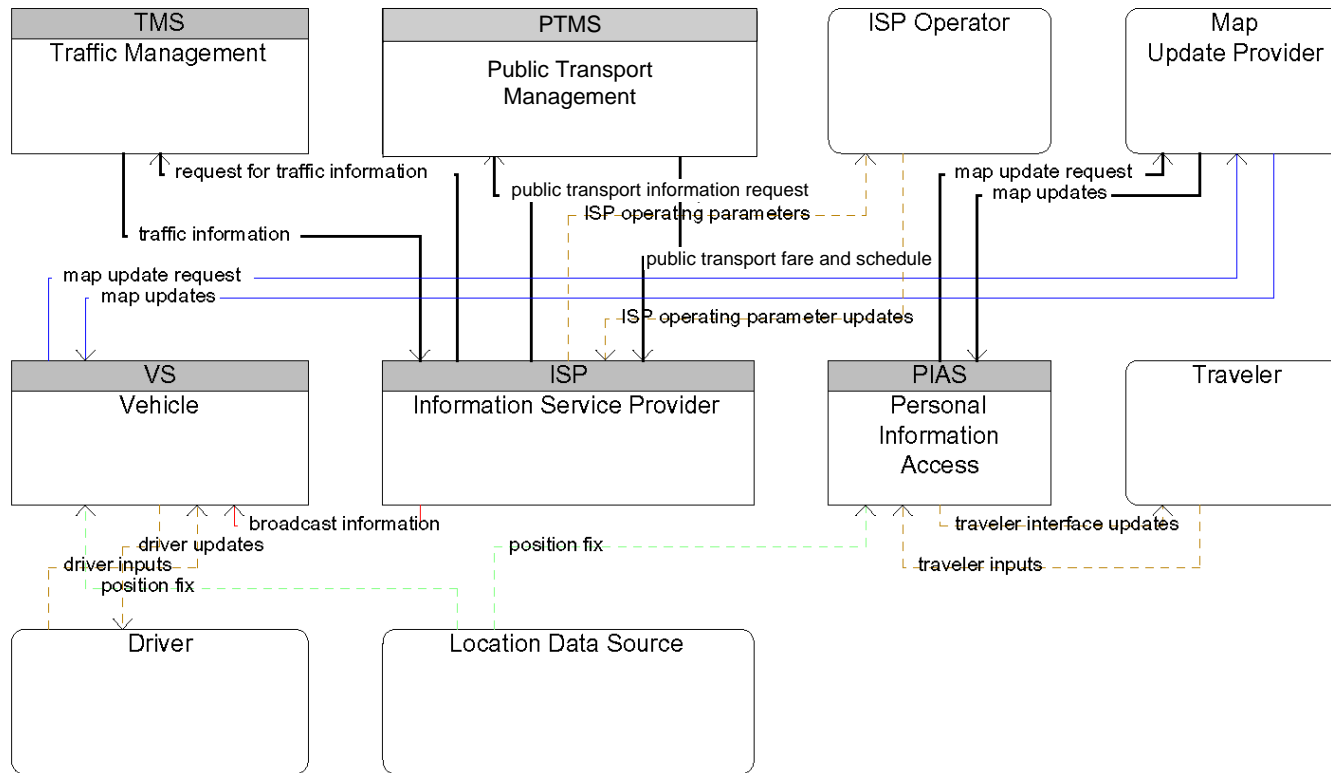
ATIS1



ATIS2



ATIS3



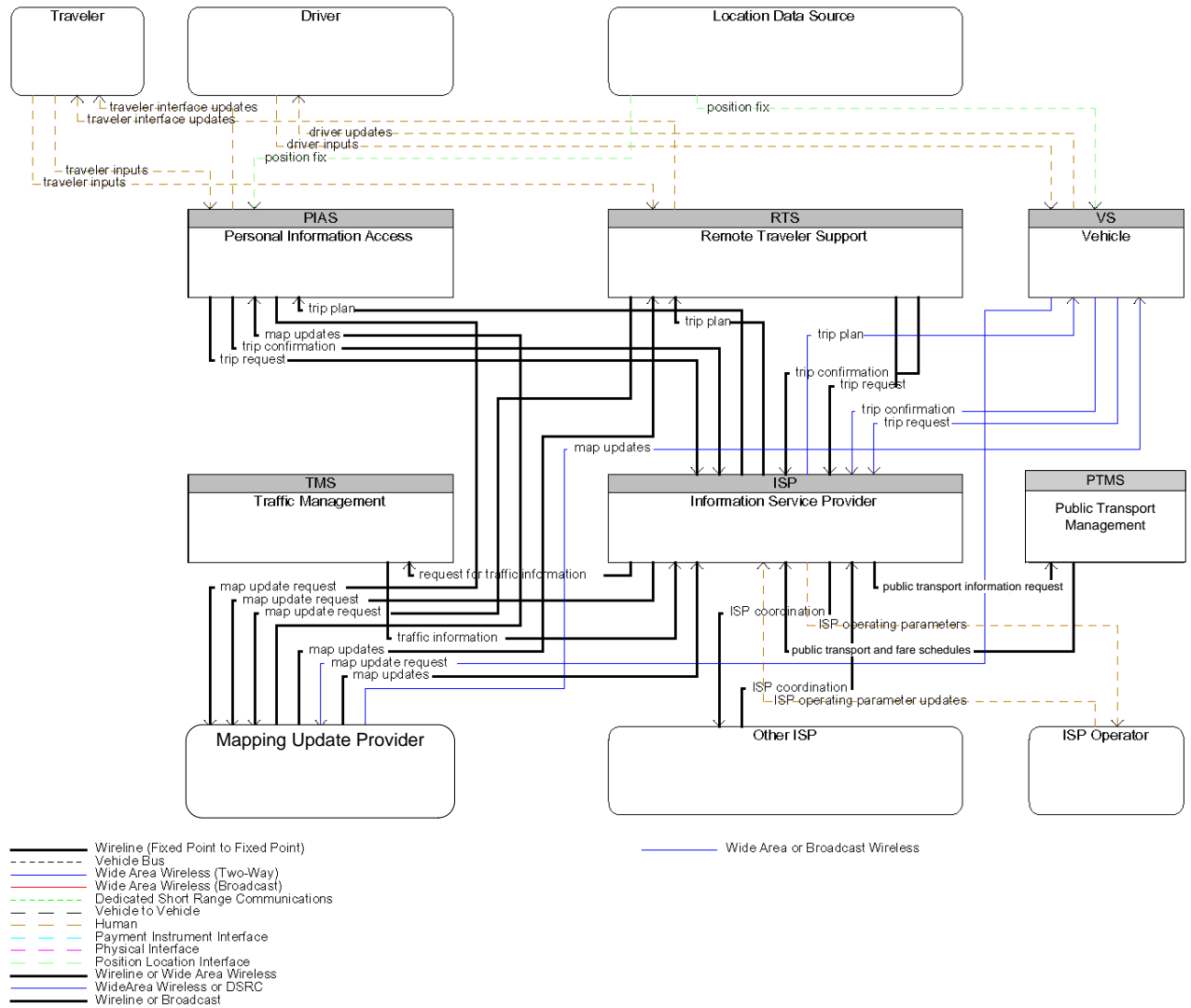
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- Wireline or Broadcast

ATIS4

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Deployment Packages Framework

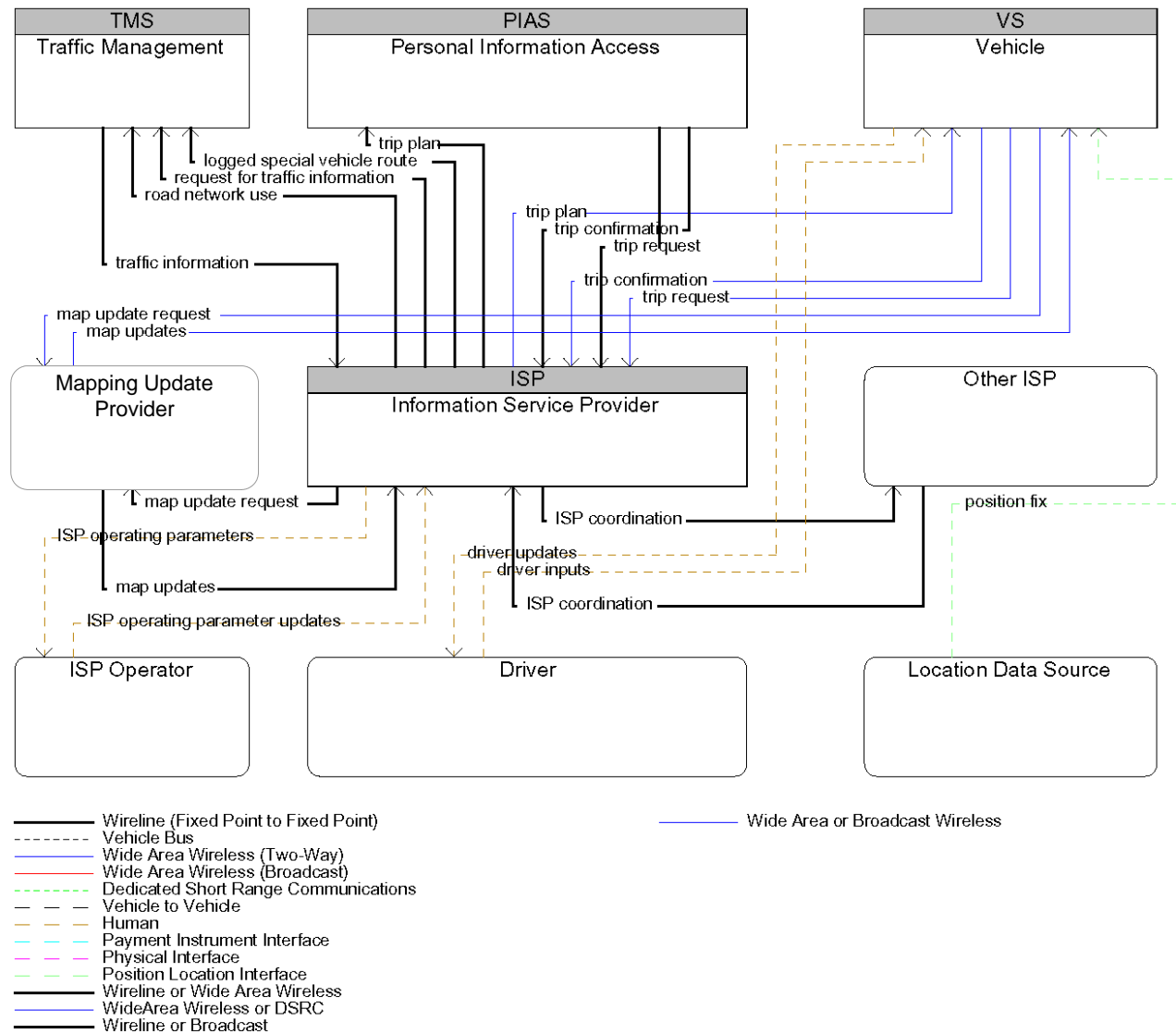


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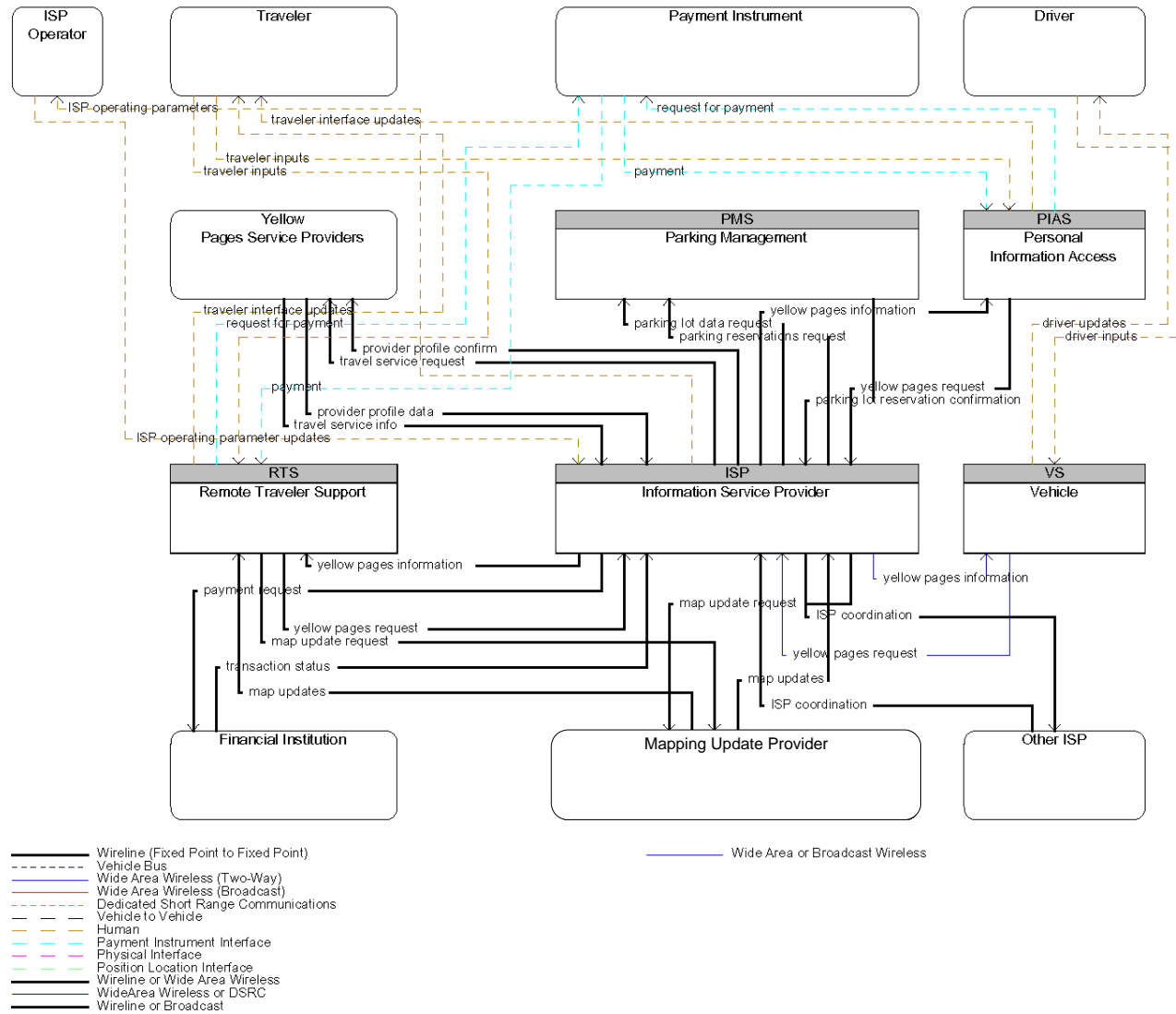
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Deployment Packages Framework



ATIS6

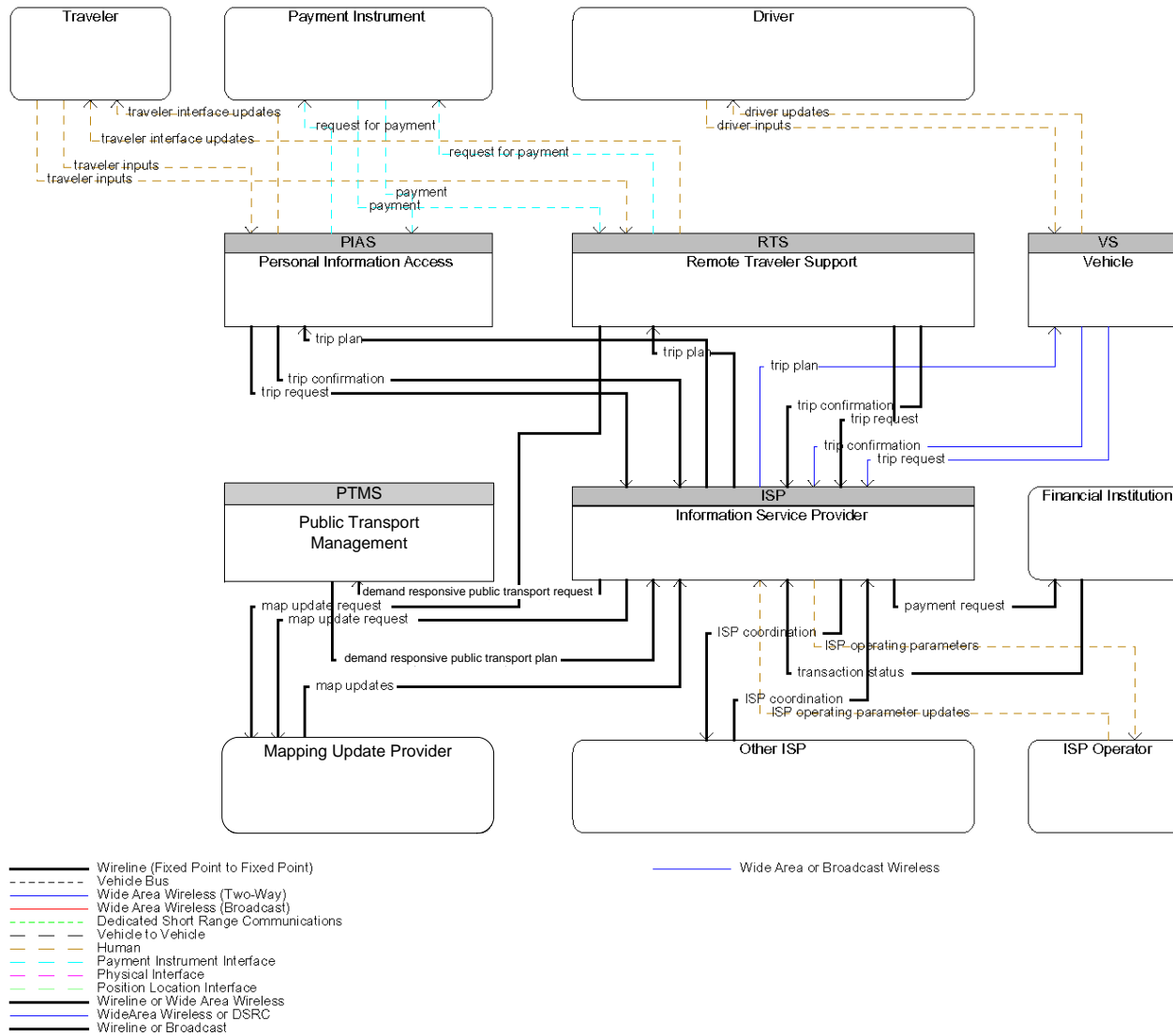


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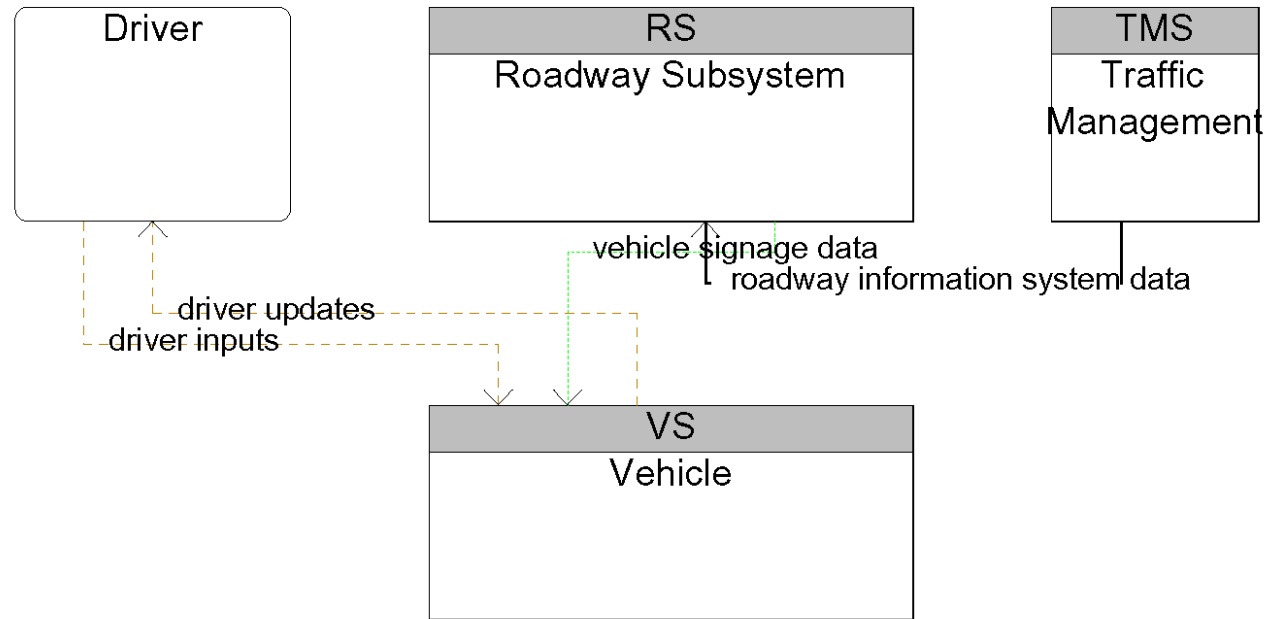
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Deployment Packages Framework



ATIS8

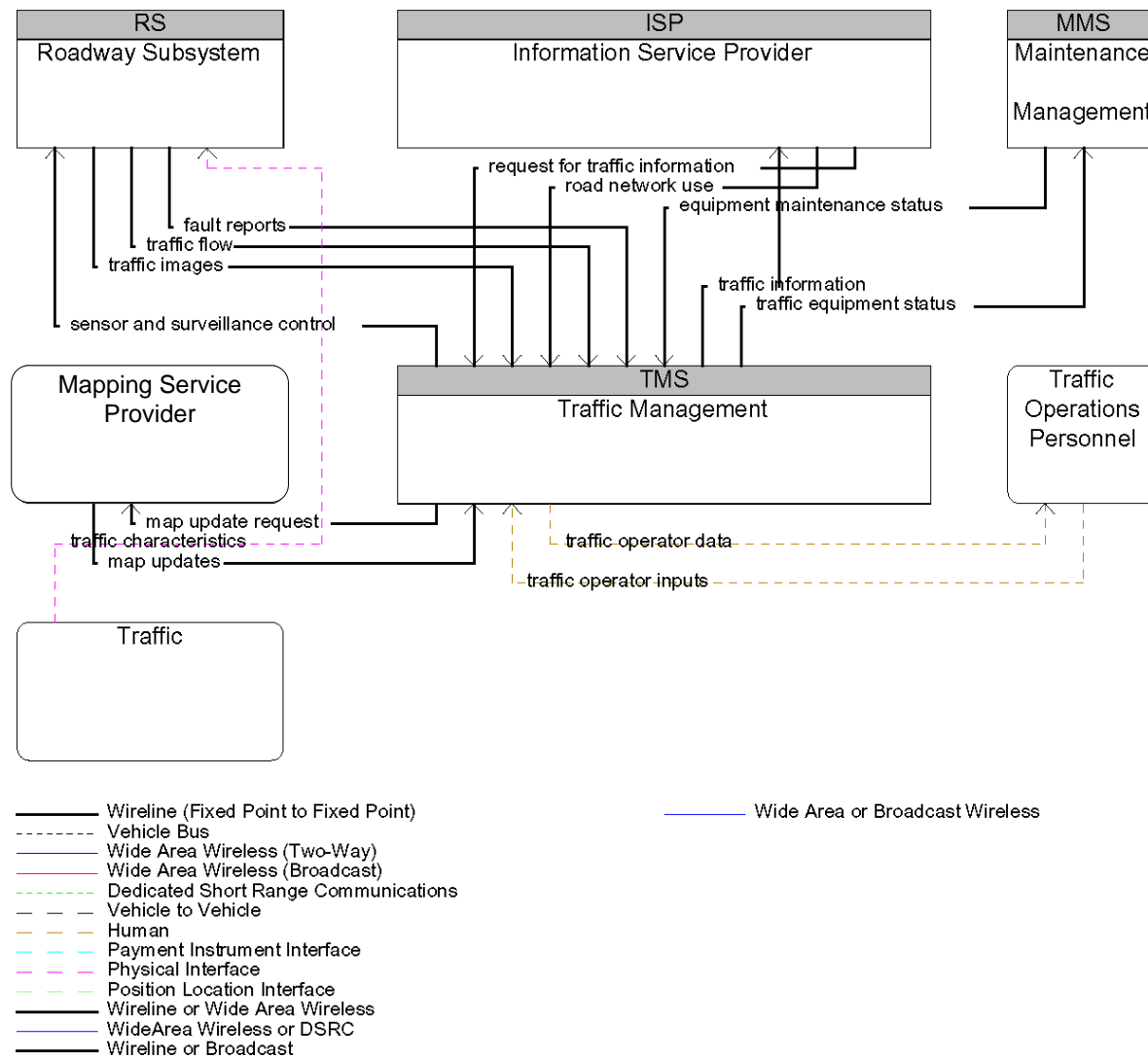


- Wireline (Fixed Point to Fixed Point) ——— Wide Area or Broadcast Wireless
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- Wide Area Wireless (Broadcast)
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- - - - Payment Instrument Interface
- - - - Physical Interface
- - - - Position Location Interface
- Wireline or Wide Area Wireless
- Wide Area Wireless or DSRC
- Wireline or Broadcast

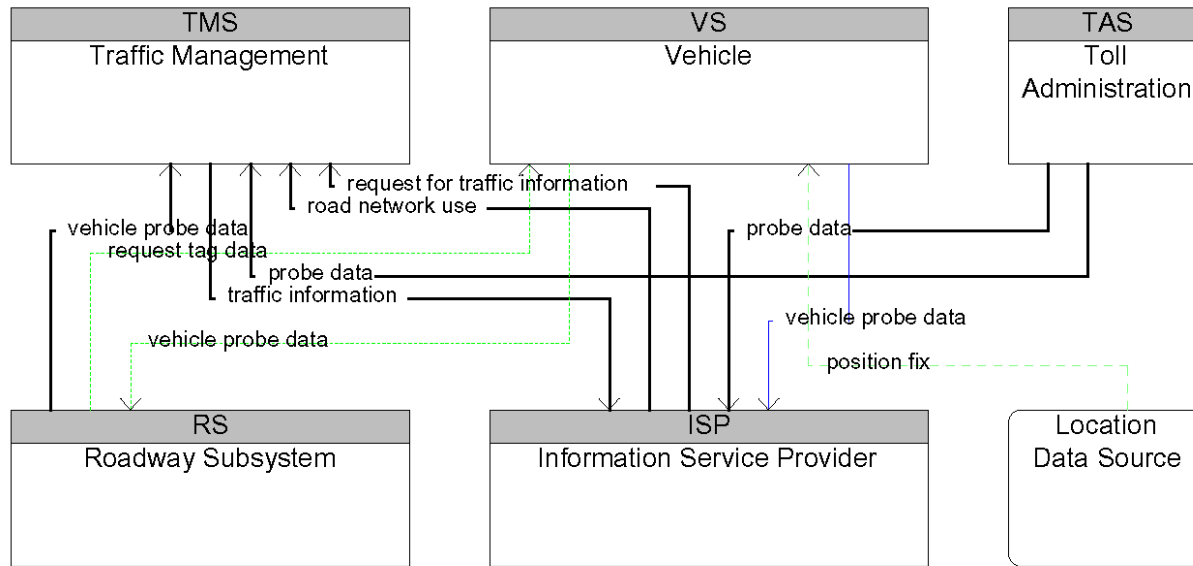
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Deployment Packages Framework



ATMS01



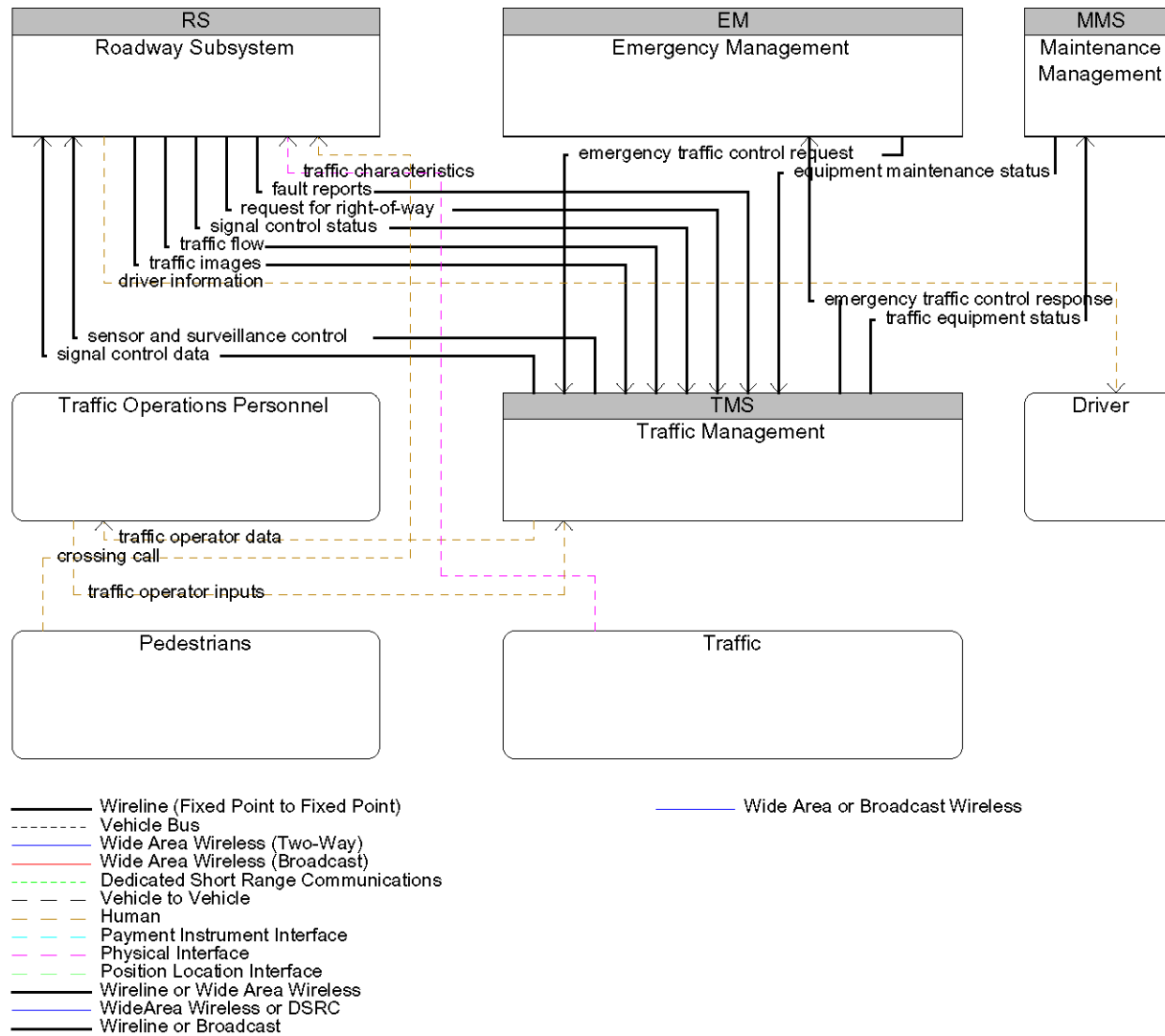
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- Wide Area or Broadcast Wireless

ATMS02

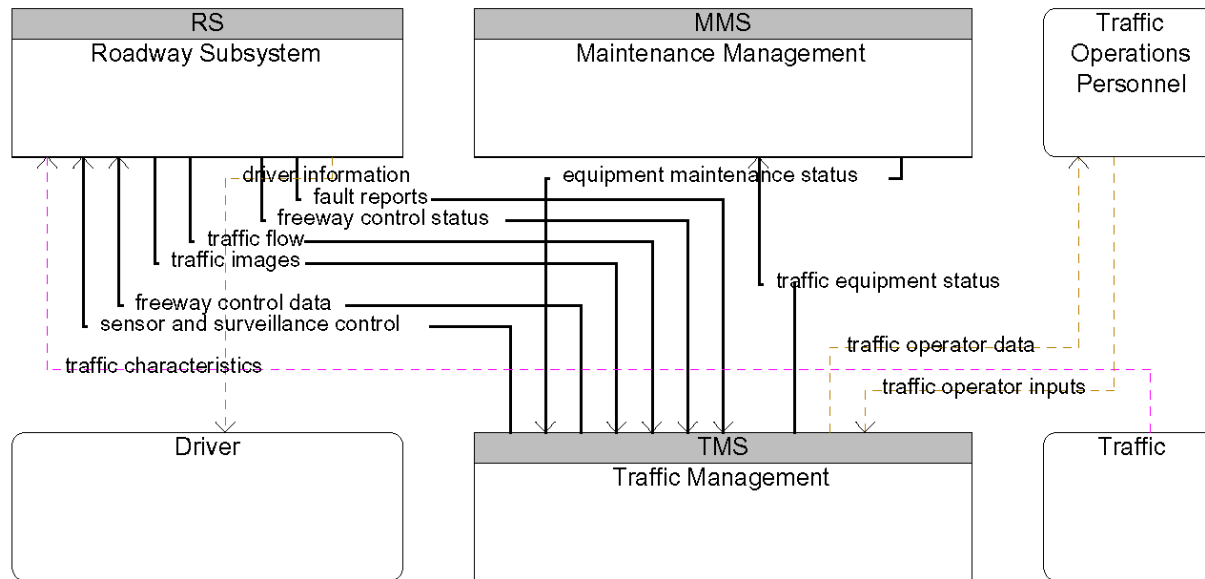
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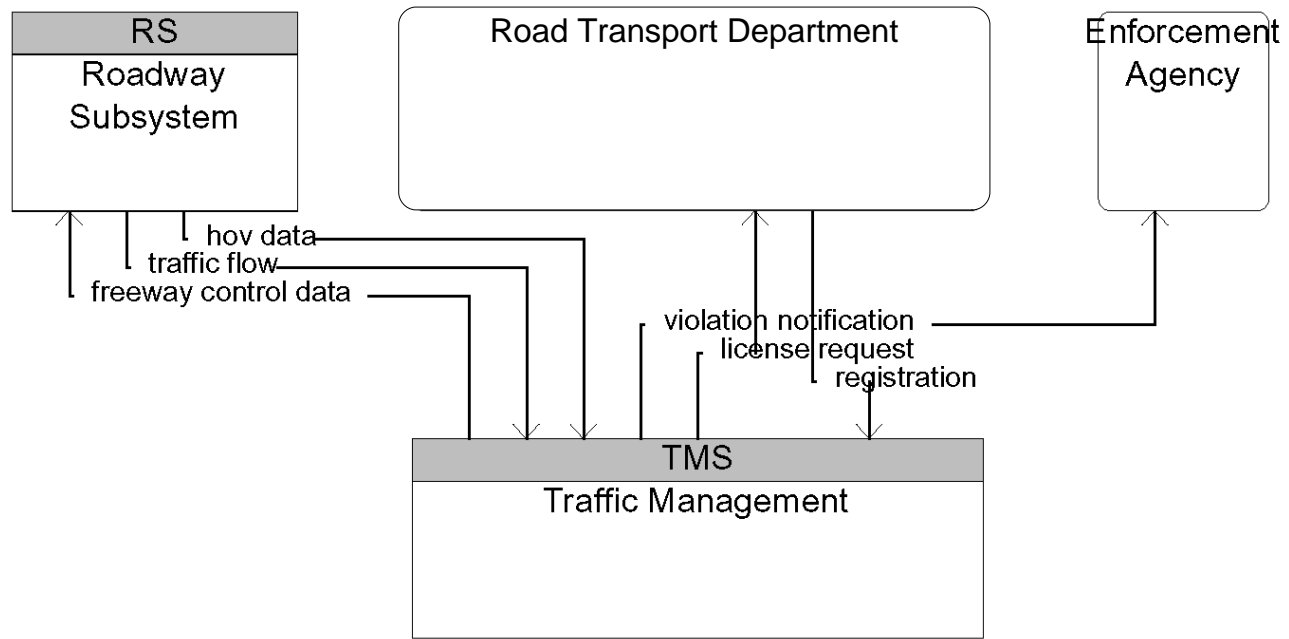


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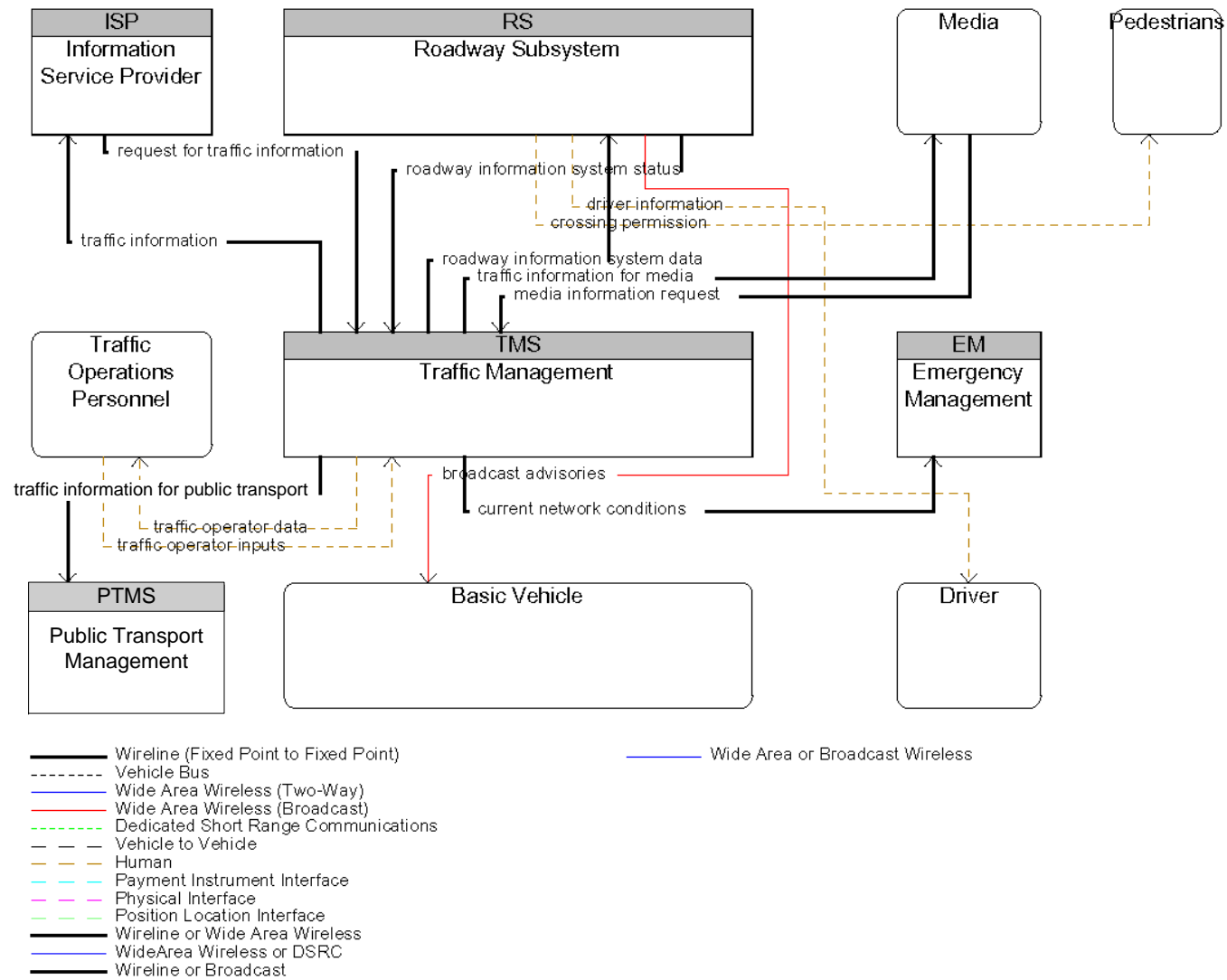
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- Wireline or Wide Area Wireless
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- Wireline or Broadcast
- Wide Area or Broadcast Wireless

ATMS04

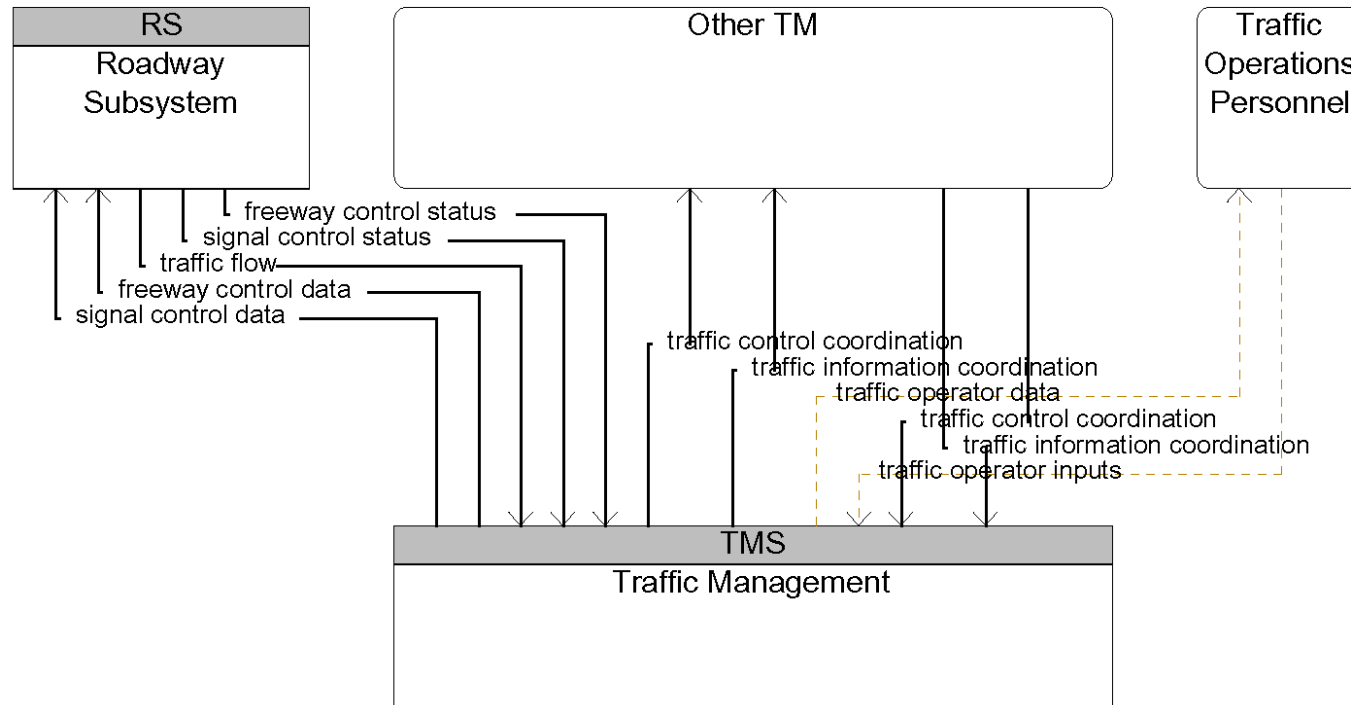


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- Wireline or Broadcast

ATMS05

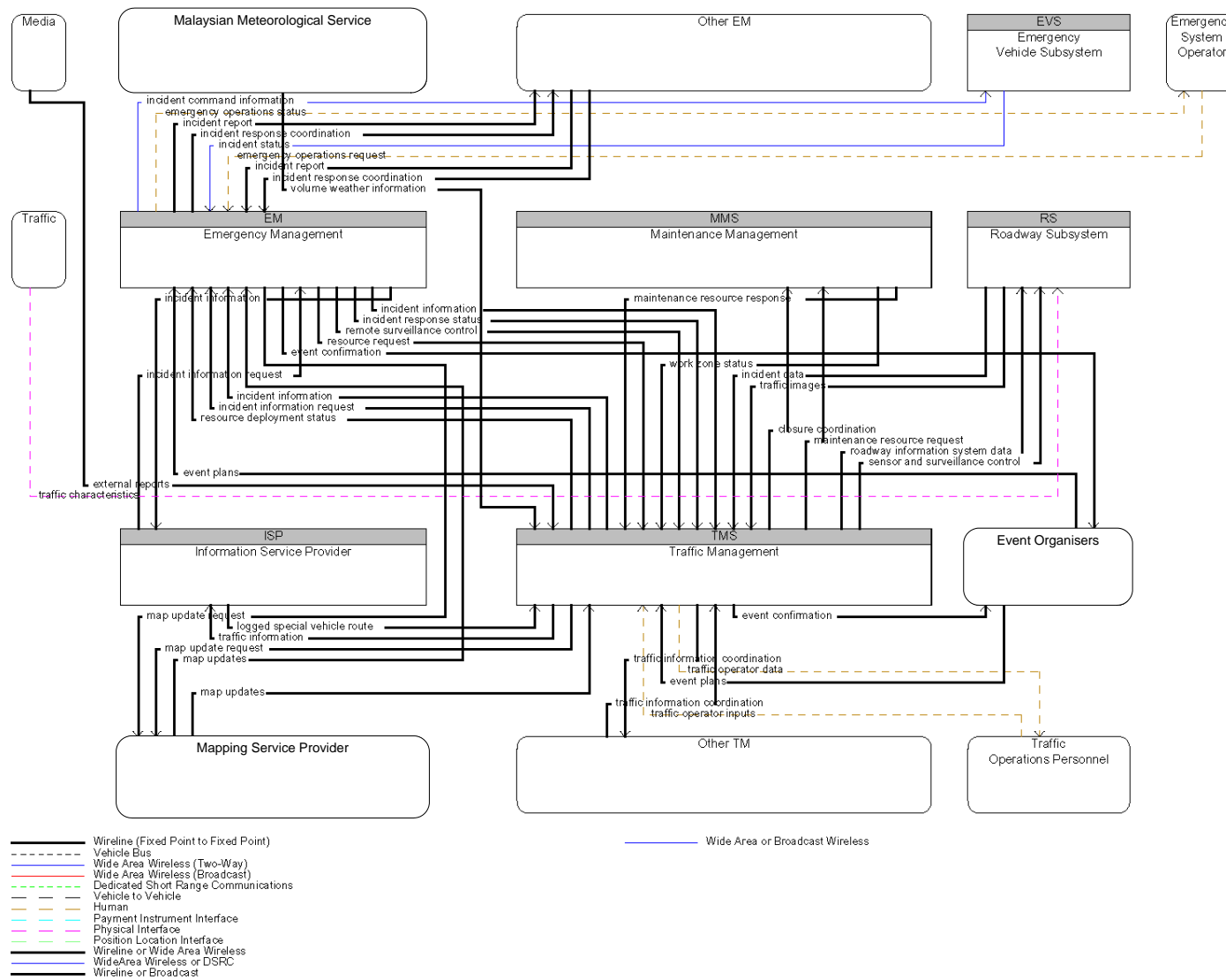


ATMS06



- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
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- Wireline or Wide Area Wireless
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- Wireline or Broadcast

ATMS07

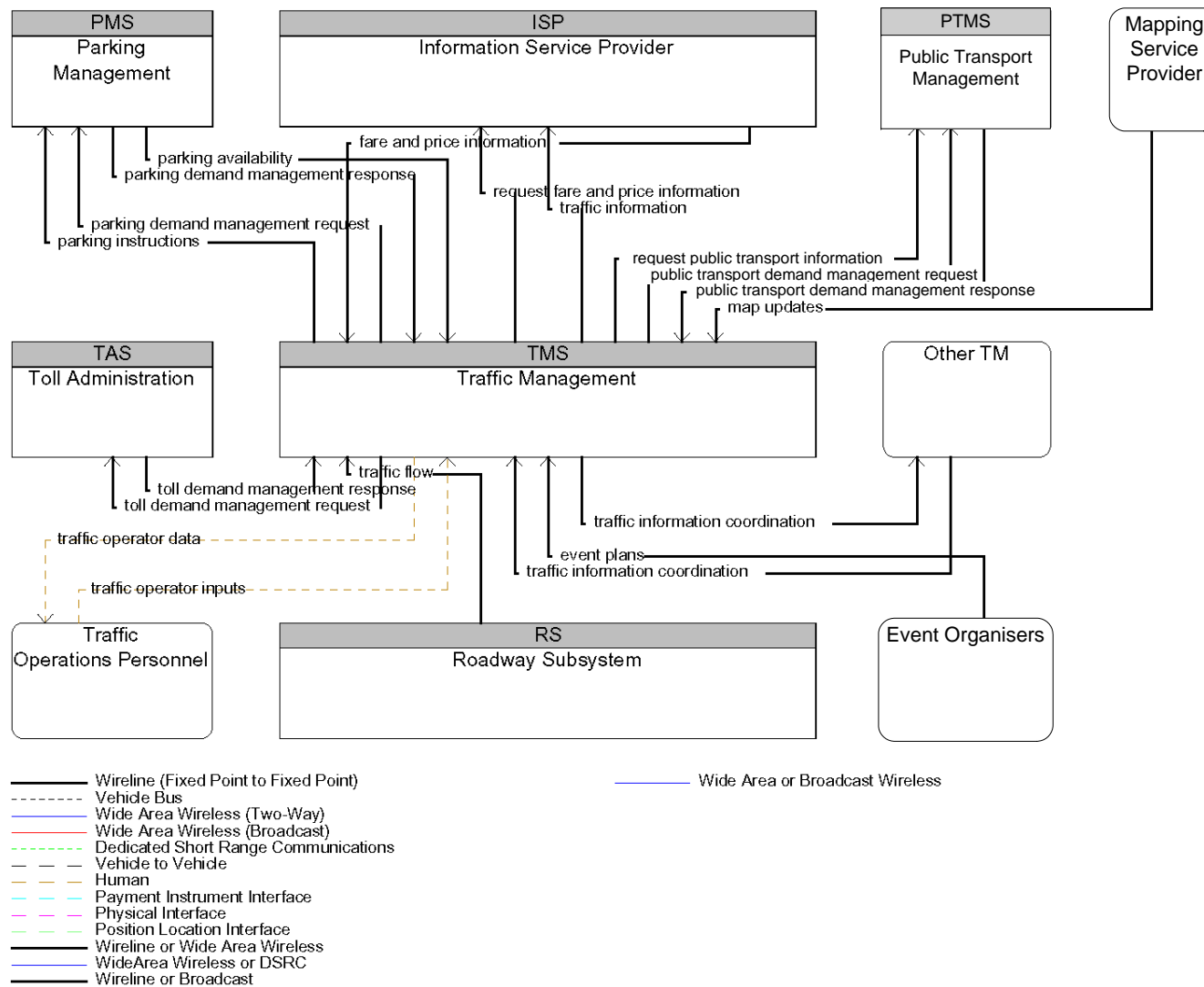


ATMS08

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Deployment Packages Framework

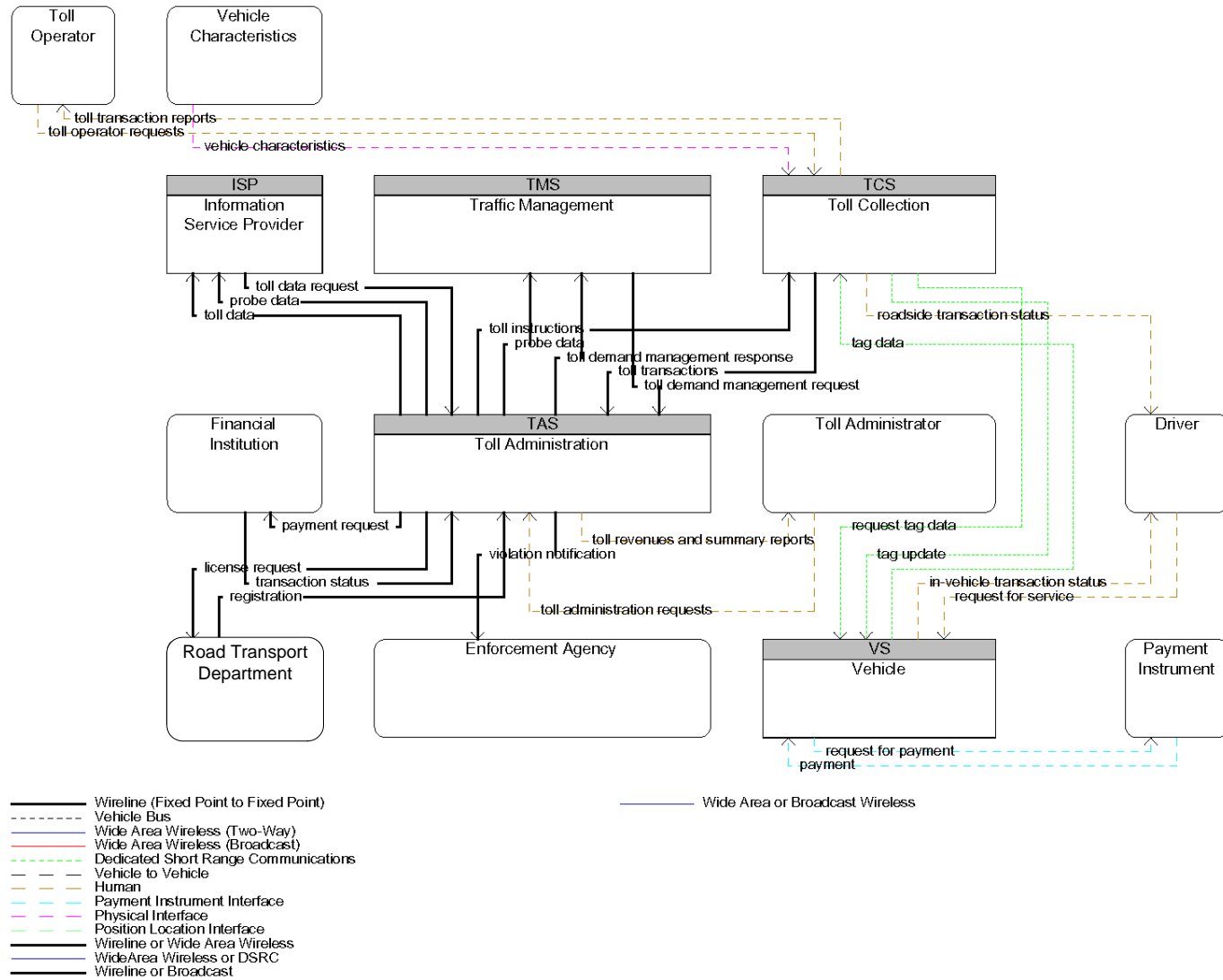


ATMS09

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Deployment Packages Framework

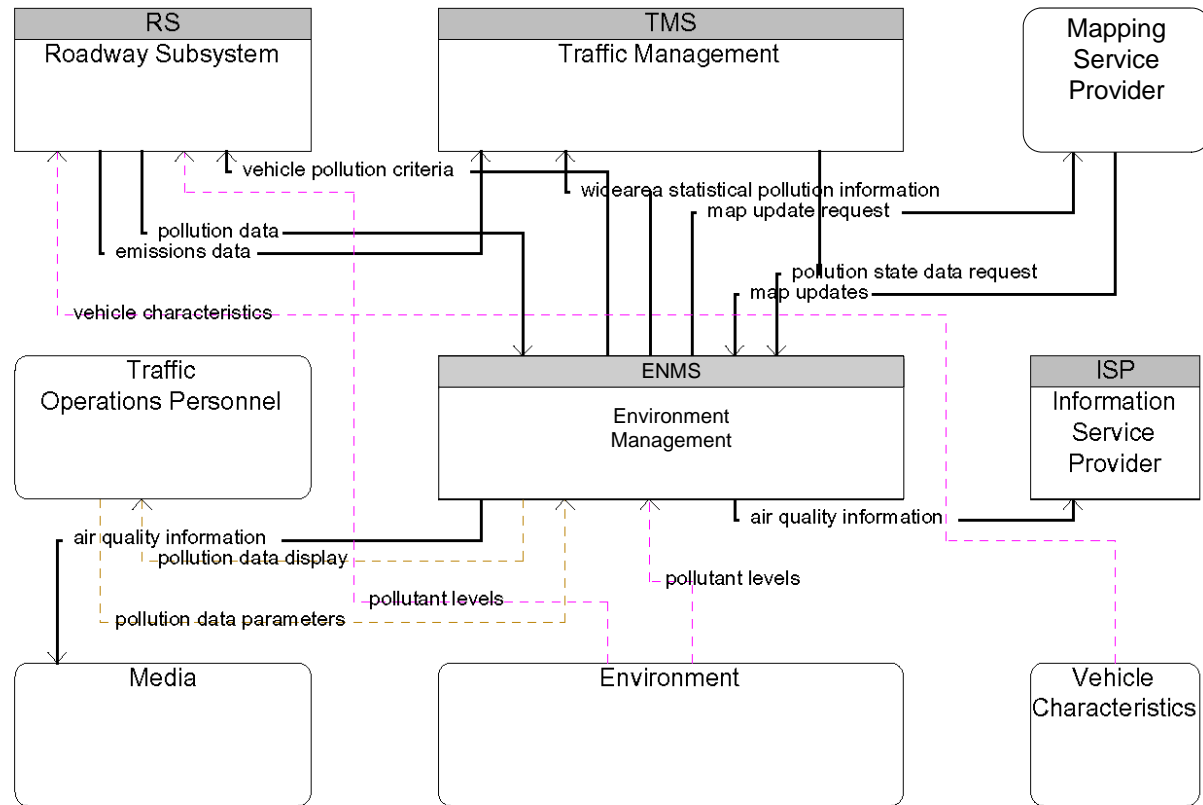


ATMS10

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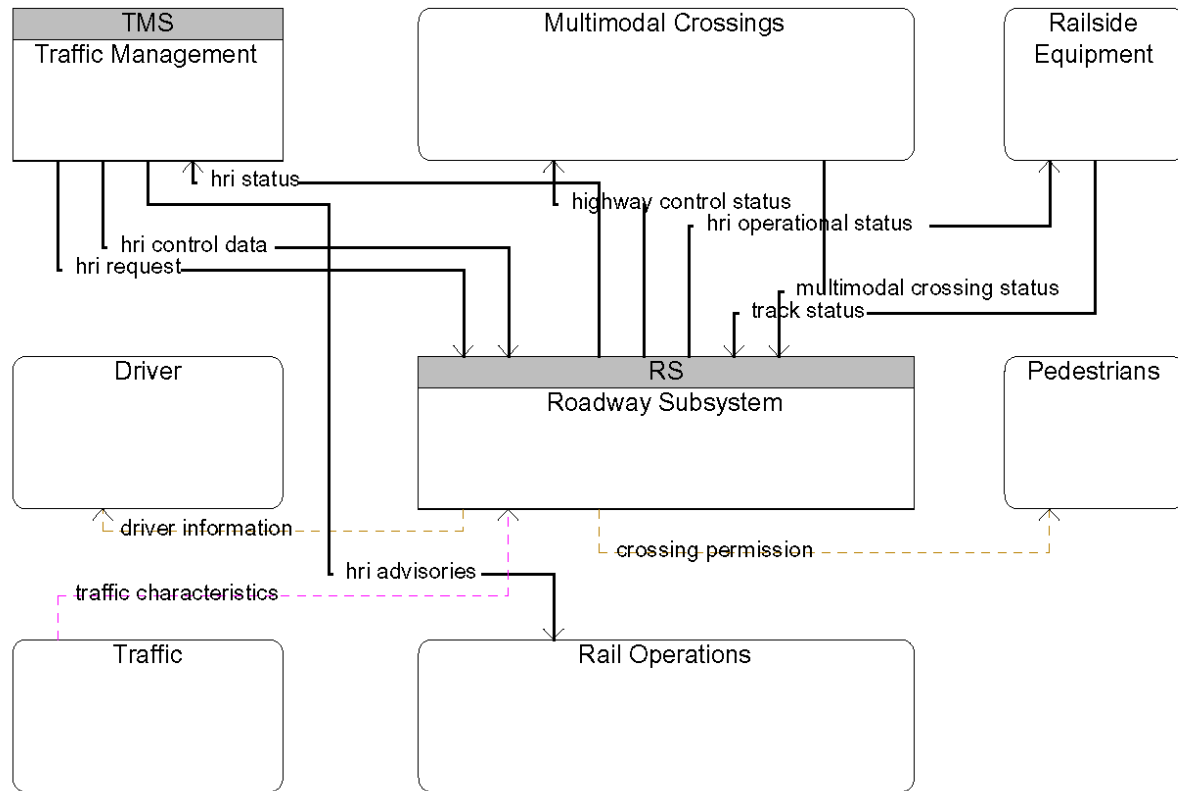
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Deployment Packages Framework



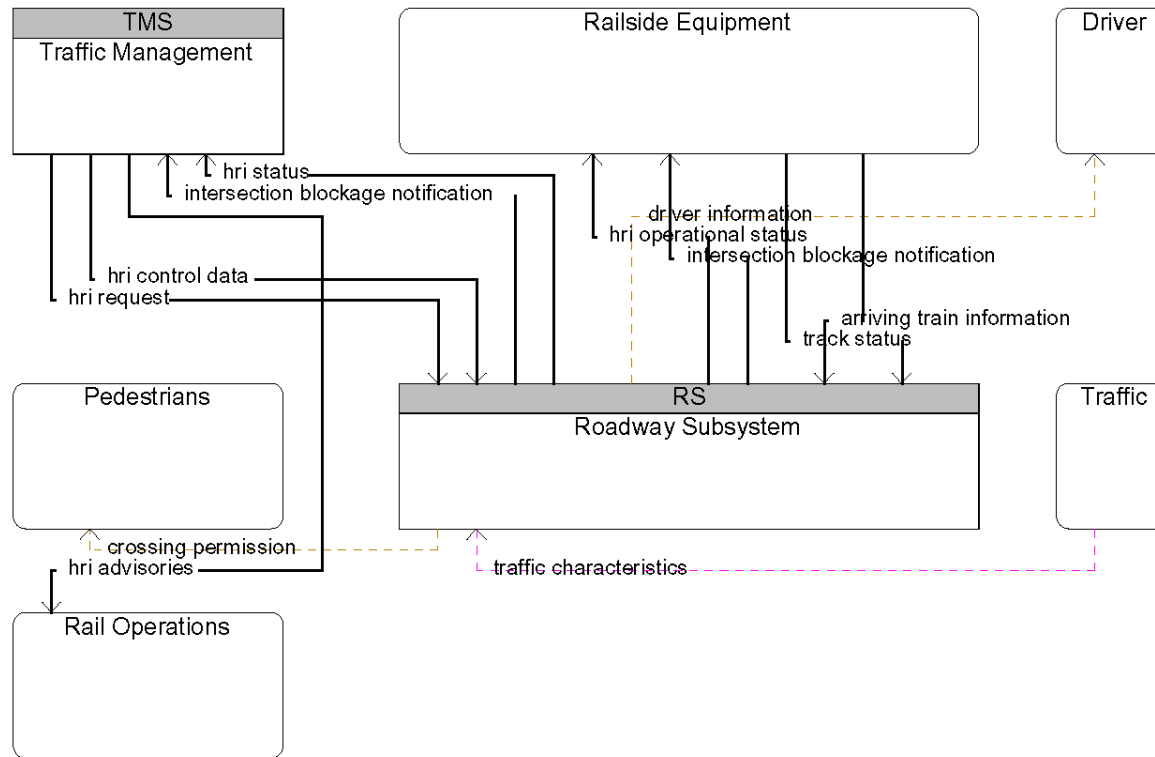
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- Wireline or Wide Area Wireless
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- Wireline or Broadcast

ATMS11



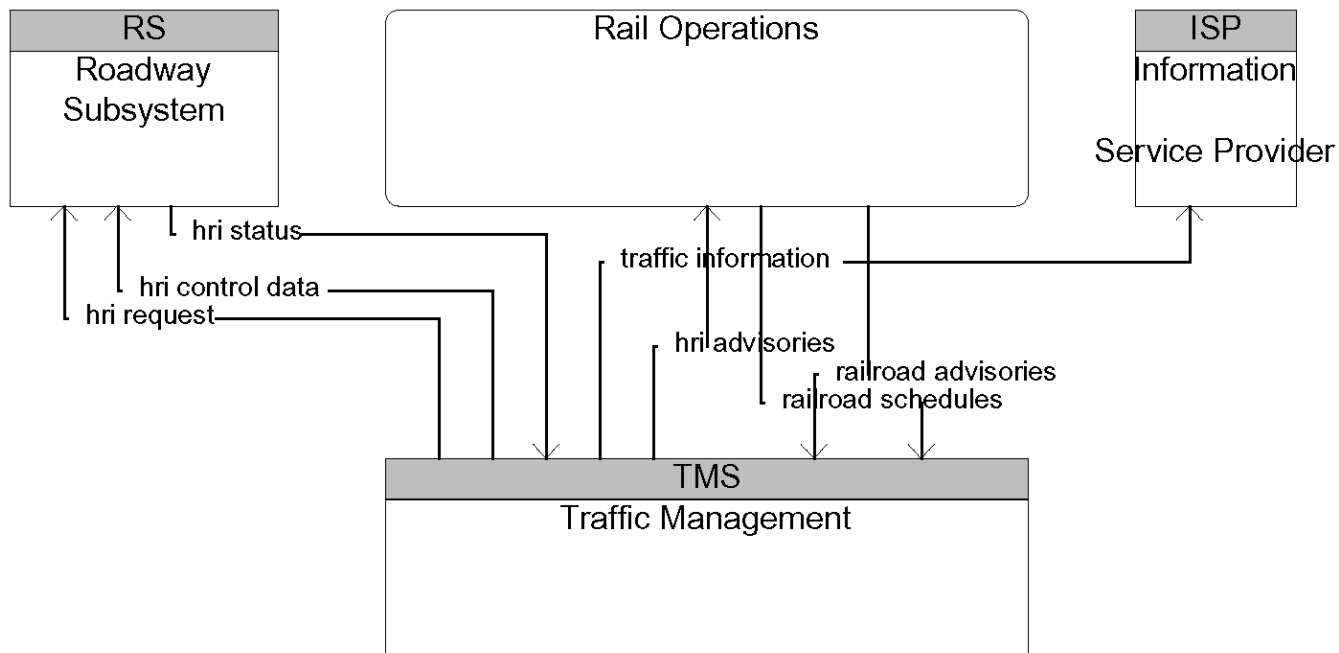
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- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast
- Wide Area or Broadcast Wireless

ATMS13



- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
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- Dedicated Short Range Communications
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- Payment Instrument Interface
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ATMS14



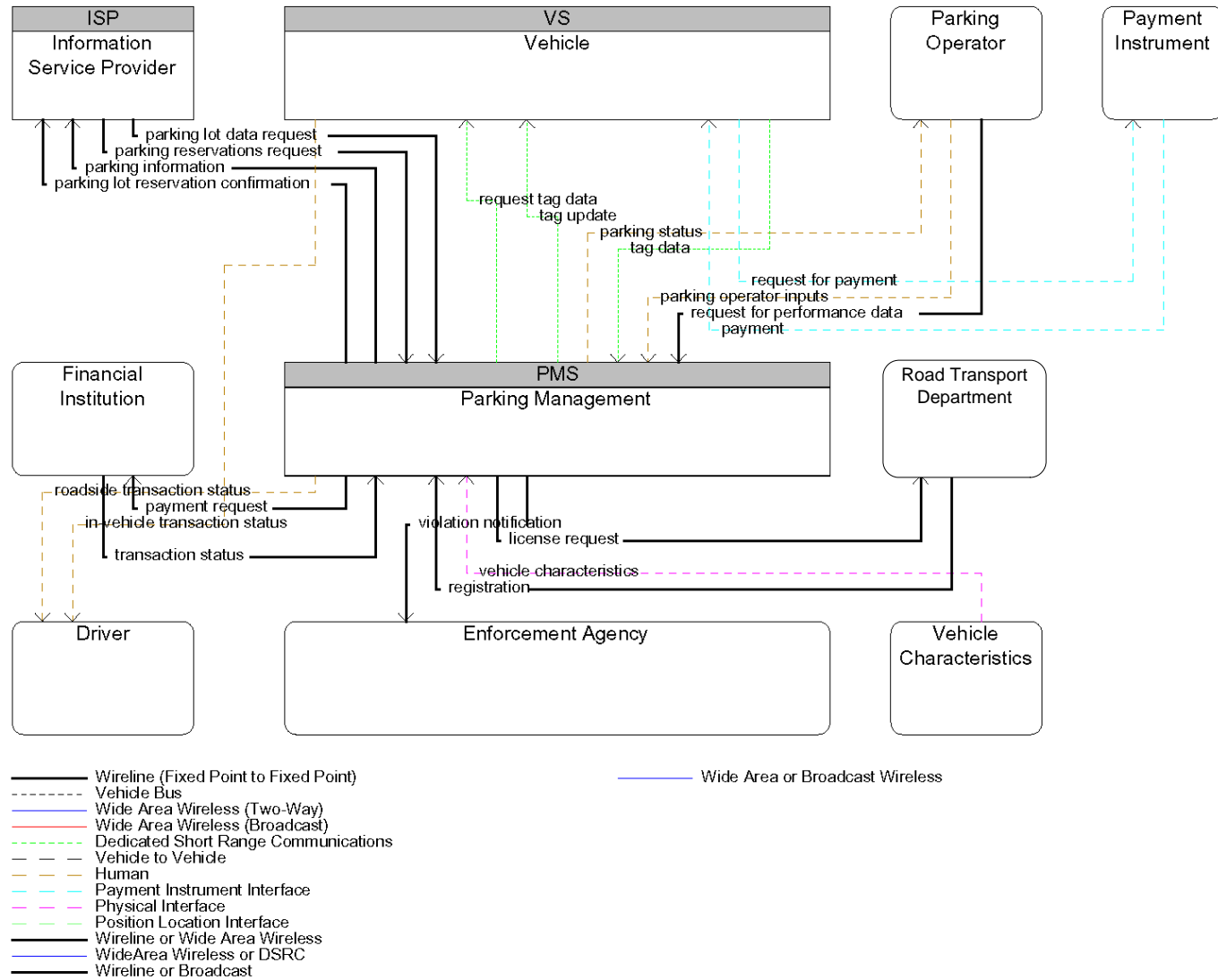
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ATMS15

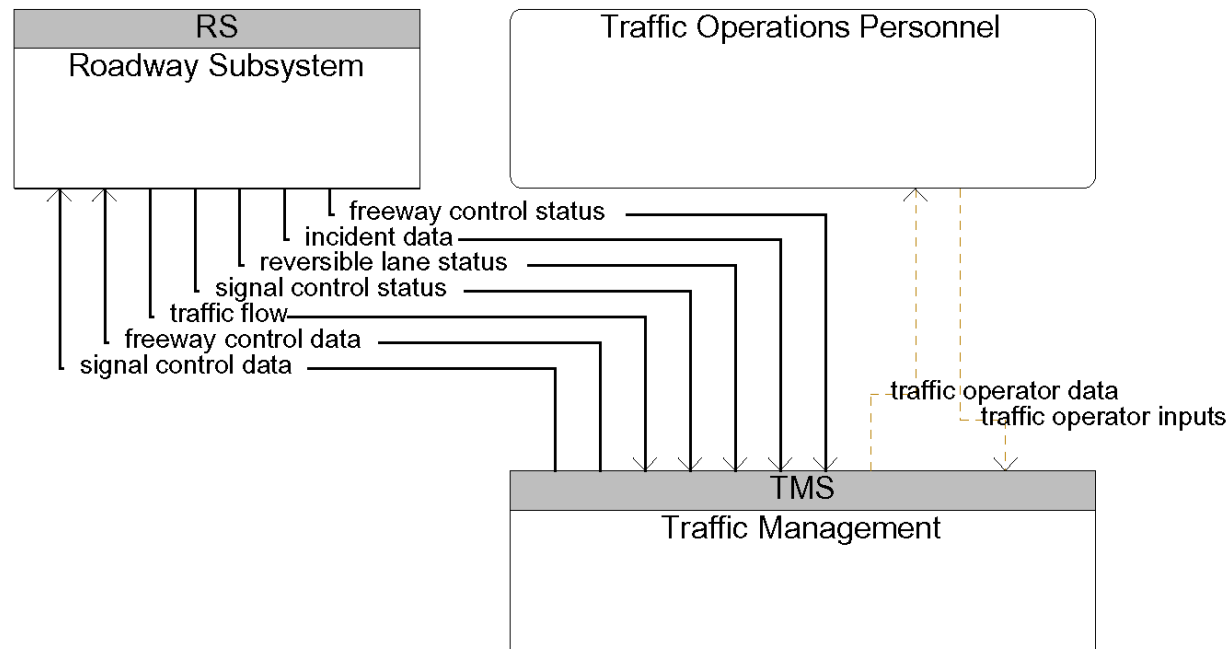
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Deployment Packages Framework

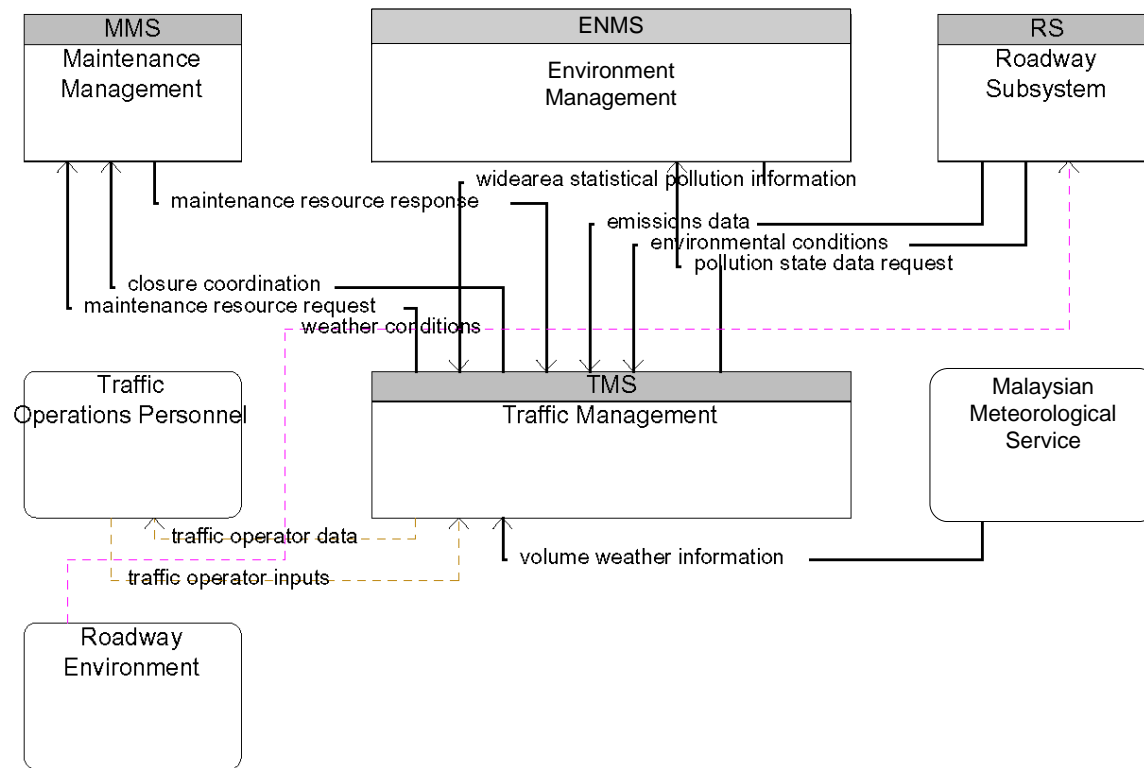


ATMS16



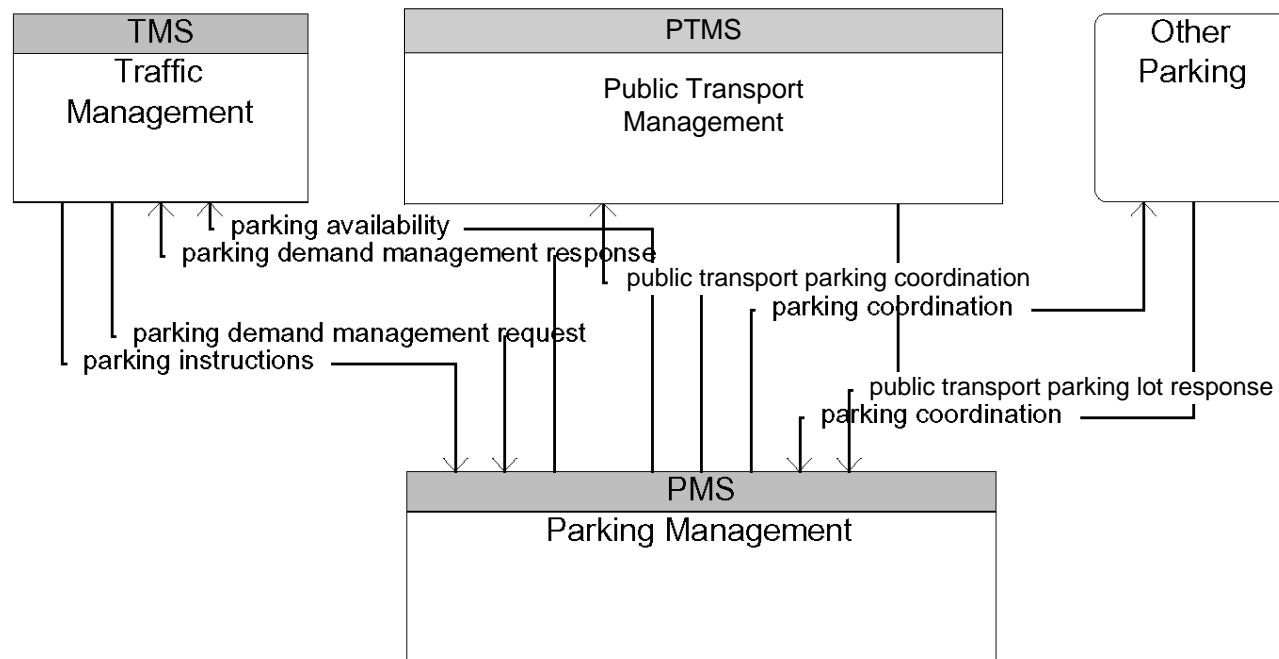
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- Wireline or Broadcast

ATMS17



- Wireline (Fixed Point to Fixed Point)
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- Wireline or Broadcast

ATMS18



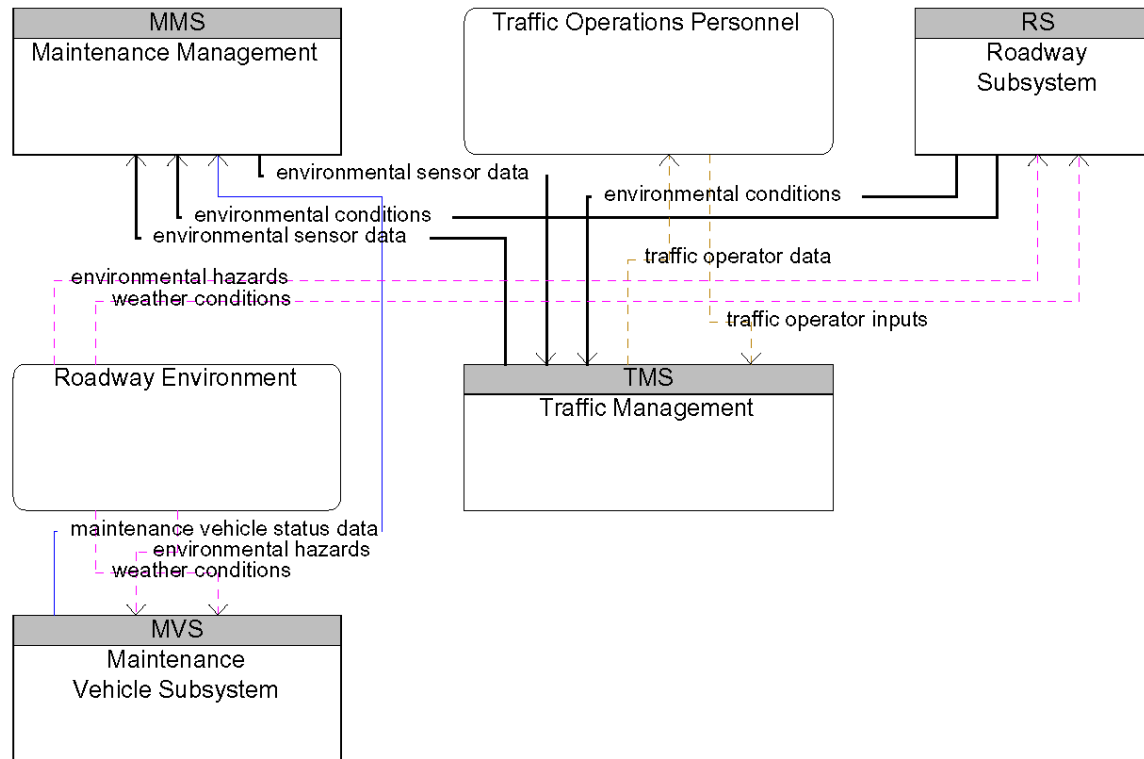
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ATMS19

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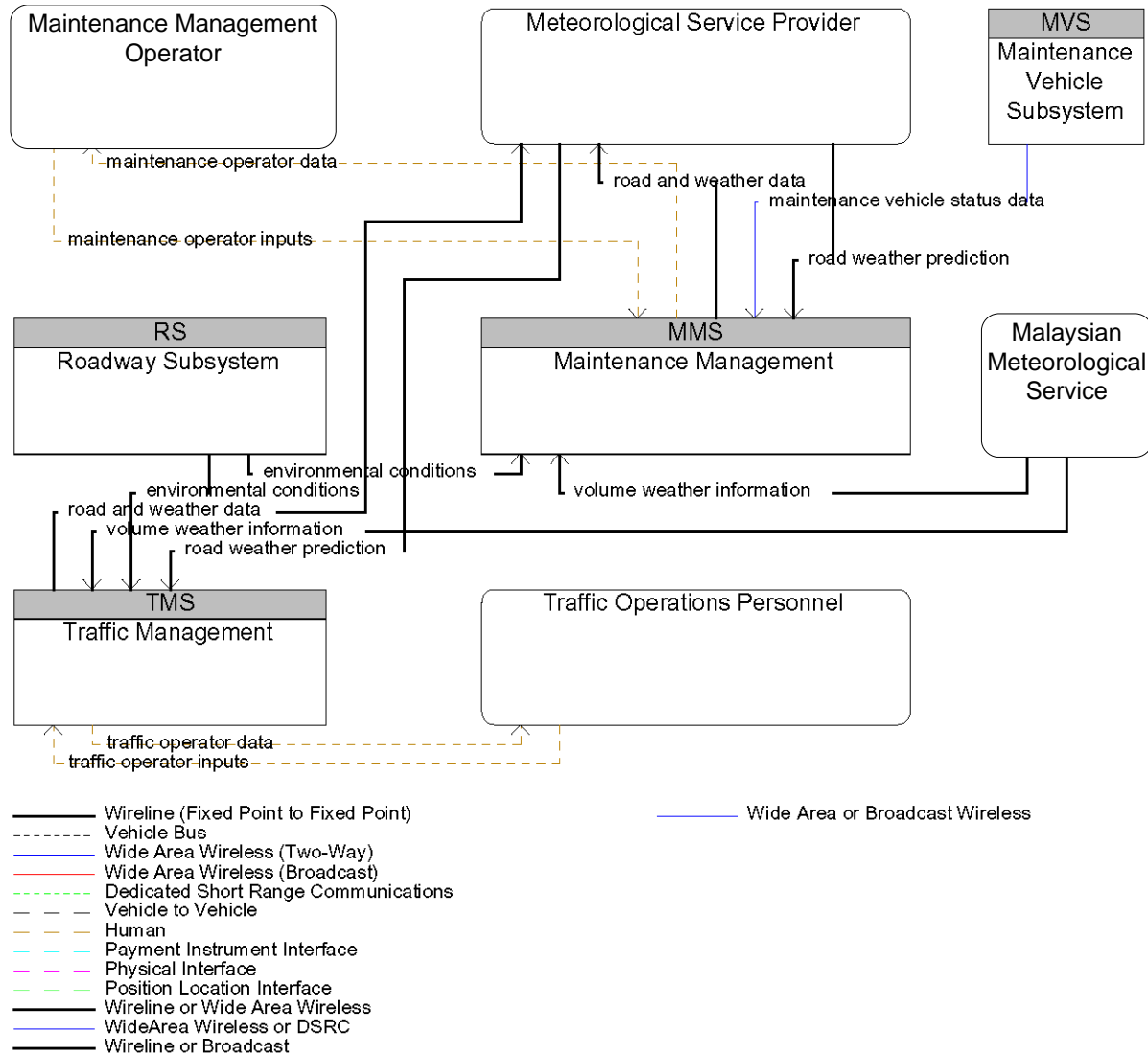
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Deployment Packages Framework



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- WideArea Wireless or DSRC
- Wireline or Broadcast

ATMS20

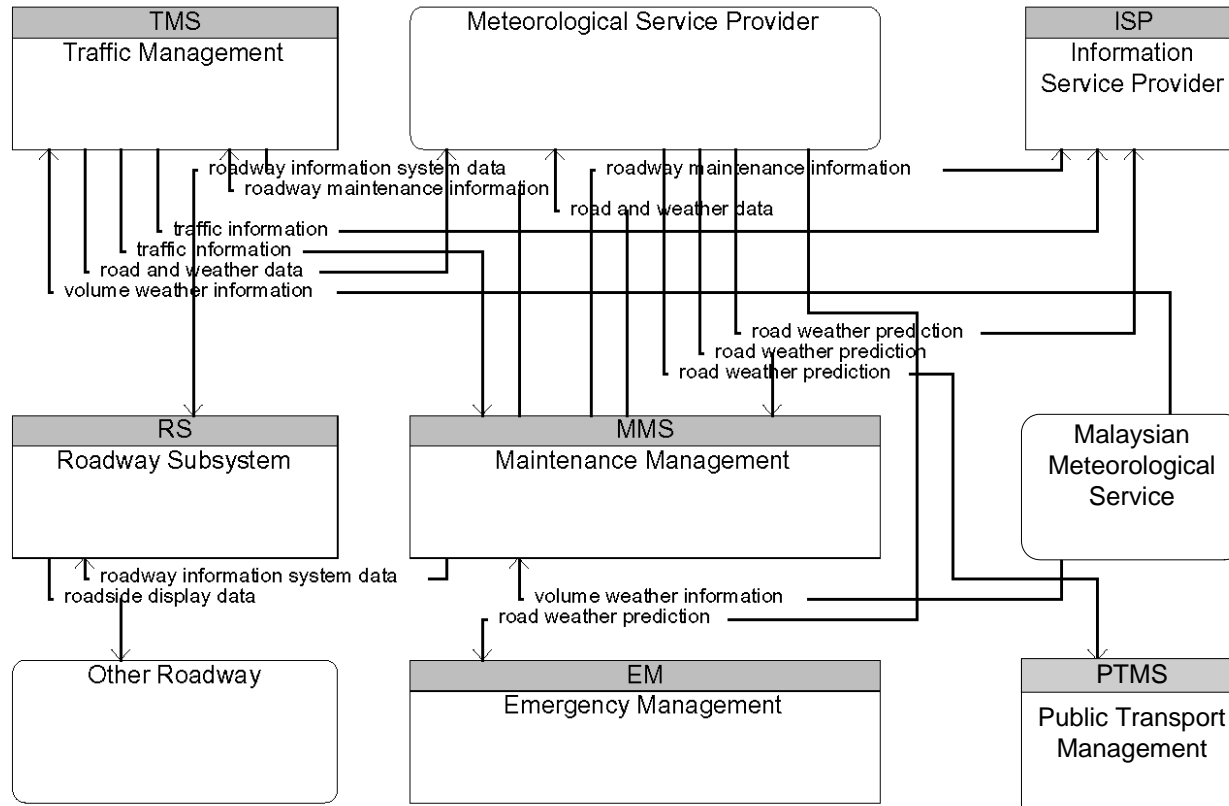


ATMS21

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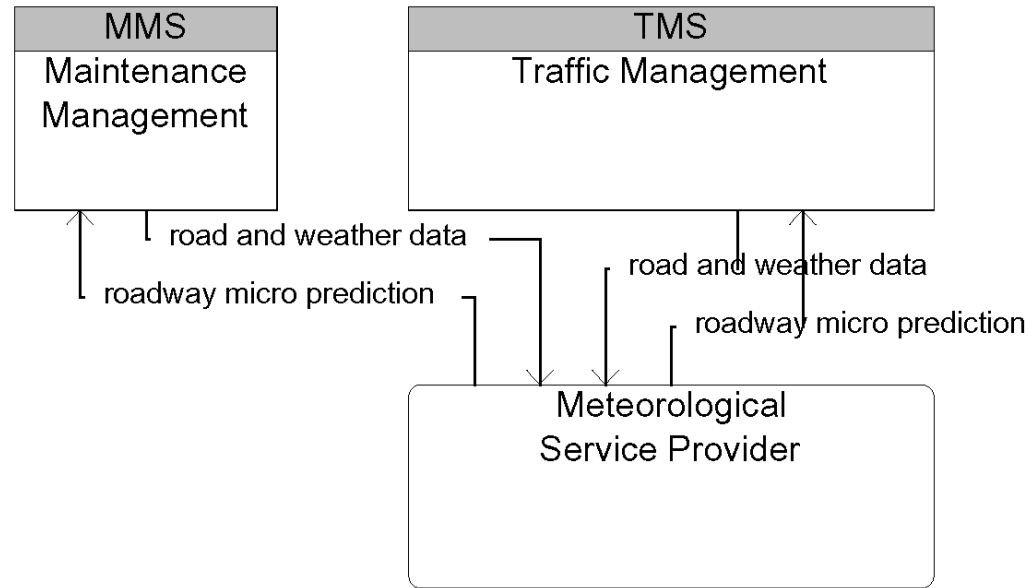
Technical Note No. 5

Deployment Packages Framework



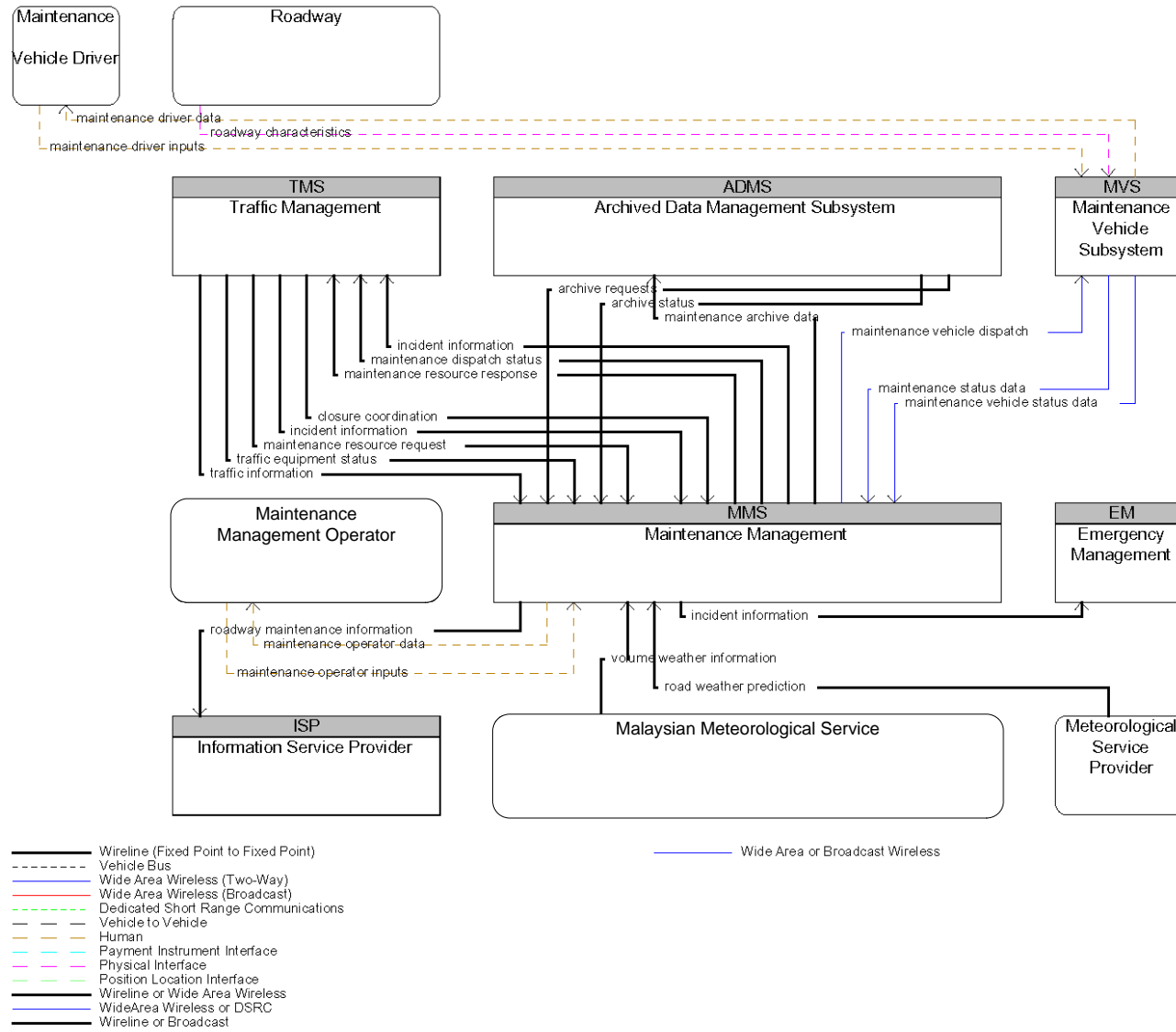
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- - - - Vehicle to Vehicle
- — — Human
- — — Payment Instrument Interface
- — — Physical Interface
- — — Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

ATMS22



- Wireline (Fixed Point to Fixed Point) ——— Wide Area or Broadcast Wireless
- Vehicle Bus
- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- - - Vehicle to Vehicle
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- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

ATMS23

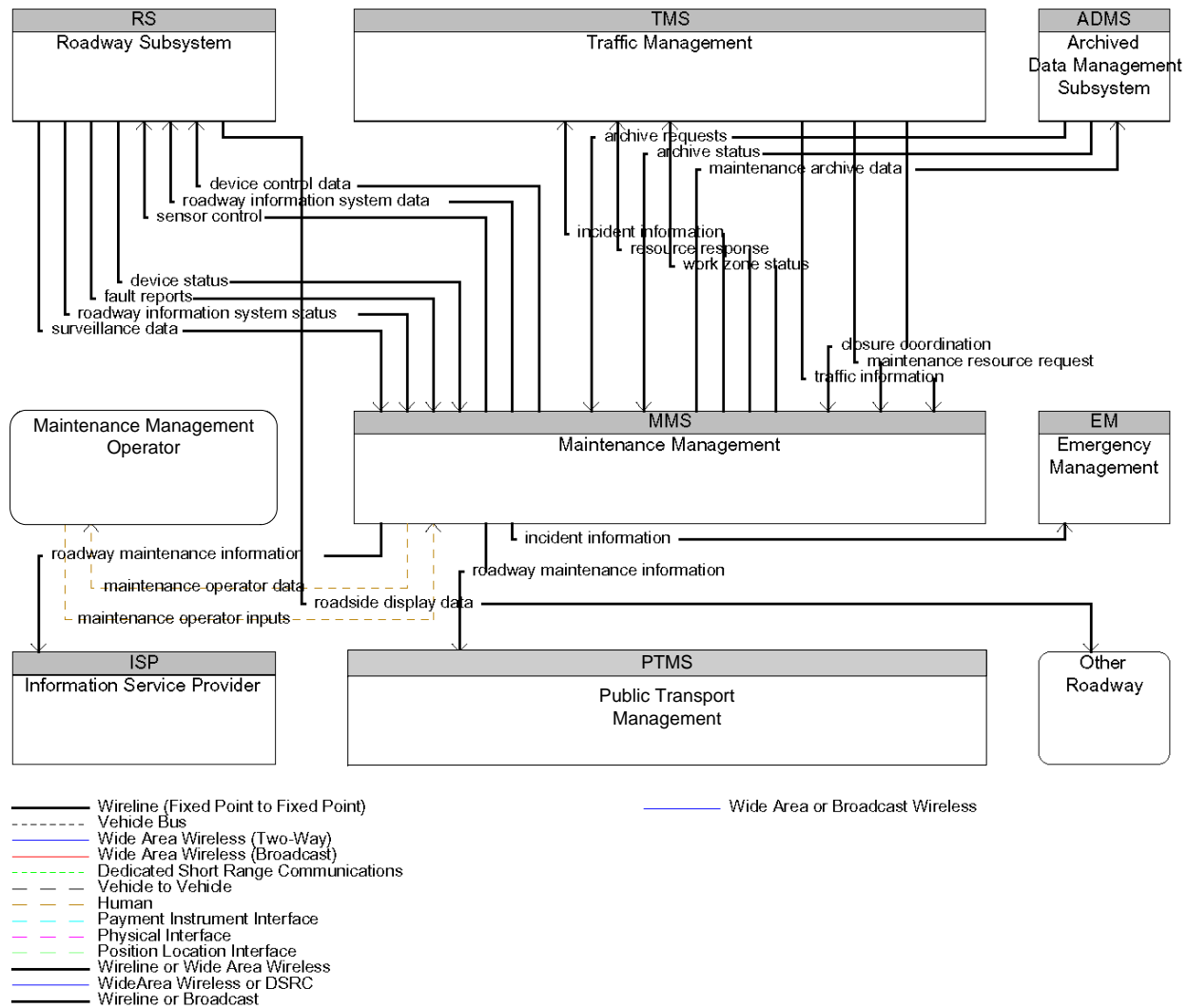


ATMS24

Development of ITS System Architecture for Malaysia

Technical Note No. 5

Deployment Packages Framework

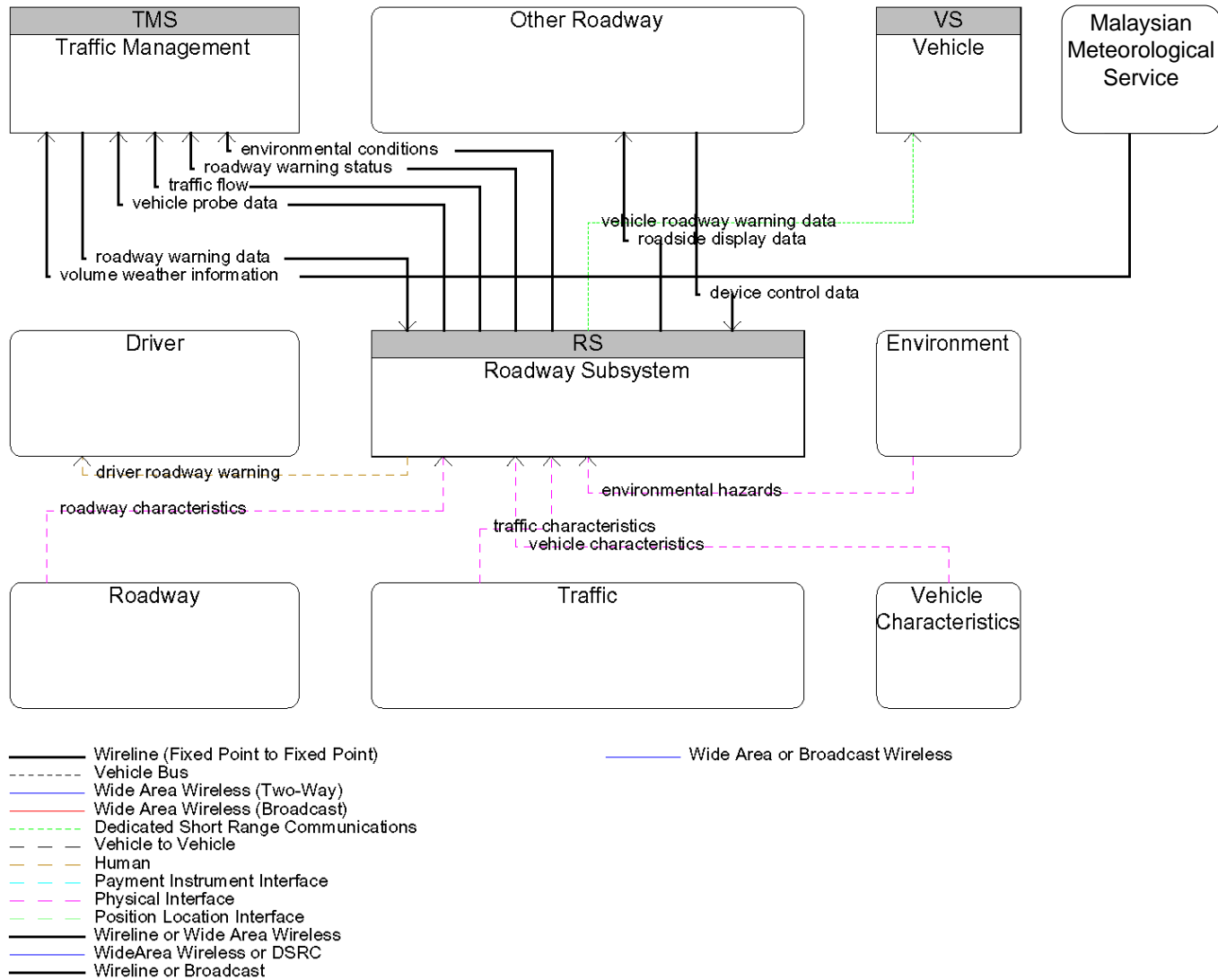


ATMS25

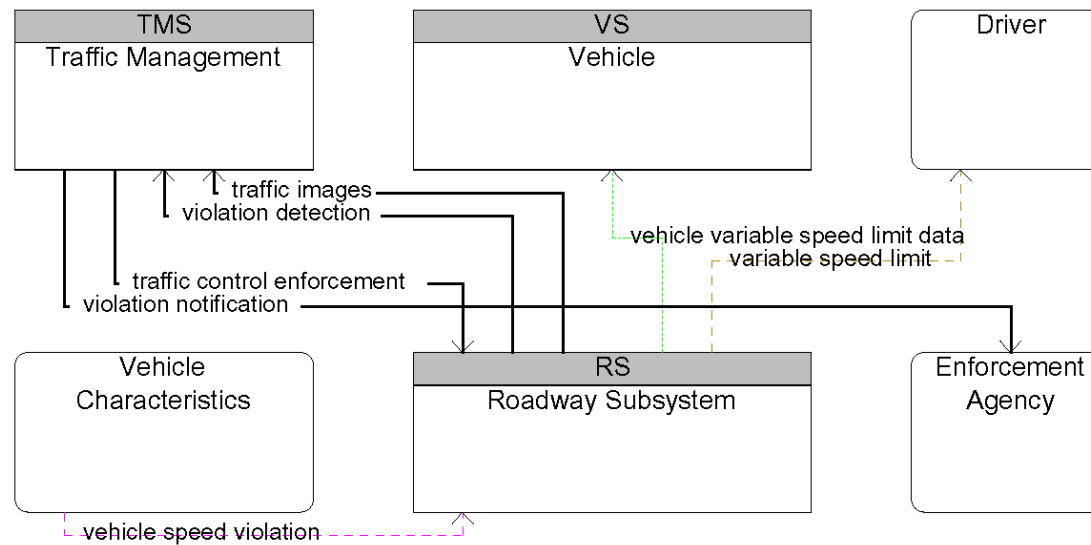
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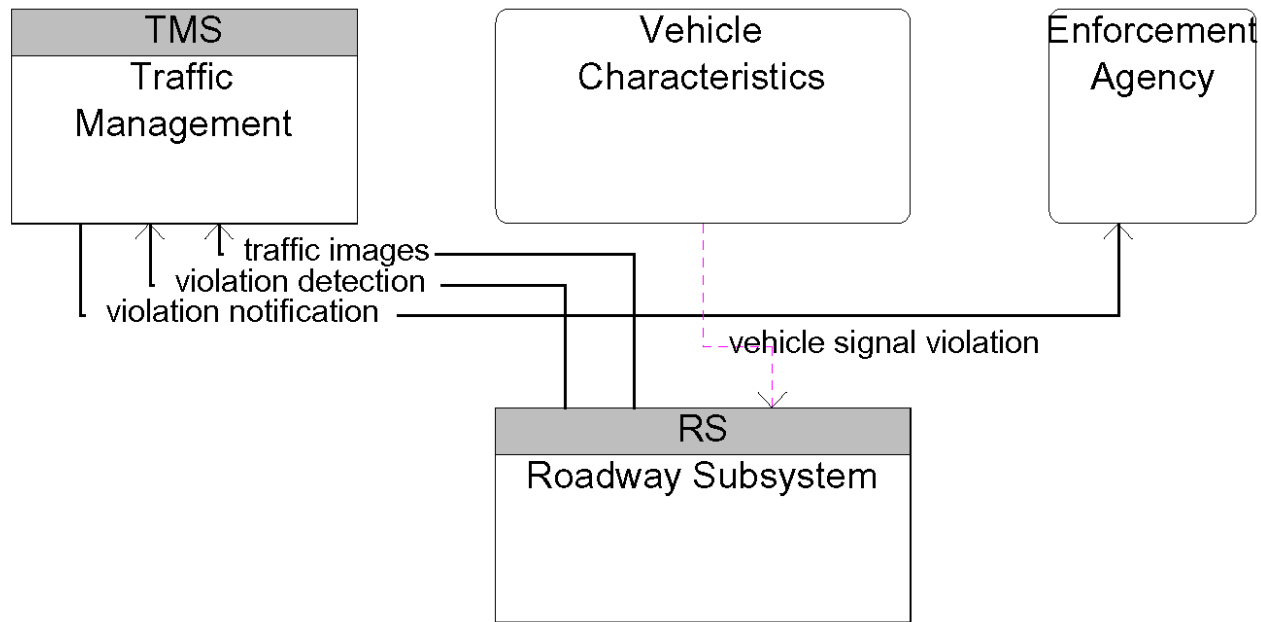


ATMS26



- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
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- - - Human
- - - Payment Instrument Interface
- - - Physical Interface
- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

ATMS27

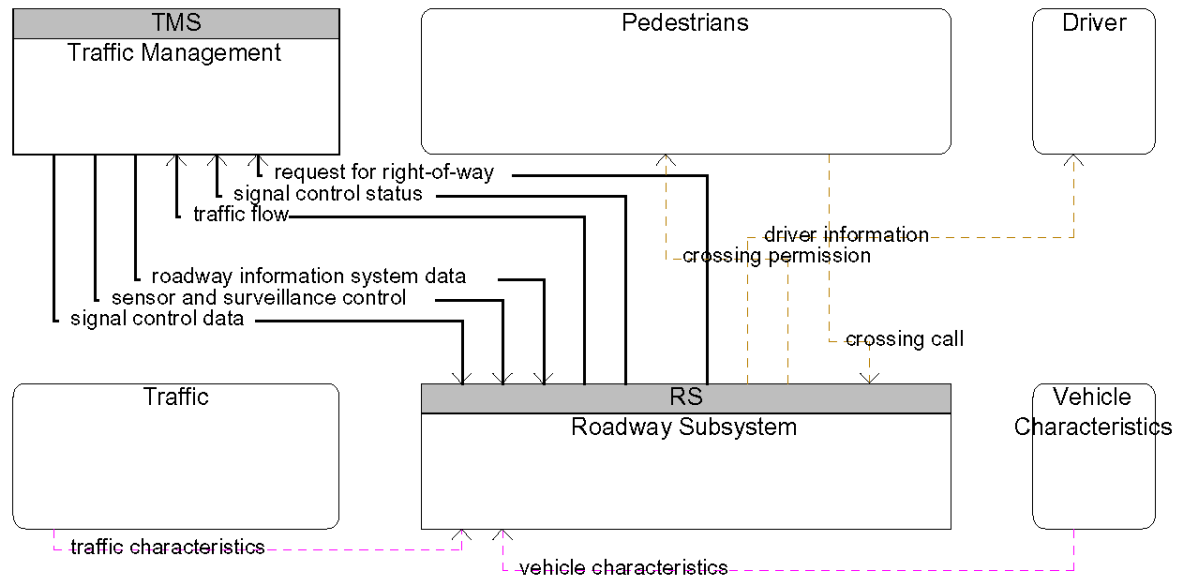


- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- - - Vehicle to Vehicle
- - - Human
- - - Payment Instrument Interface
- - - Physical Interface
- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

Development of ITS System Architecture for Malaysia

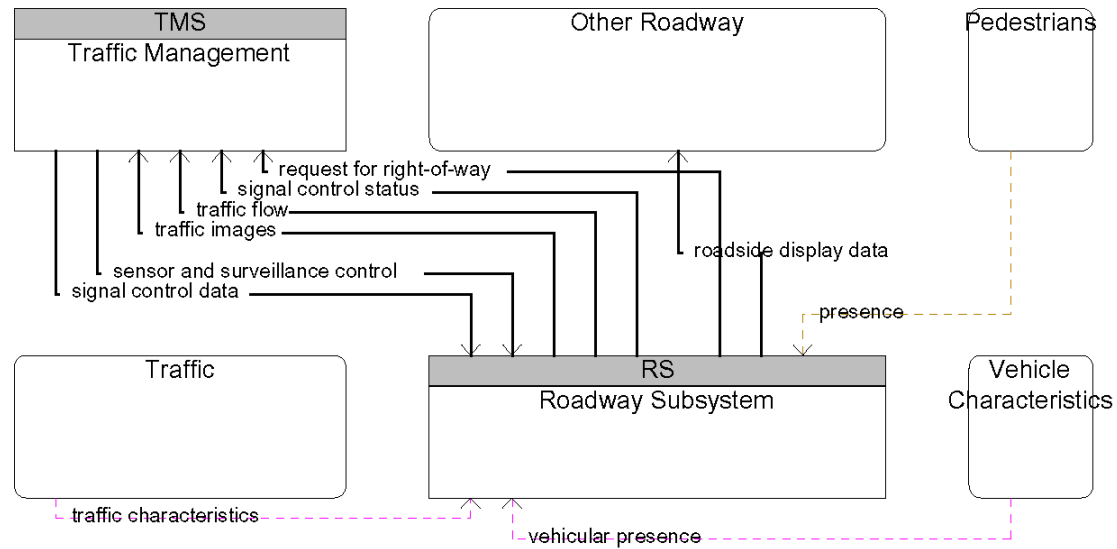
Technical Note No. 5

Deployment Packages Framework



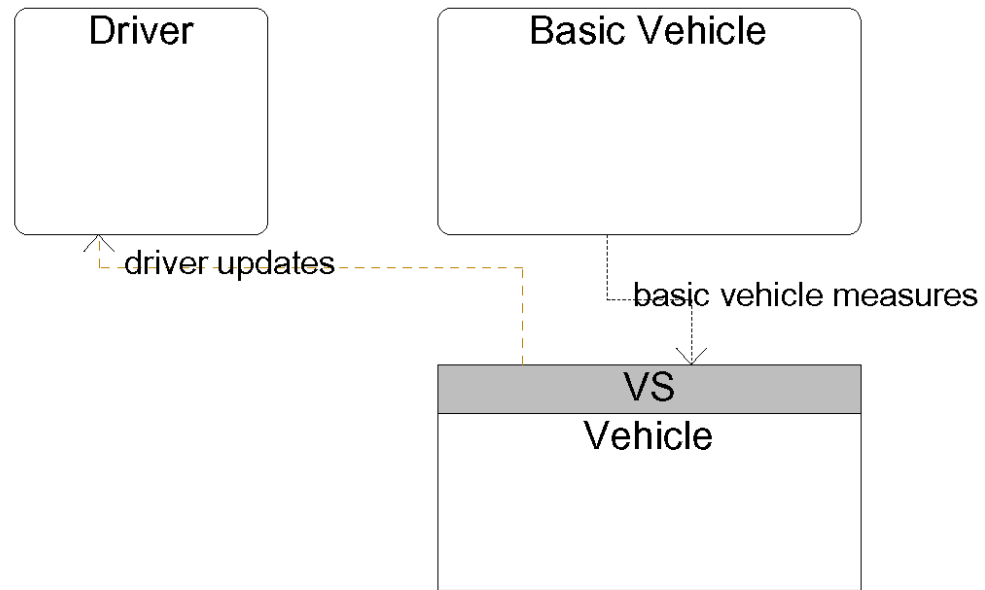
- Wireline (Fixed Point to Fixed Point)
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- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

ATMS29



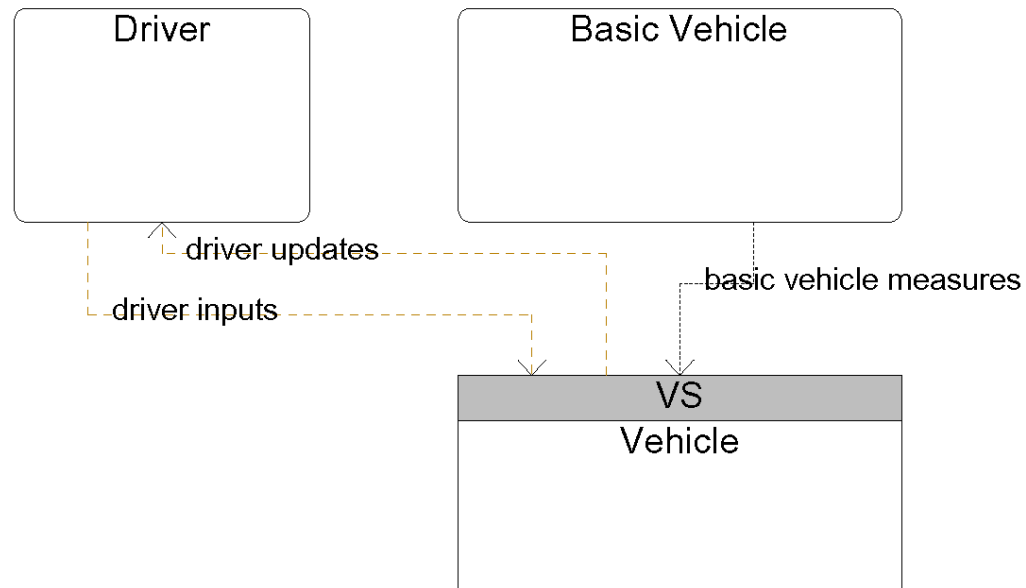
- Wireline (Fixed Point to Fixed Point)
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- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- Vehicle to Vehicle
- Human
- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

ATMS30



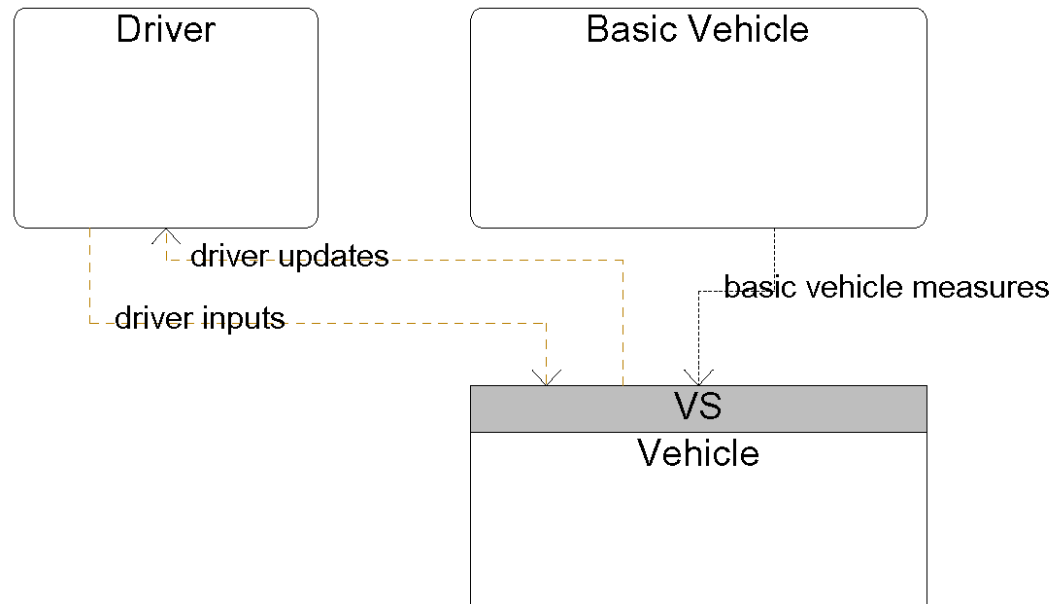
- Wireline (Fixed Point to Fixed Point) ——— Wide Area or Broadcast Wireless
- Vehicle Bus
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- - - Payment Instrument Interface
- - - Physical Interface
- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS01



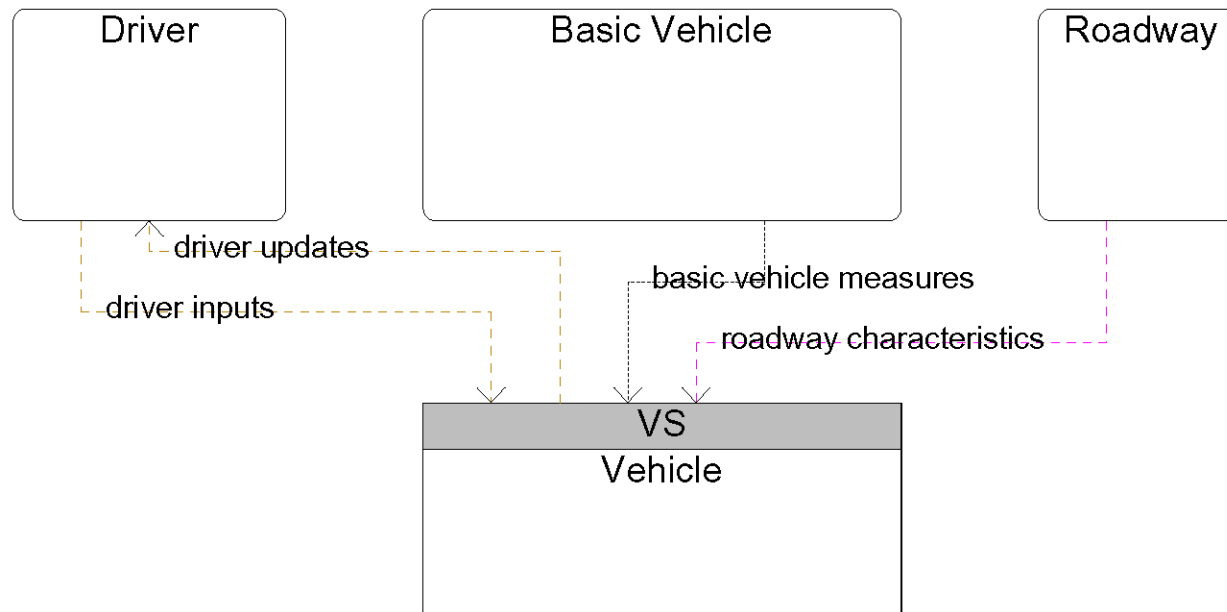
- Wireline (Fixed Point to Fixed Point) —— Wide Area or Broadcast Wireless
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- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS02



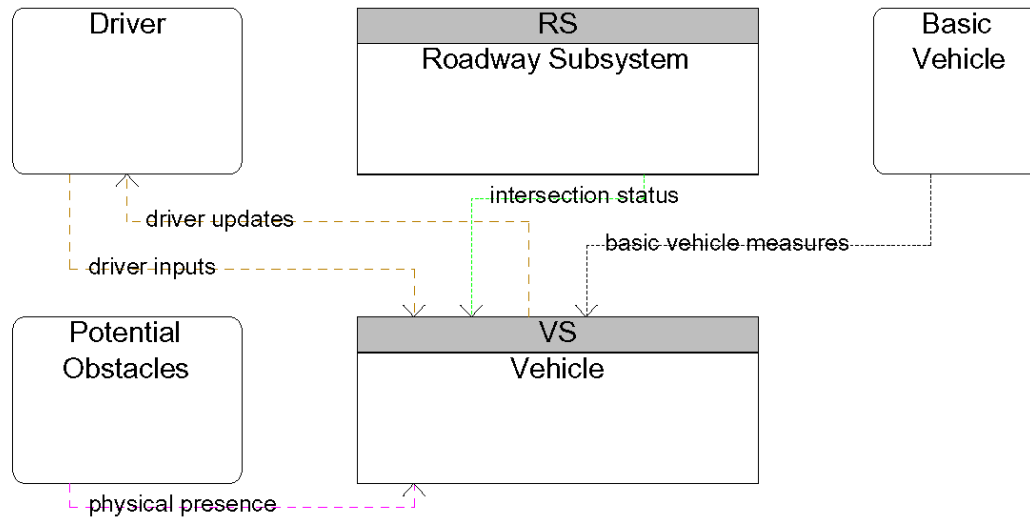
- Wireline (Fixed Point to Fixed Point) ——— Wide Area or Broadcast Wireless
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- - - - Physical Interface
- - - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS03



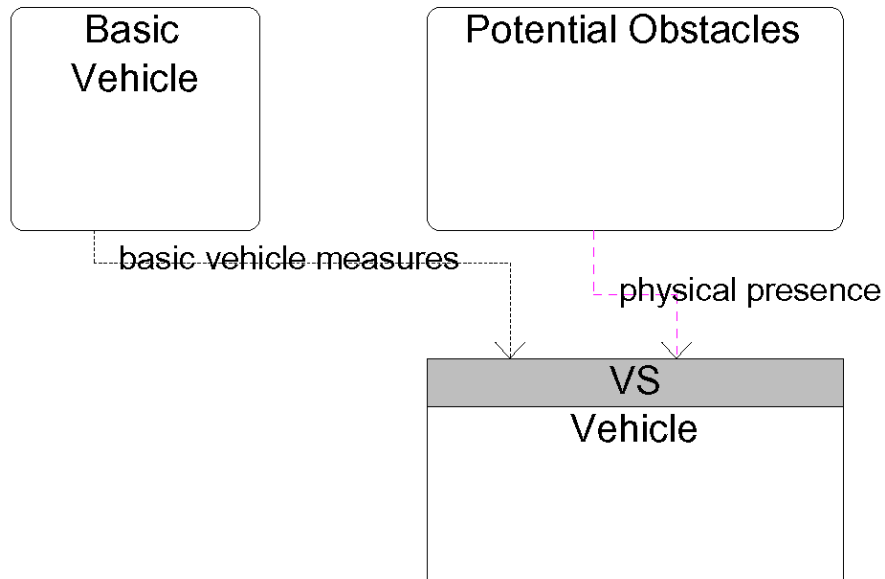
- Wireline (Fixed Point to Fixed Point) — Wide Area or Broadcast Wireless
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- Wireline or Broadcast

AVSS04

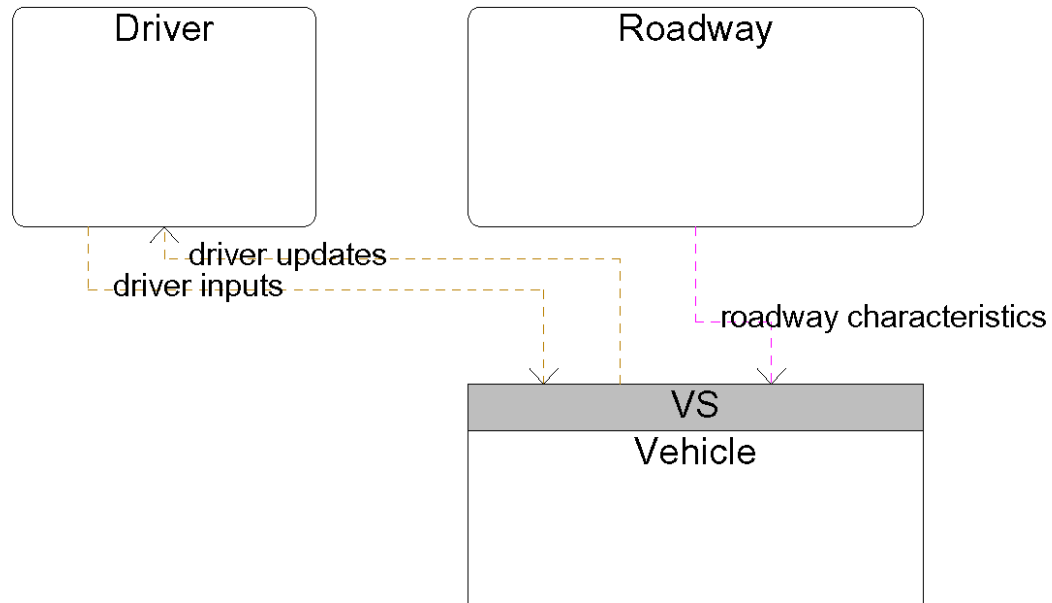


- Wireline (Fixed Point to Fixed Point)
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- Wide Area Wireless (Broadcast)
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- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS05

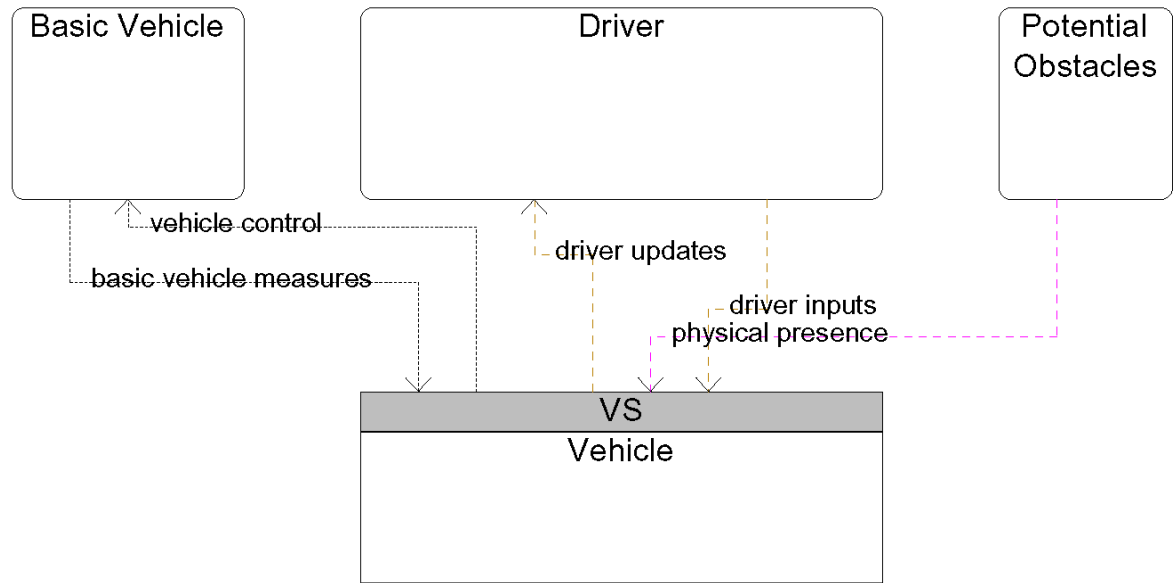


- Wireline (Fixed Point to Fixed Point) — Wide Area or Broadcast Wireless
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- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast



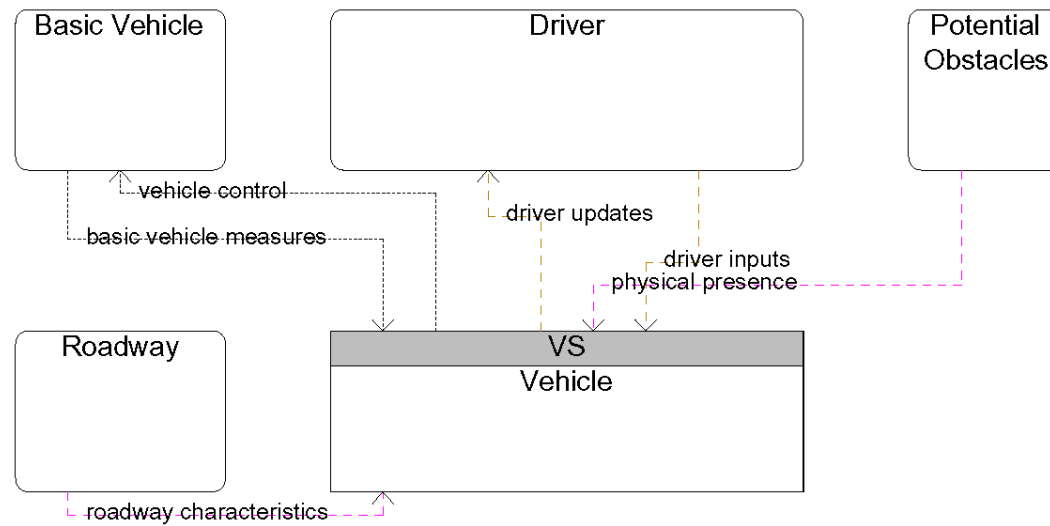
- Wireline (Fixed Point to Fixed Point) ——— Wide Area or Broadcast Wireless
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- Wide Area Wireless (Broadcast)
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- - - Physical Interface
- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS07



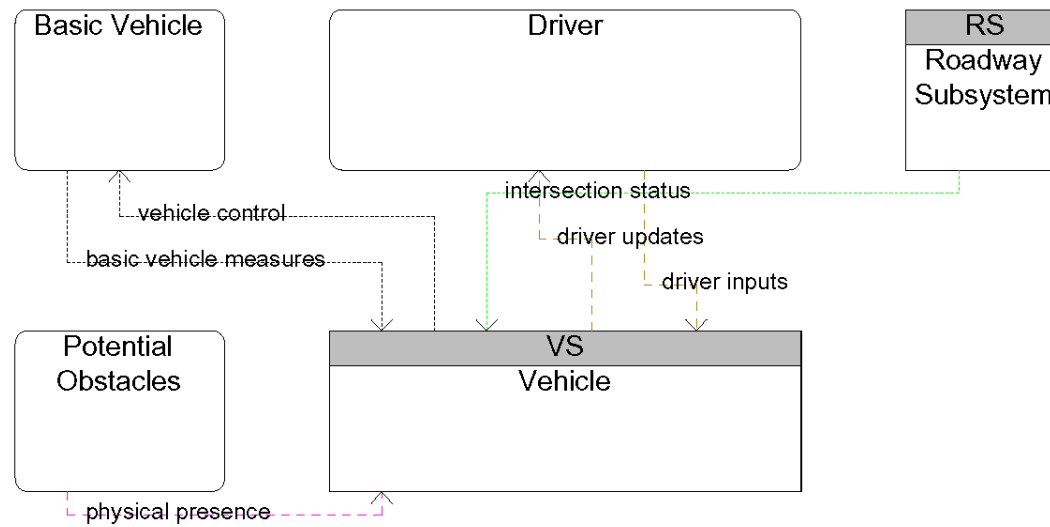
- Wireline (Fixed Point to Fixed Point)
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- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
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- - - Physical Interface
- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast
- Wide Area or Broadcast Wireless

AVSS08



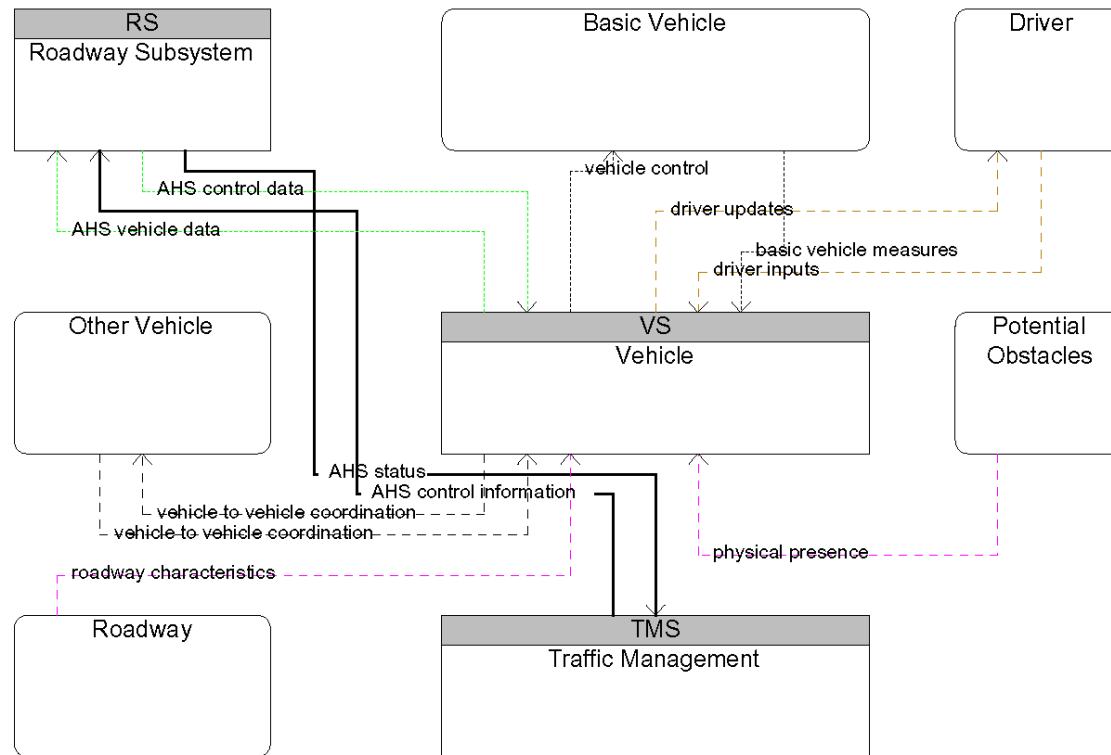
- Wireline (Fixed Point to Fixed Point)
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- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS09



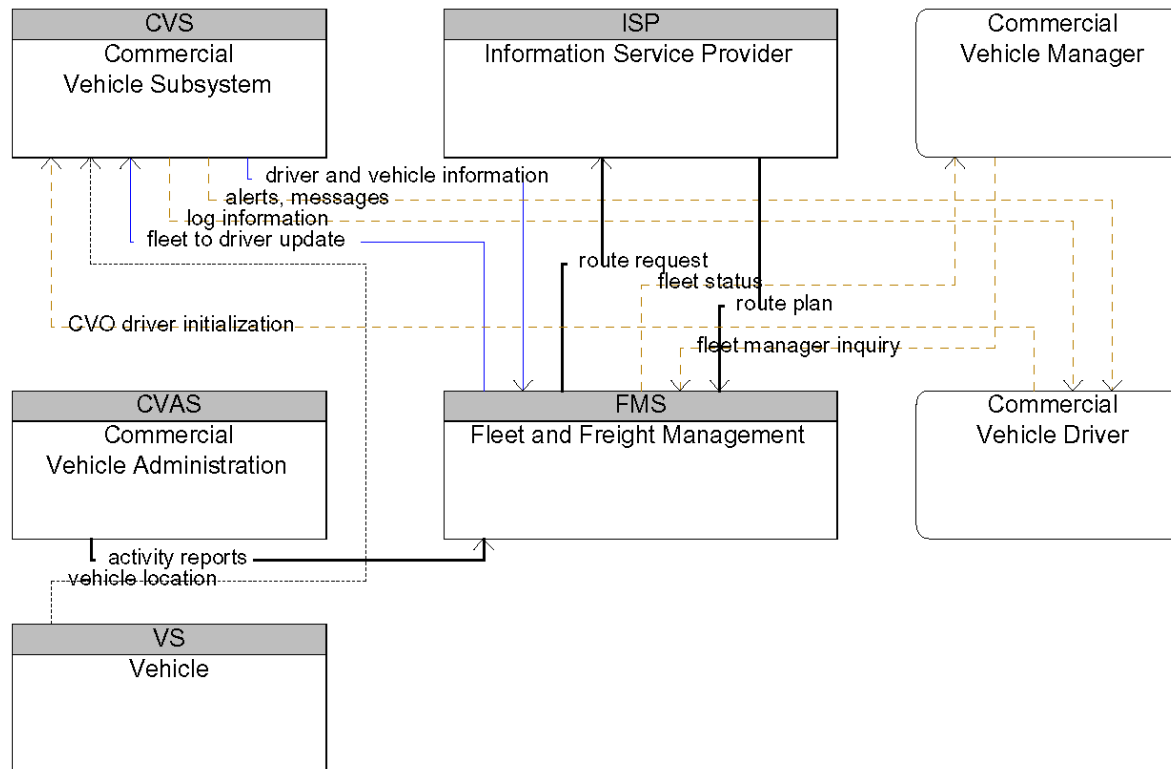
- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- ===== Wide Area Wireless (Two-Way)
- ===== Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- Vehicle to Vehicle
- Human
- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- ===== WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS10



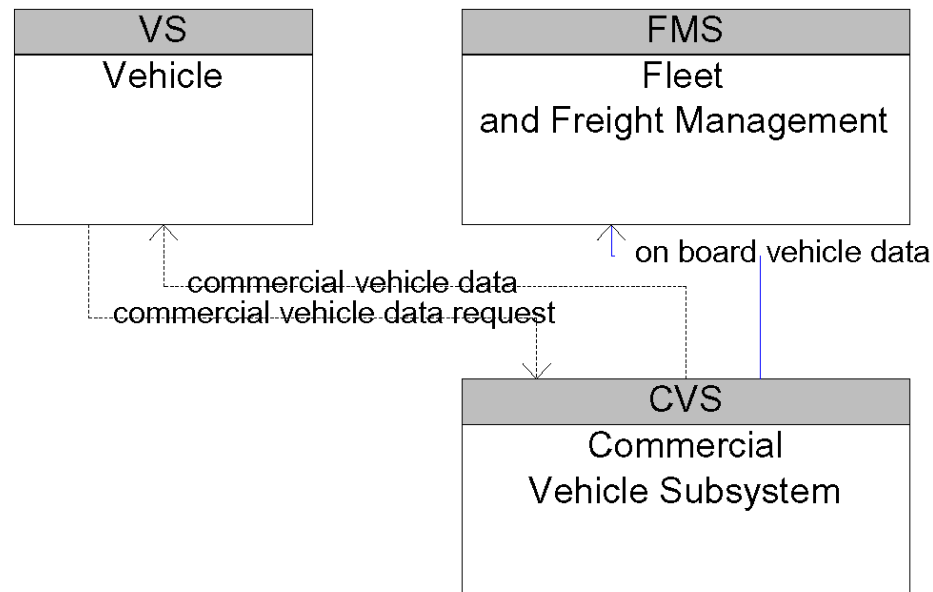
- Wireline (Fixed Point to Fixed Point)
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- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
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- - - - Human
- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

AVSS11



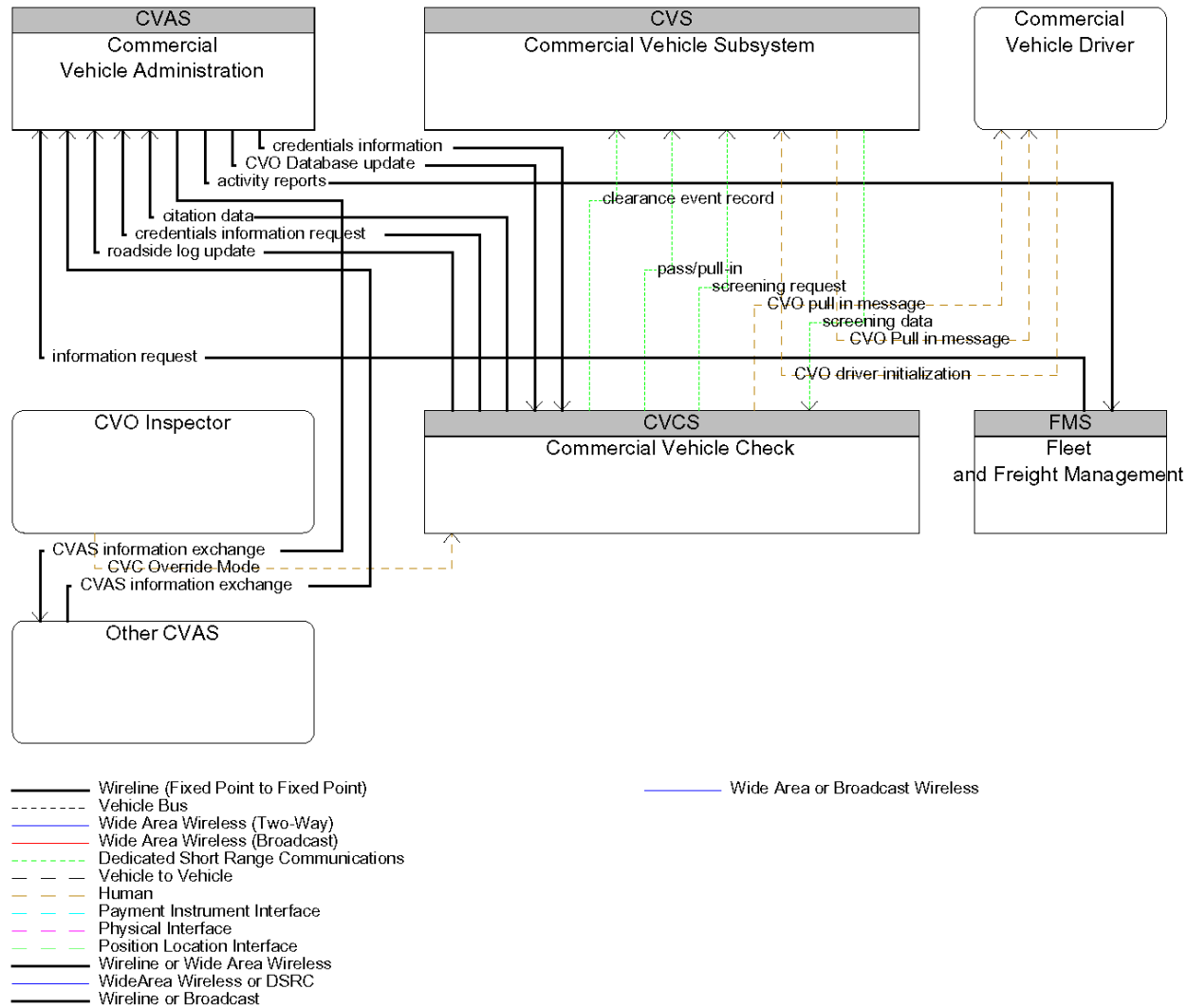
- Wireline (Fixed Point to Fixed Point)
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- Dedicated Short Range Communications
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- Payment Instrument Interface
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CVO01



- Wireline (Fixed Point to Fixed Point)
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- - - Position Location Interface
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- Wireline or Broadcast

CVO02

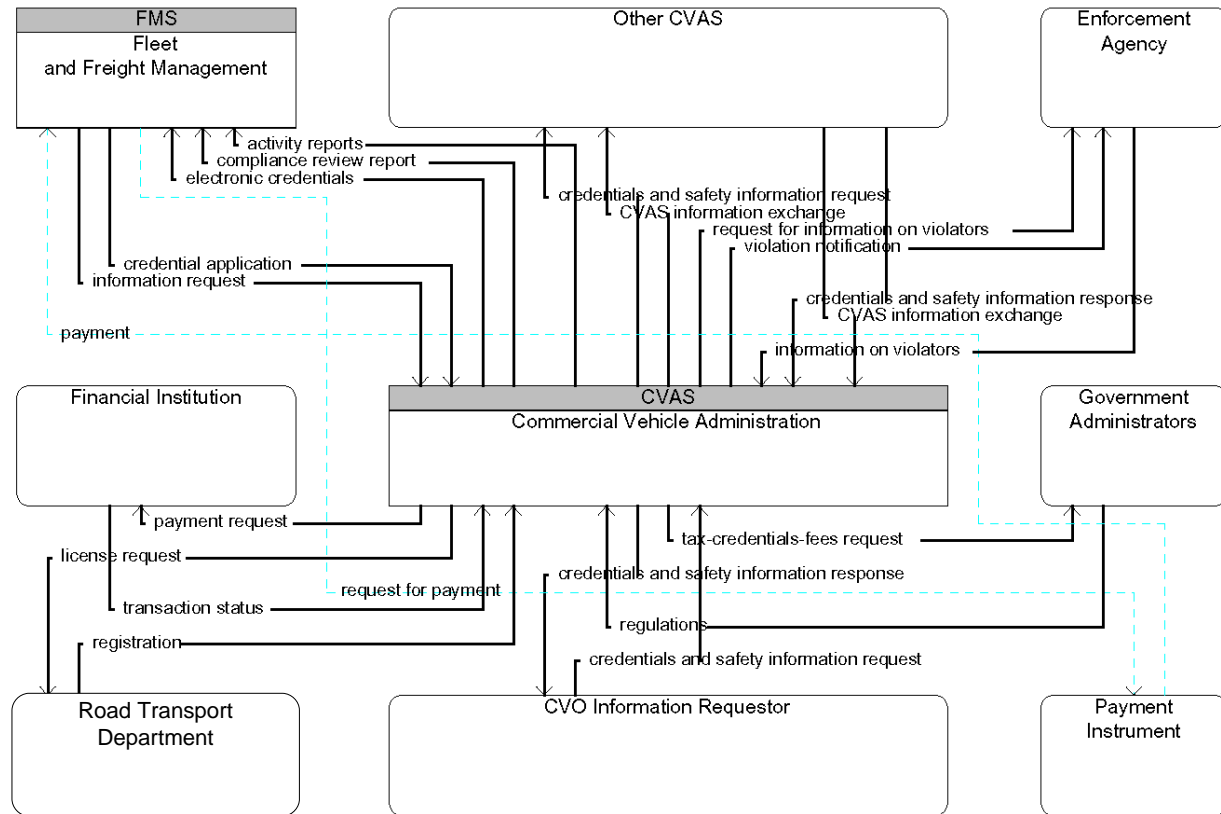


CVO03

Development of ITS System Architecture for Malaysia

Technical Note No. 5

Deployment Packages Framework



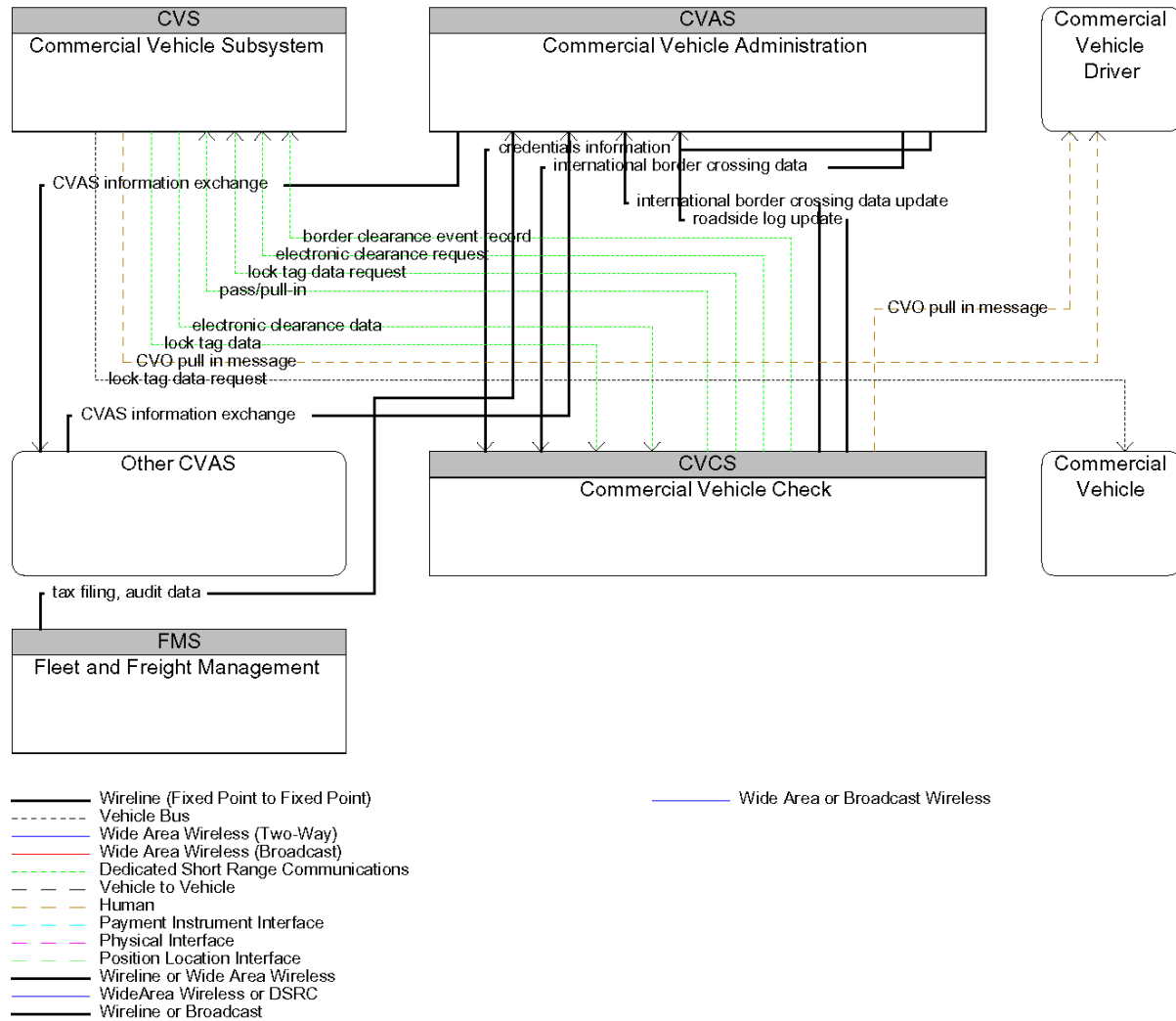
- Wireline (Fixed Point to Fixed Point)
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- Wireline or Broadcast

CVO04

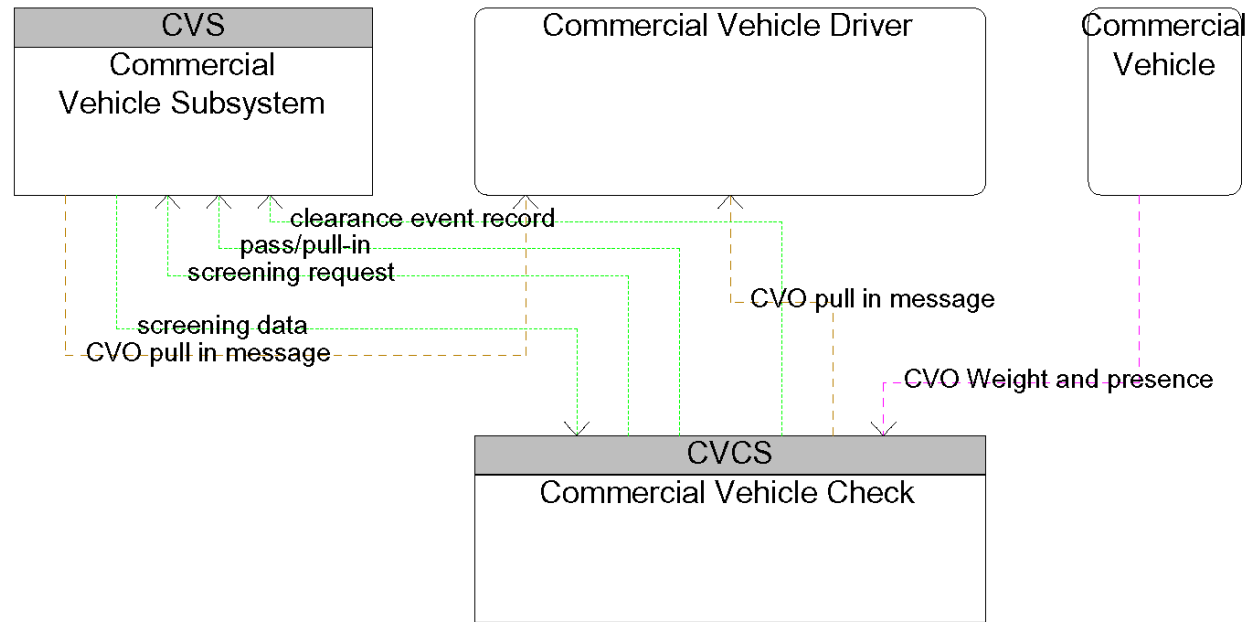
Development of ITS System Architecture for Malaysia

Technical Note No. 5

Deployment Packages Framework

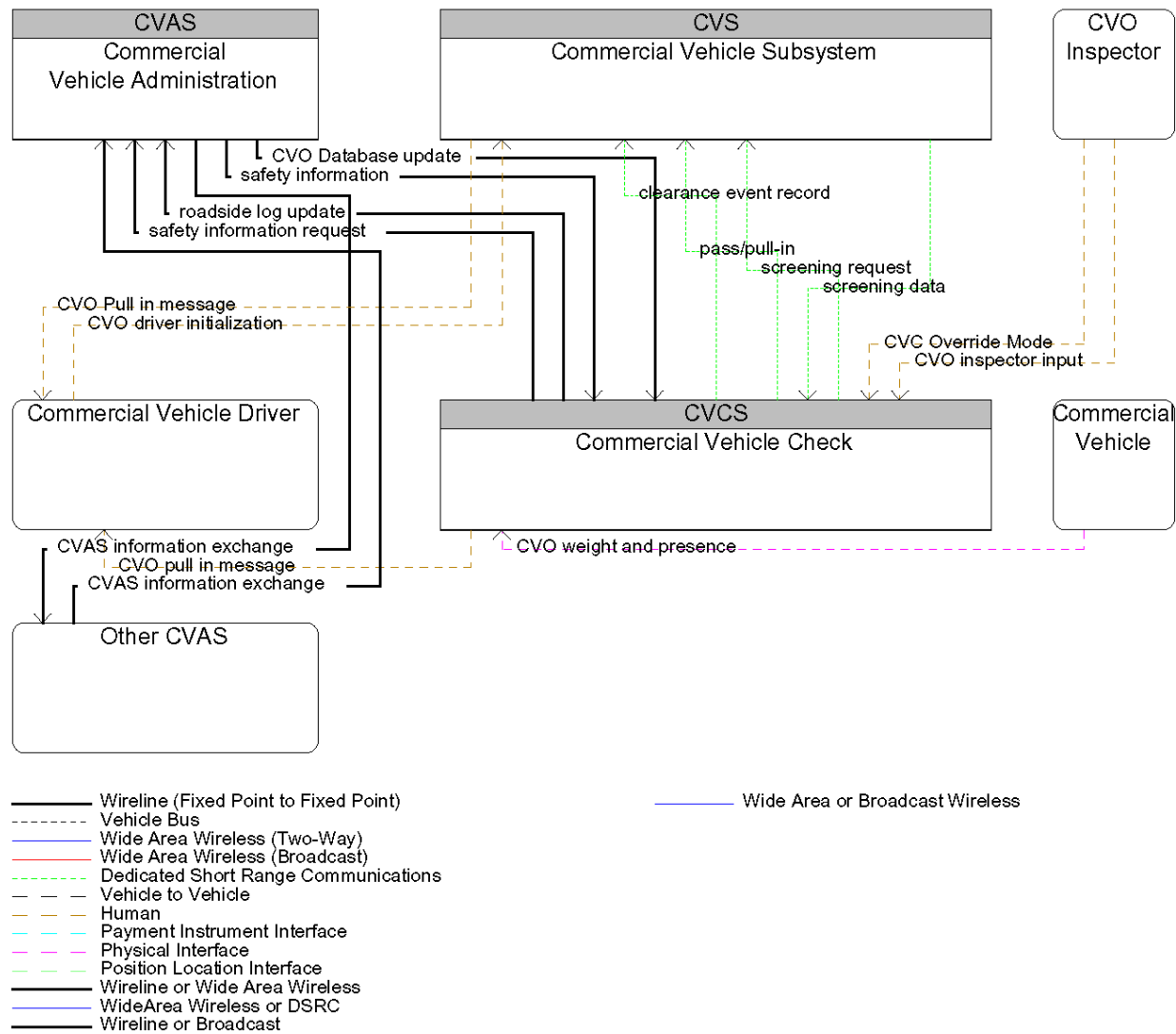


CVO05

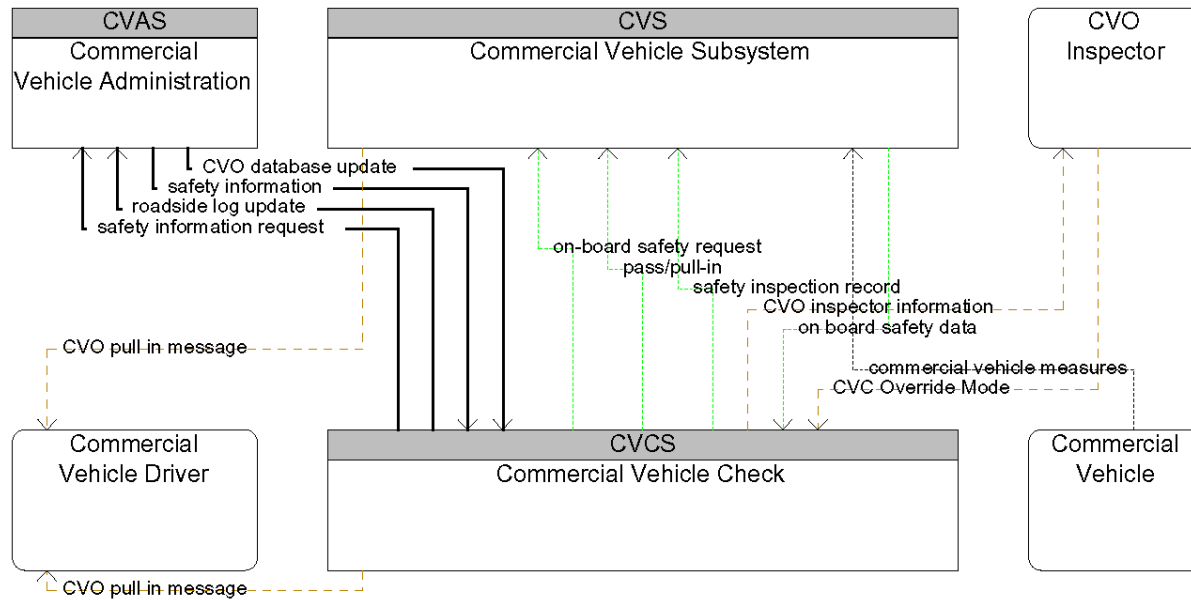


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- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
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CVO06

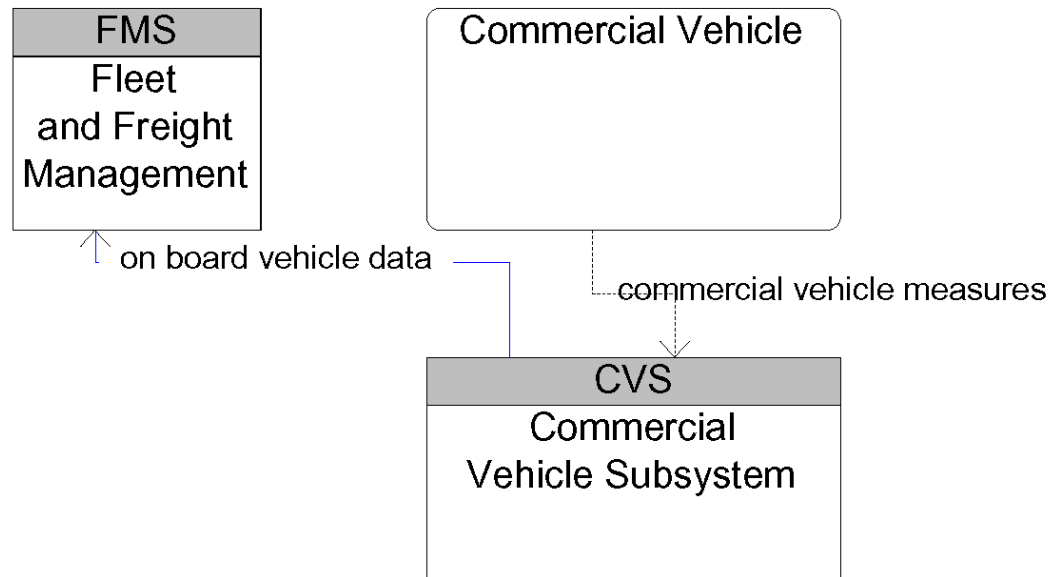


CVO07



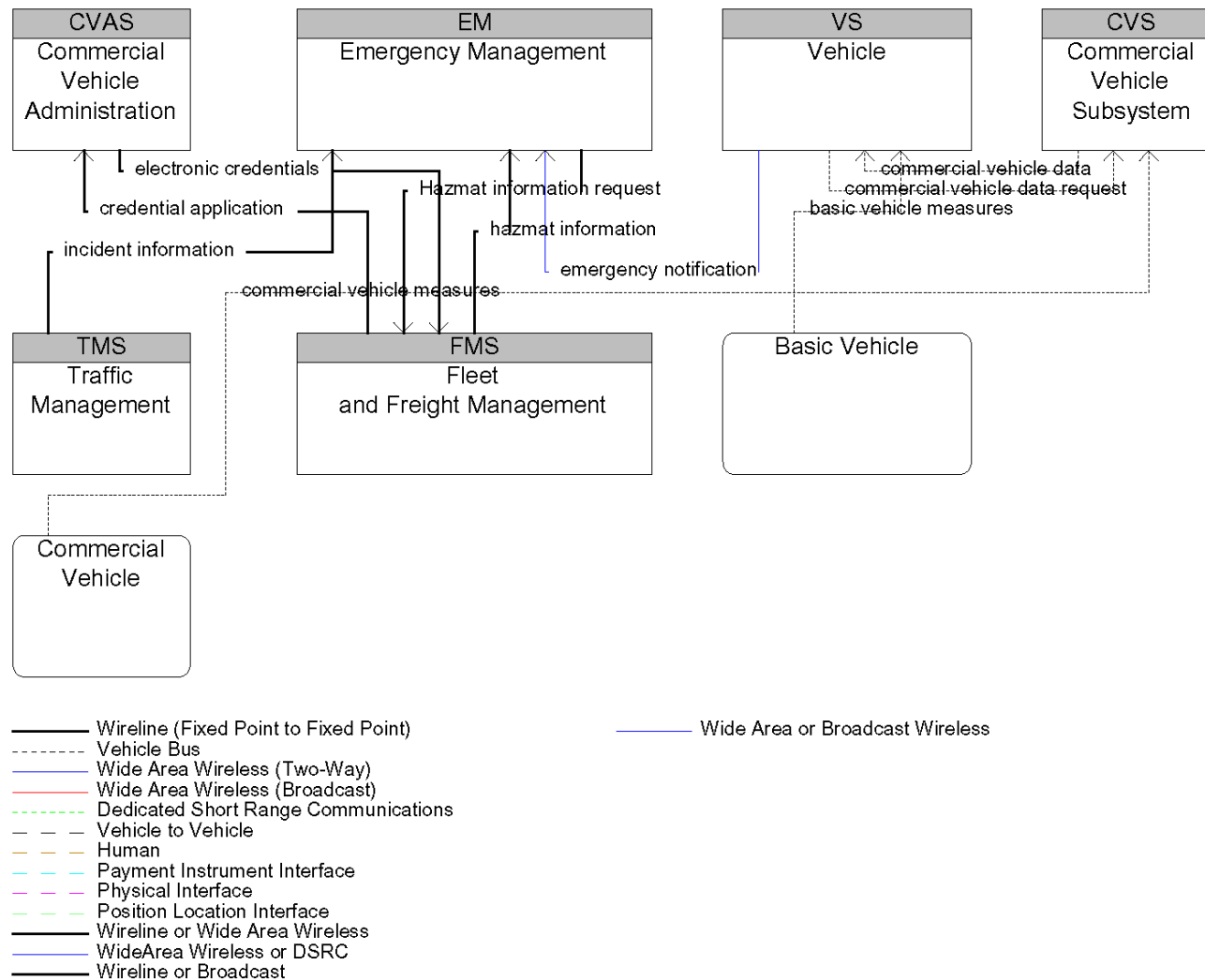
- Wireline (Fixed Point to Fixed Point)
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- Dedicated Short Range Communications
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- - - - Payment Instrument Interface
- - - - Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast
- Wide Area or Broadcast Wireless

CVO08

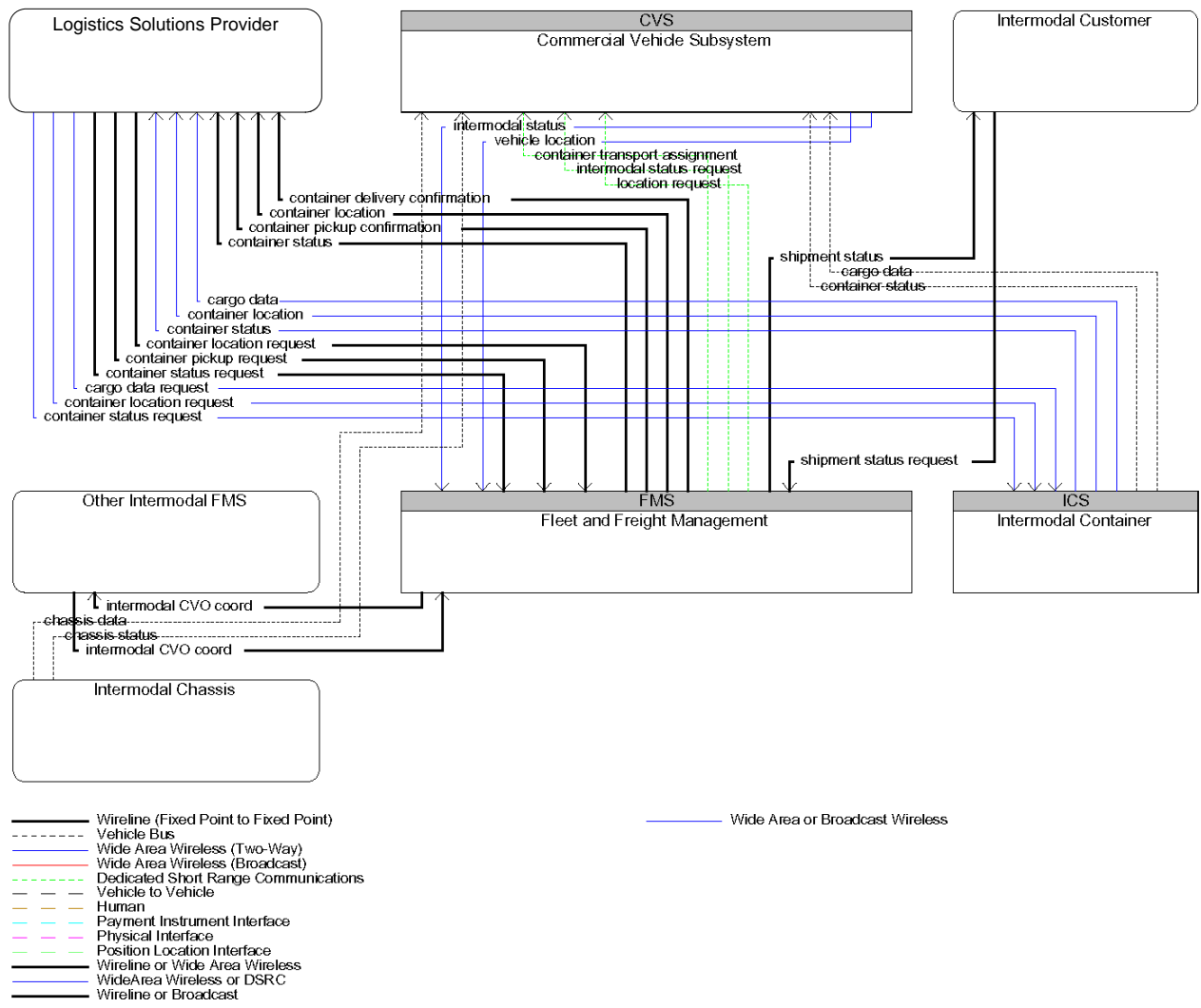


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- Wide Area Wireless (Broadcast)
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- - - Payment Instrument Interface
- - - Physical Interface
- - - Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast

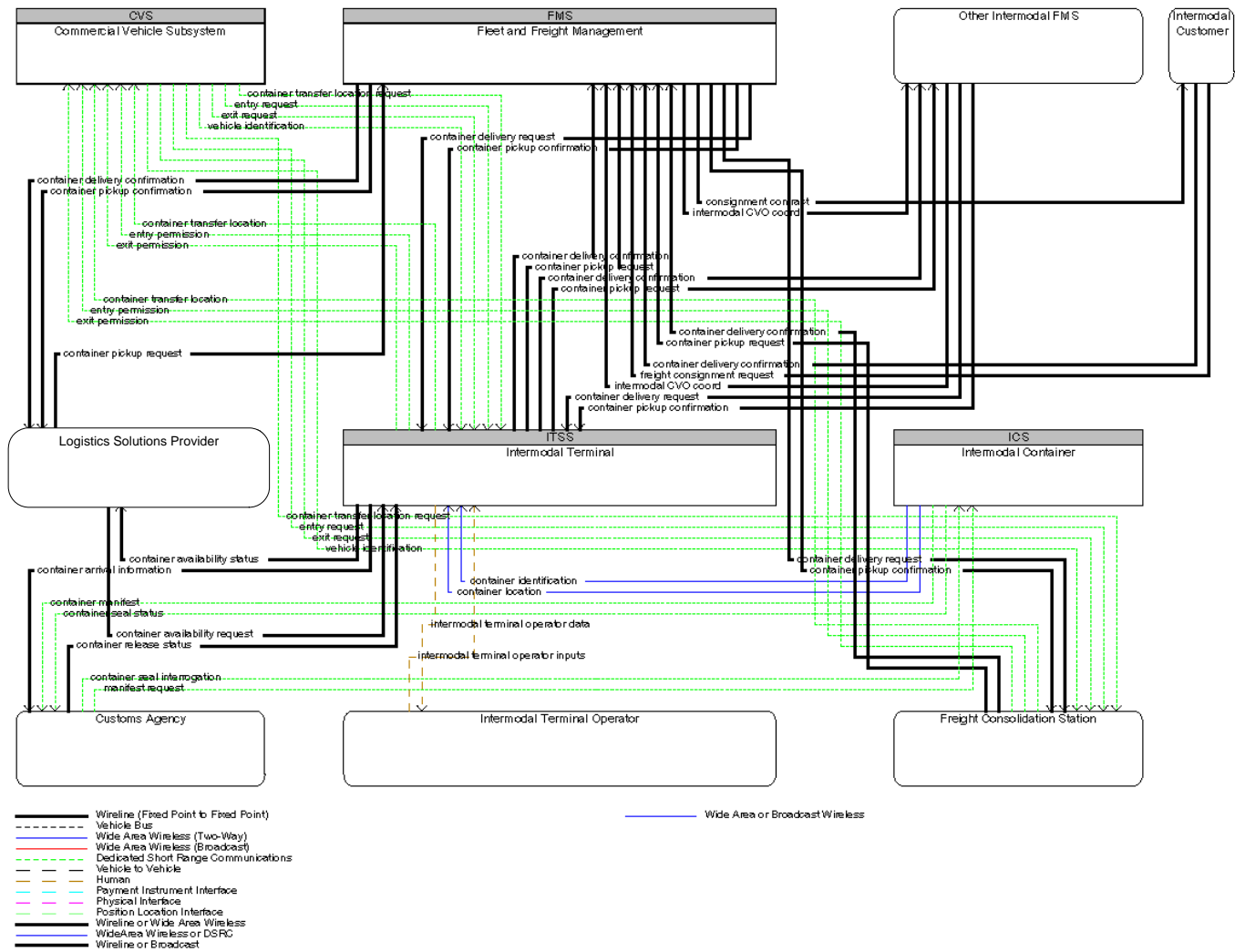
CVO09



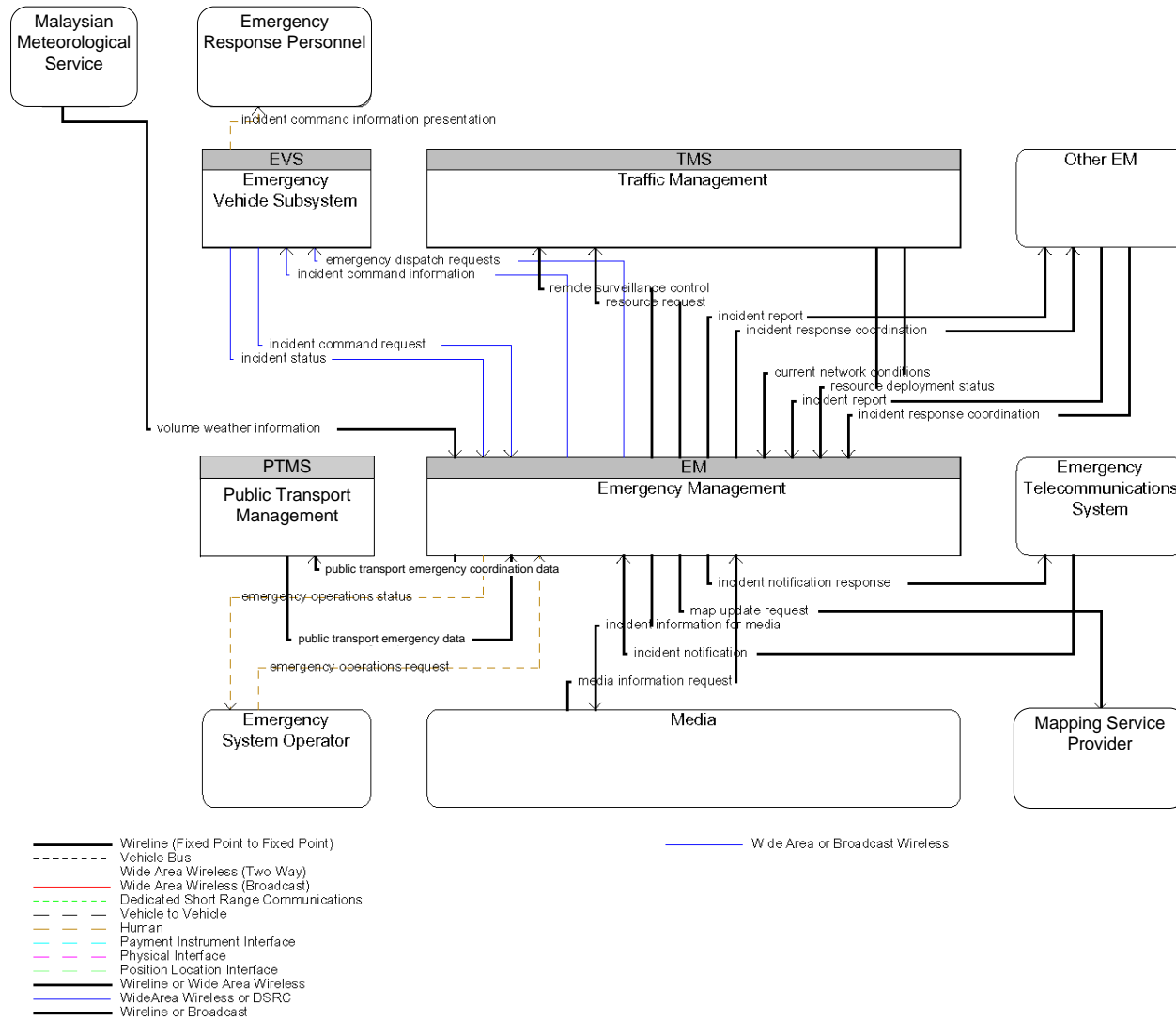
CVO10



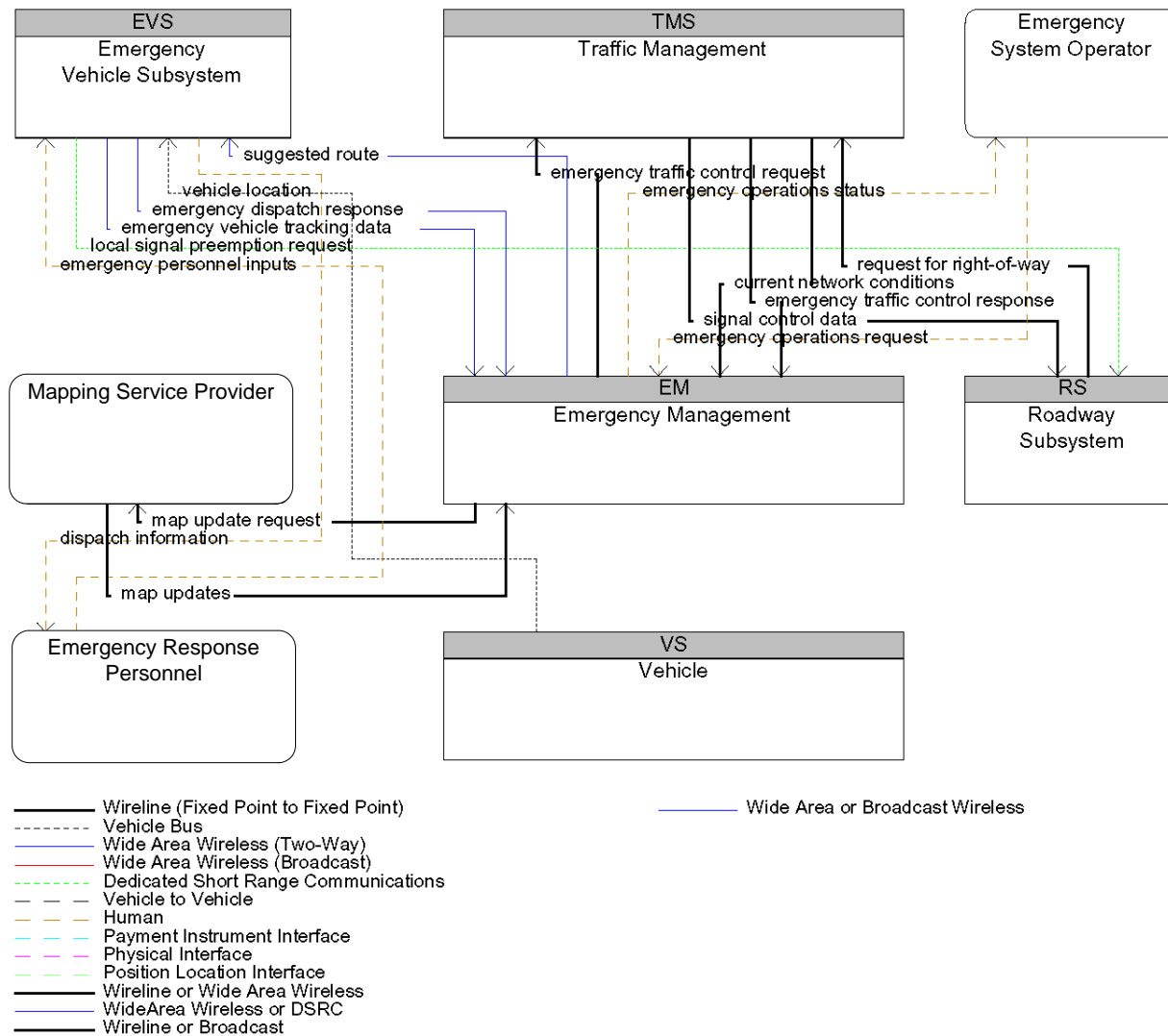
CVO11



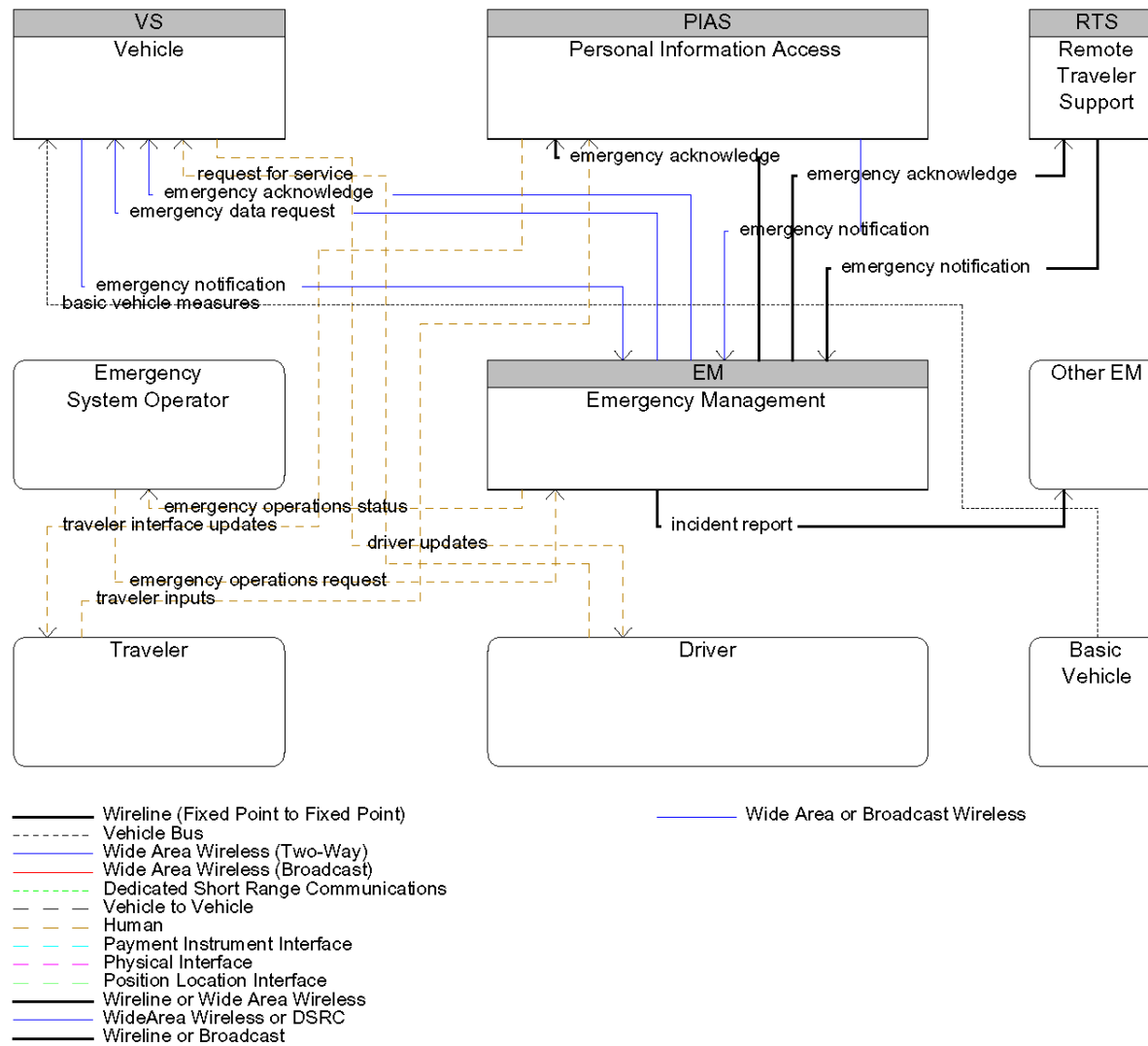
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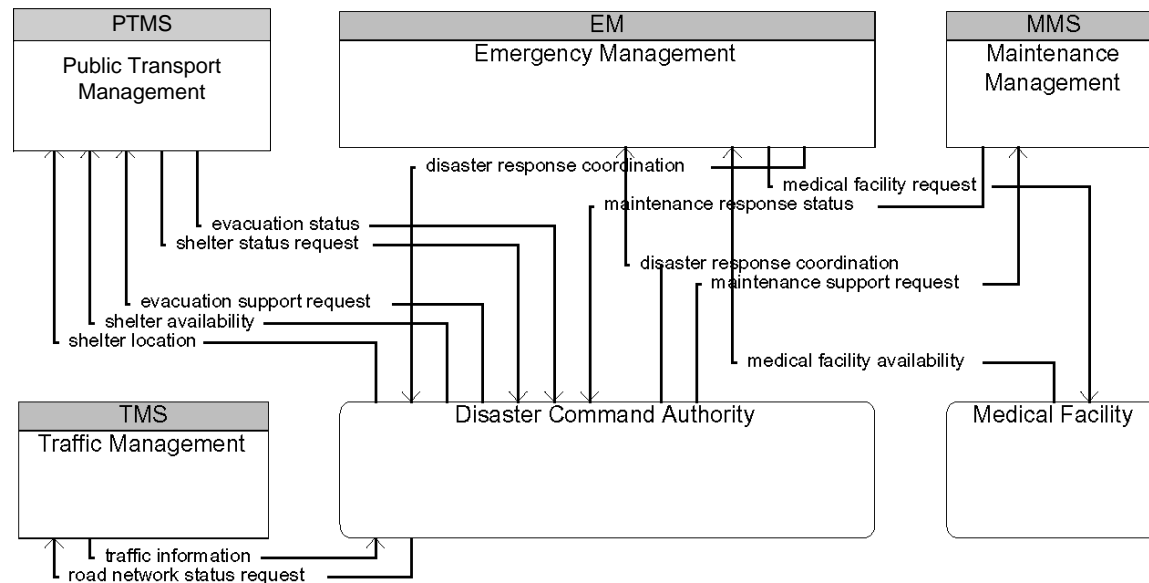
EM1



EM2

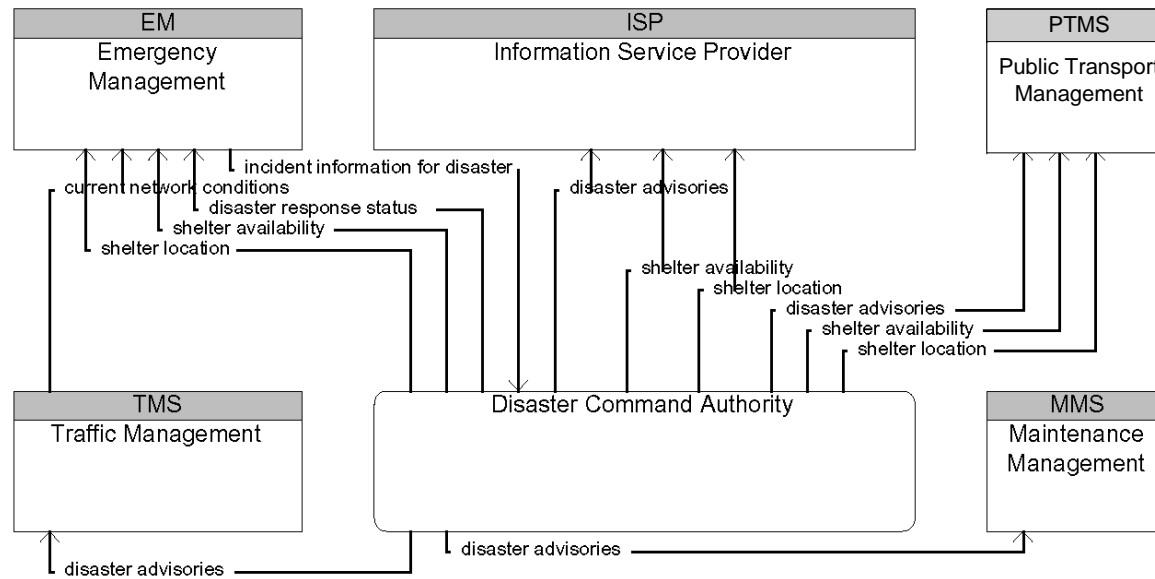


EM3



- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
- Wide Area Wireless (Broadcast)
- Dedicated Short Range Communications
- Vehicle to Vehicle
- Human
- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- WideArea Wireless or DSRC
- Wireline or Broadcast
- Wide Area or Broadcast Wireless

EM4



- Wireline (Fixed Point to Fixed Point)
- Vehicle Bus
- Wide Area Wireless (Two-Way)
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- Dedicated Short Range Communications
- - - - Vehicle to Vehicle
- Human
- Payment Instrument Interface
- Physical Interface
- Position Location Interface
- Wireline or Wide Area Wireless
- Wide Area Wireless or DSRC
- Wireline or Broadcast

EM5