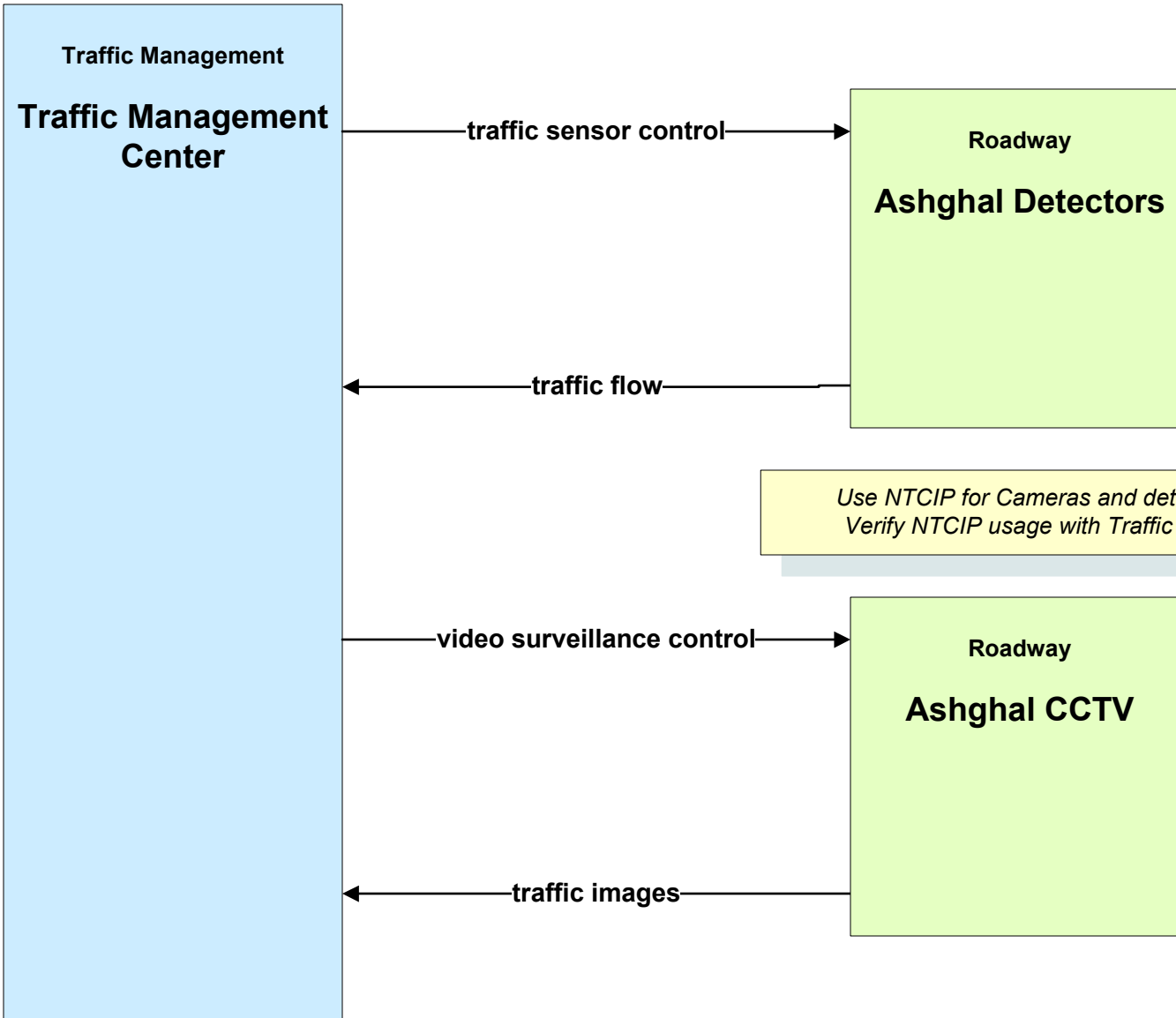


State of Qatar ITS Architecture

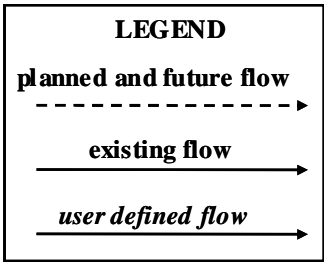
Customized Service Package Diagrams

**Advanced Traffic Management Systems
(ATMS)**

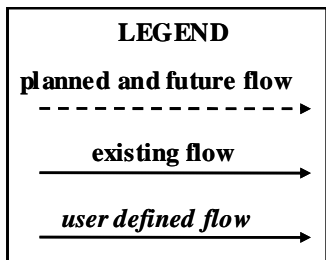
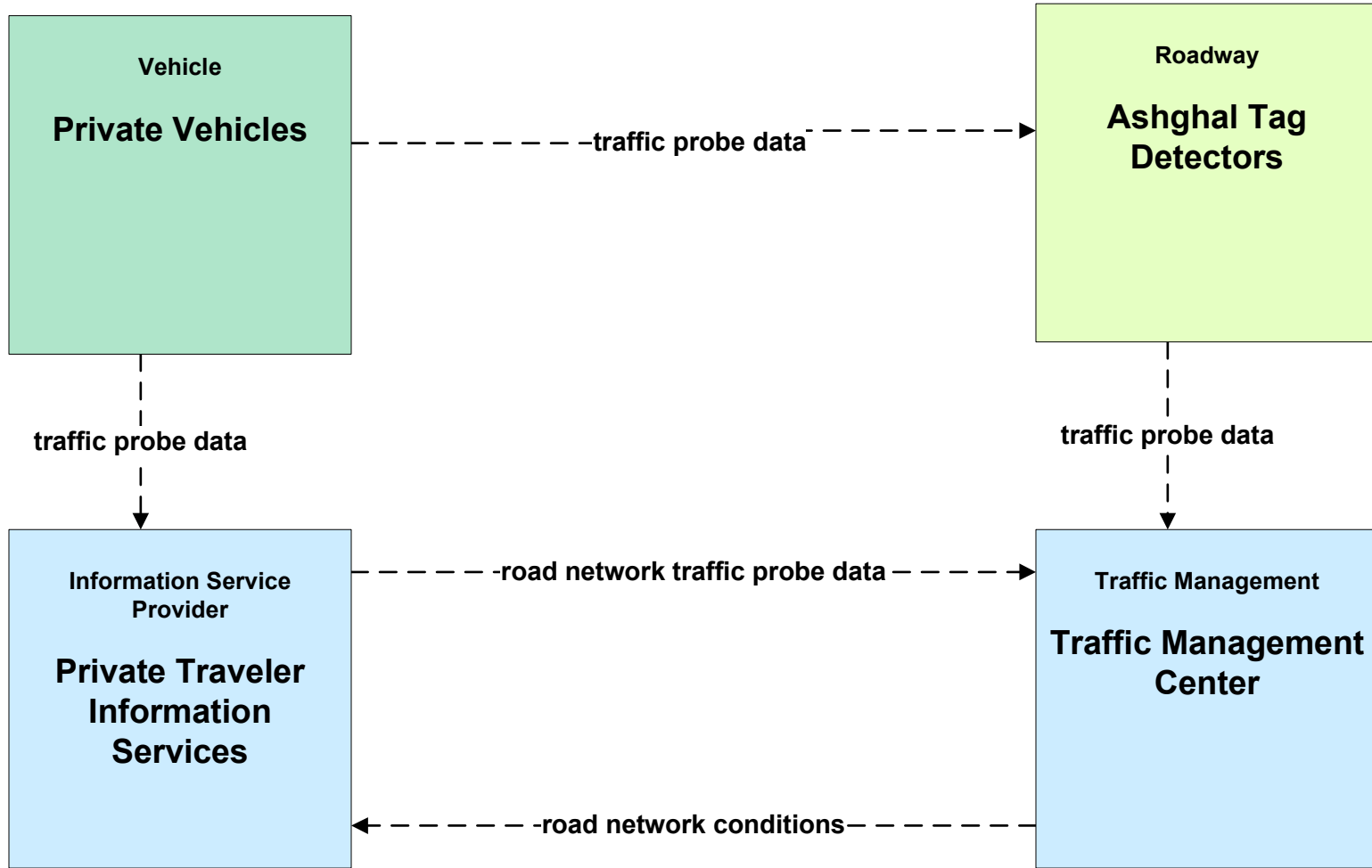
ATMS01 - Network Surveillance



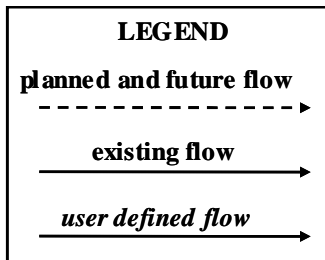
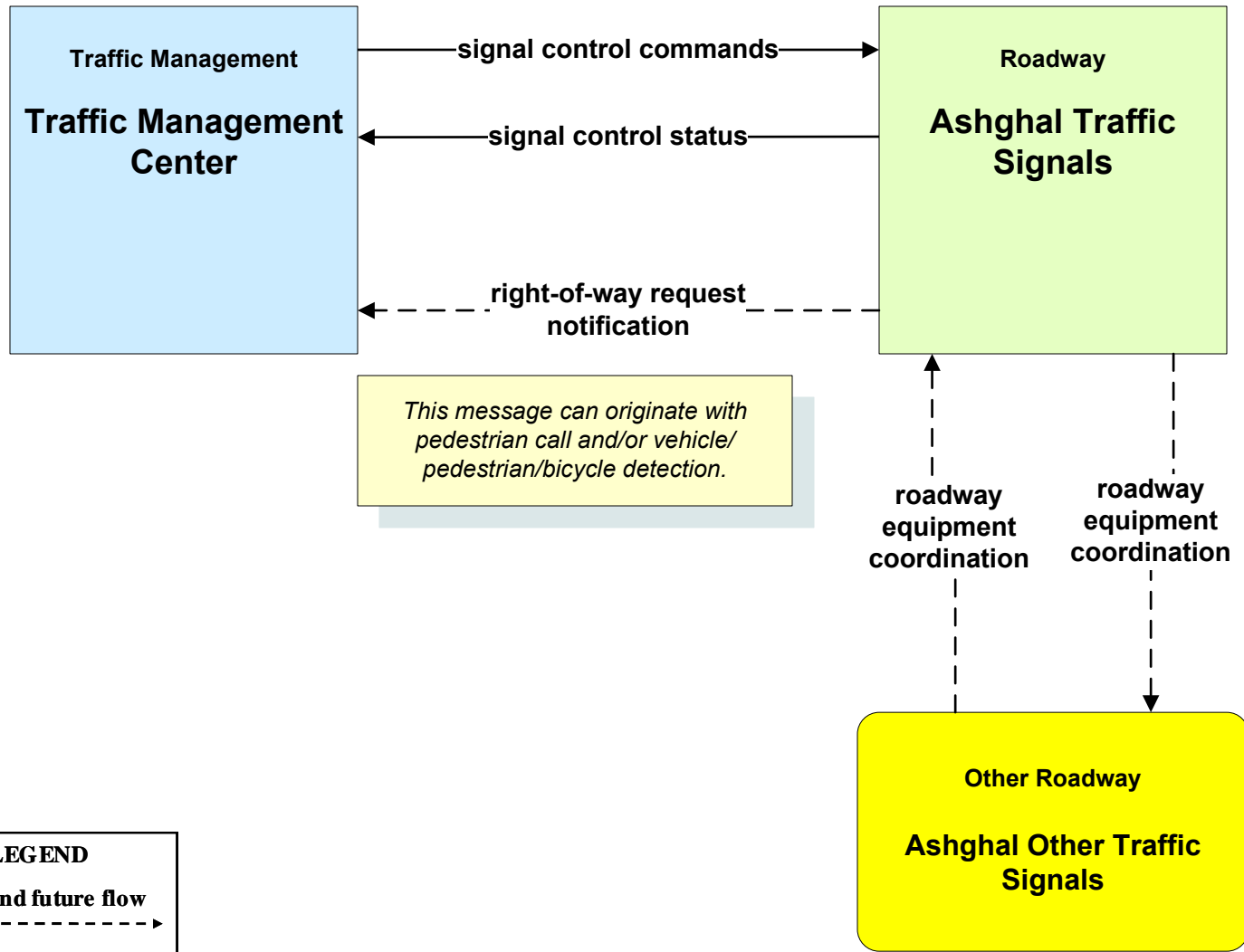
*Use NTCIP for Cameras and detectors.
Verify NTCIP usage with Traffic Tech.*



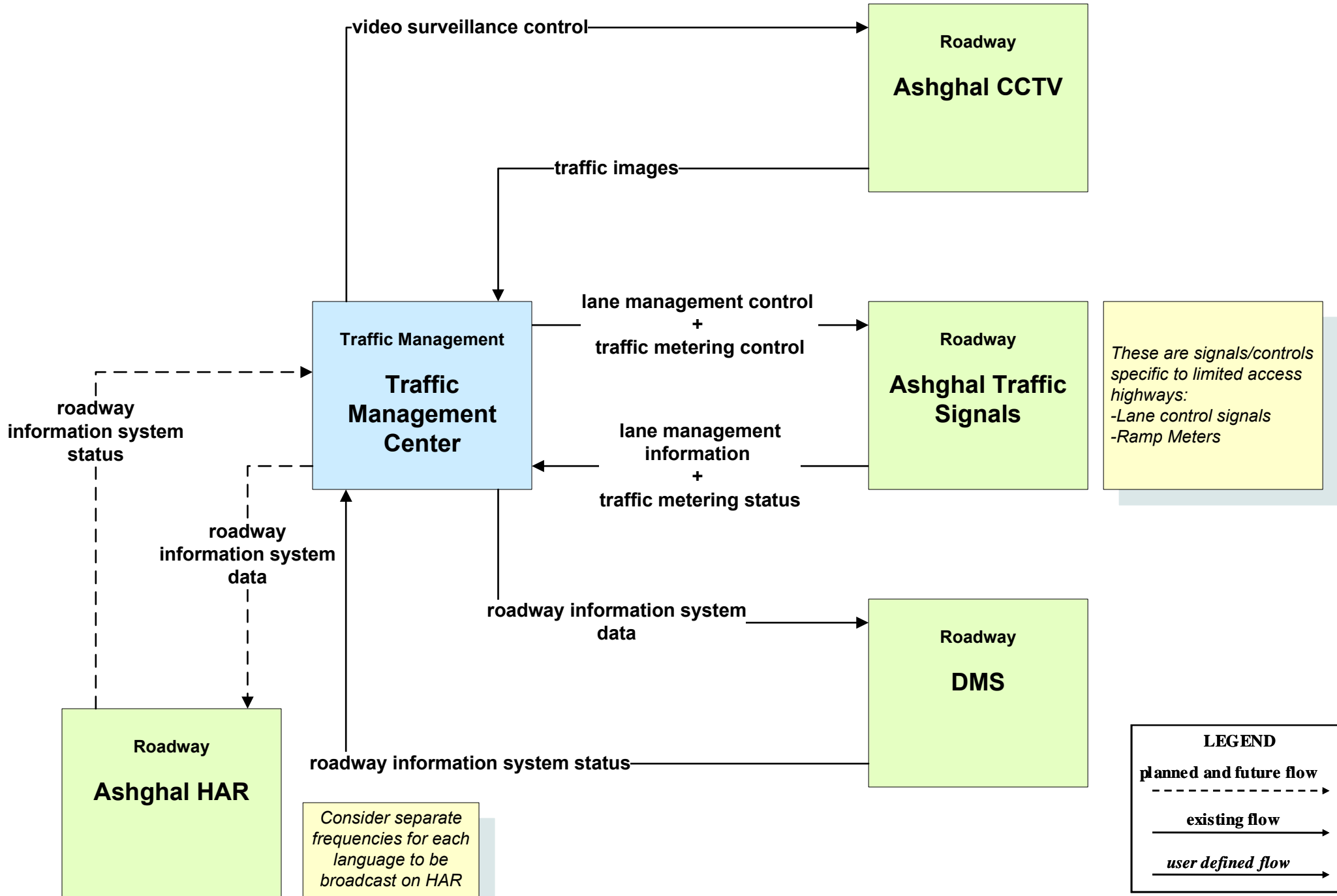
ATMS02 - Probe Surveillance



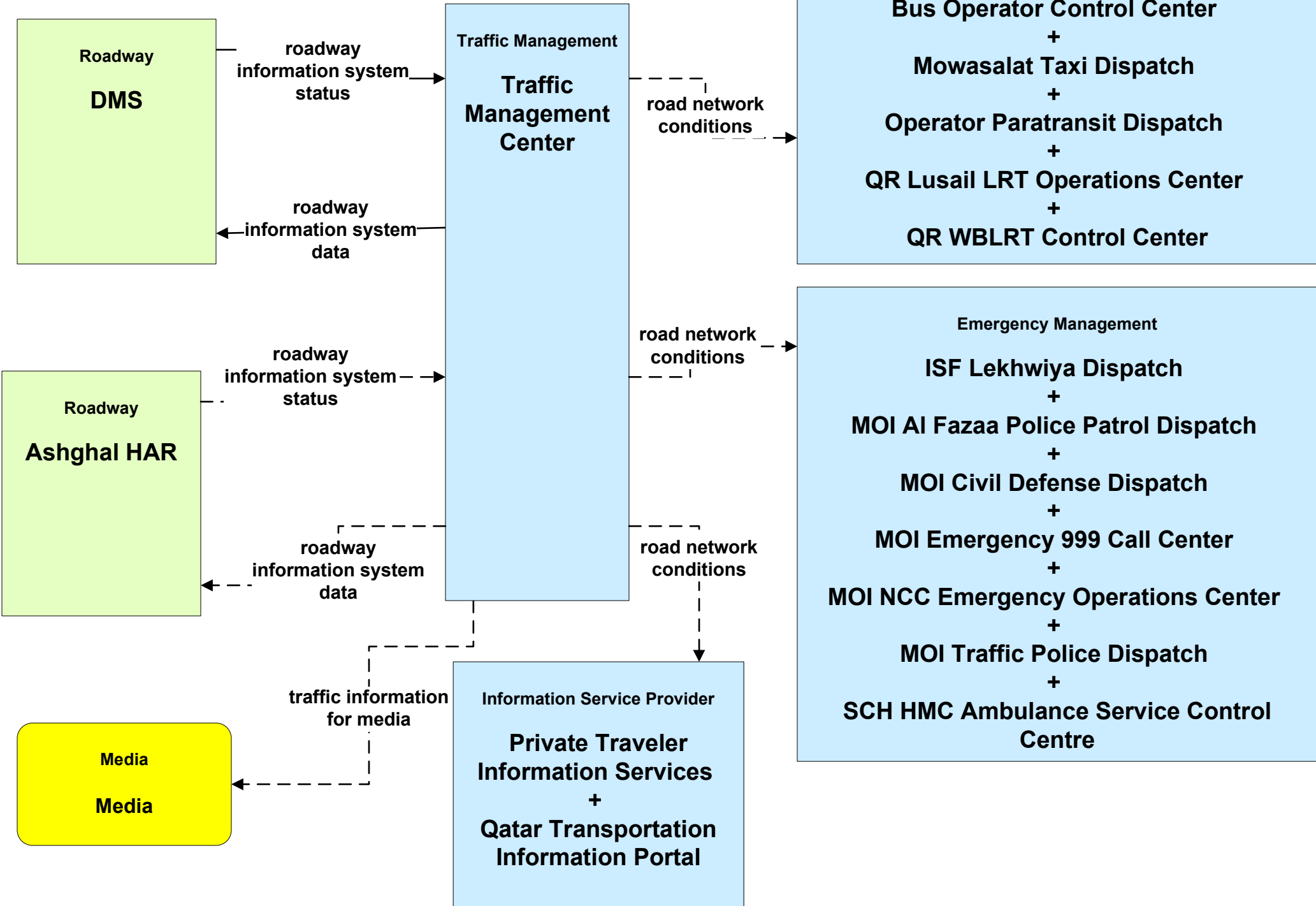
ATMS03 - Surface Street Control



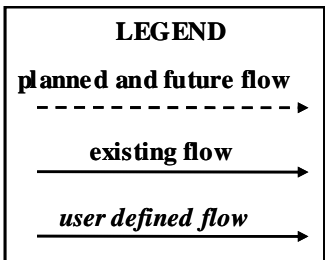
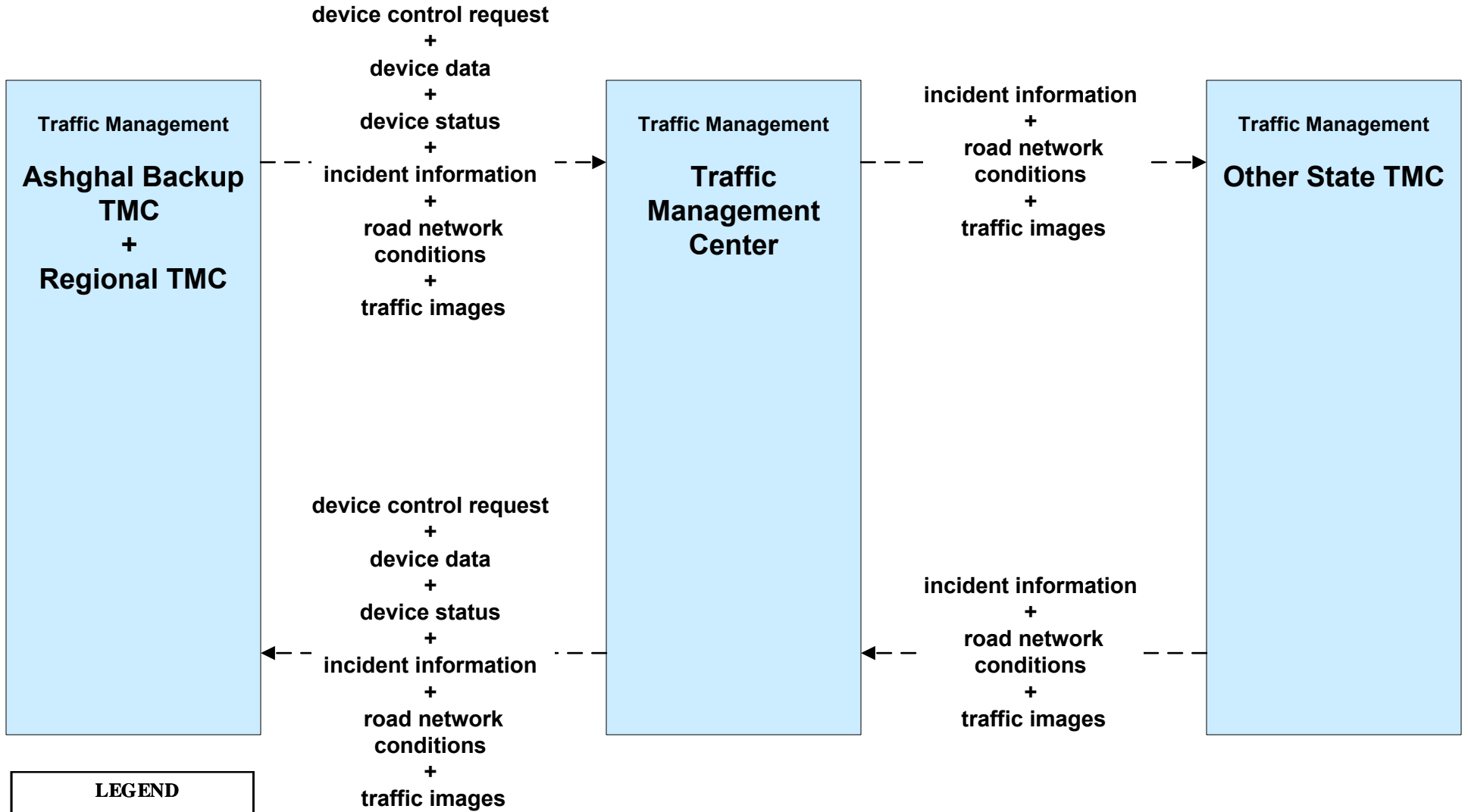
ATMS04 – Traffic Metering Qatar Expressway Management Systems



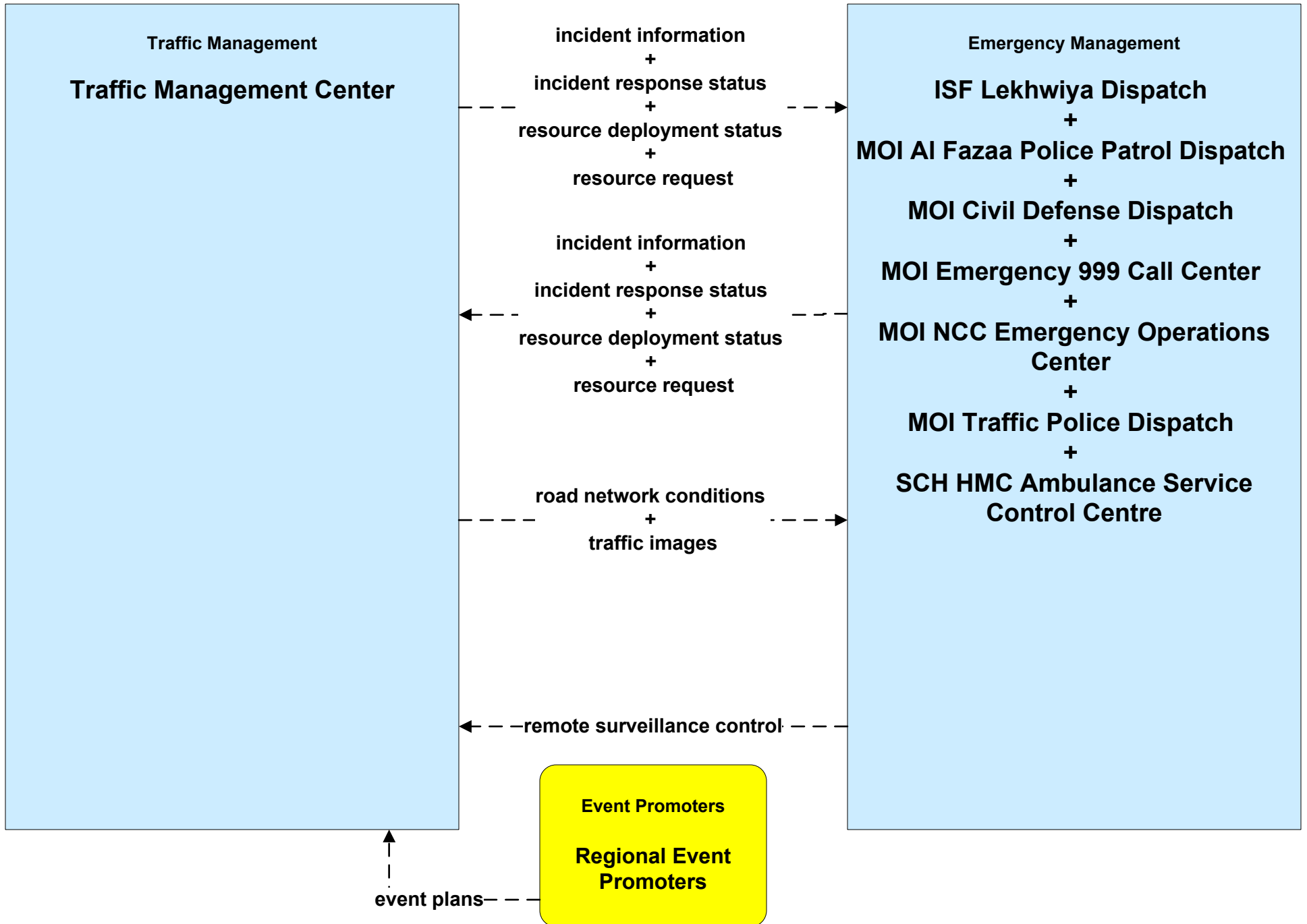
ATMS06 - Traffic Information Dissemination



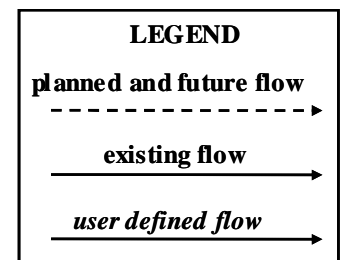
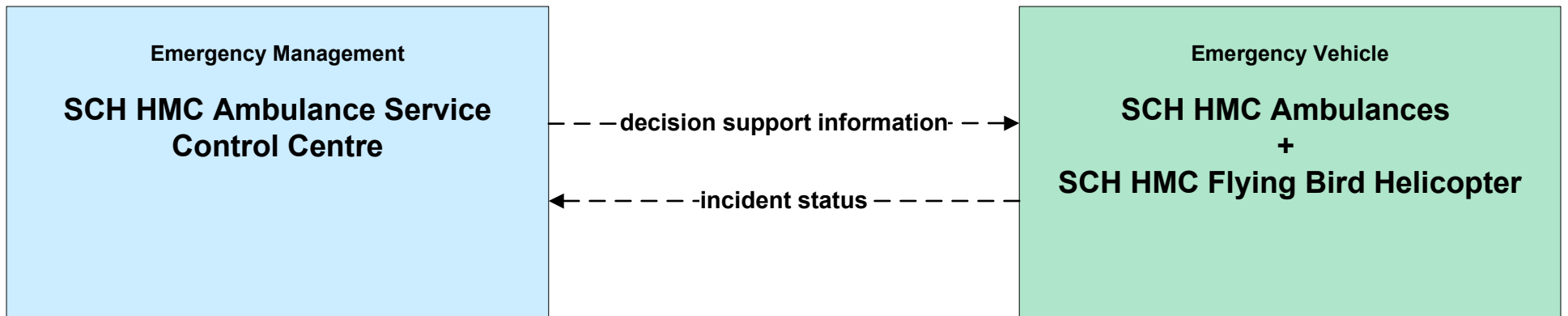
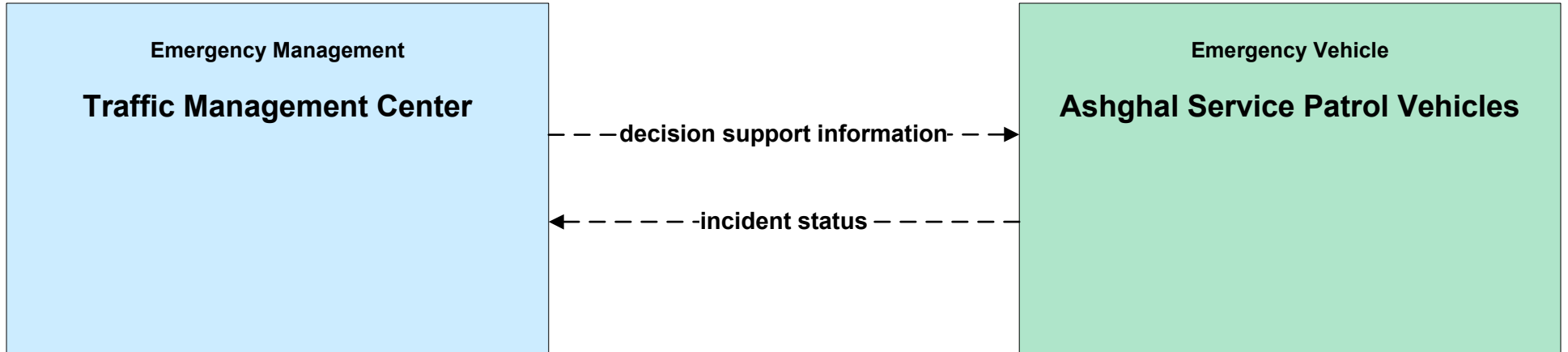
ATMS07 - Regional Traffic Control



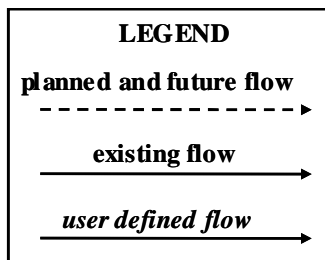
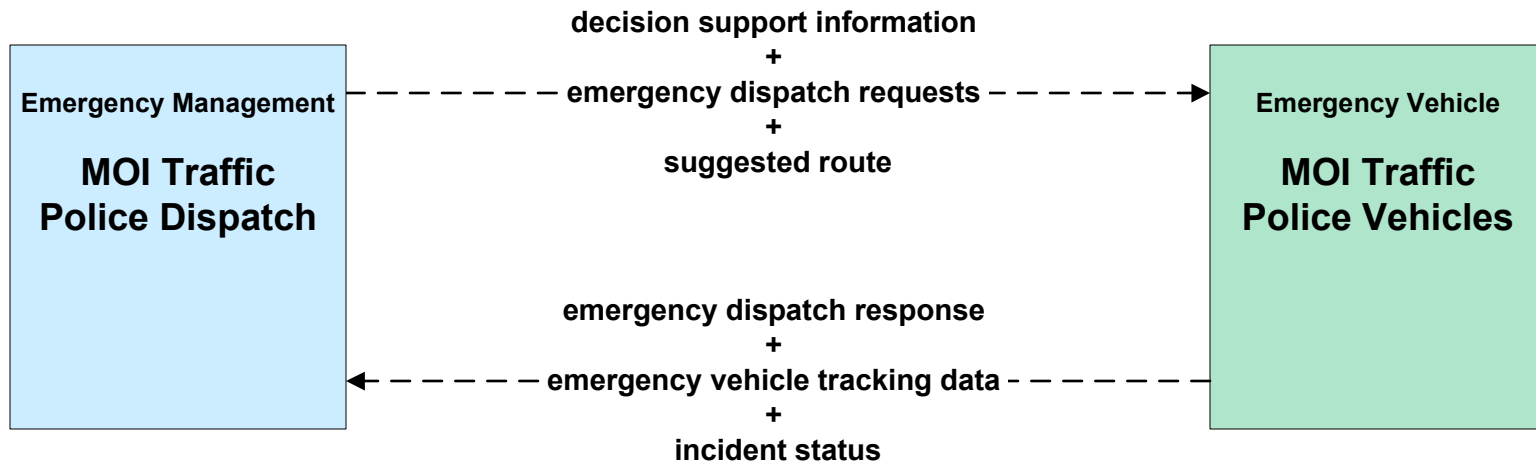
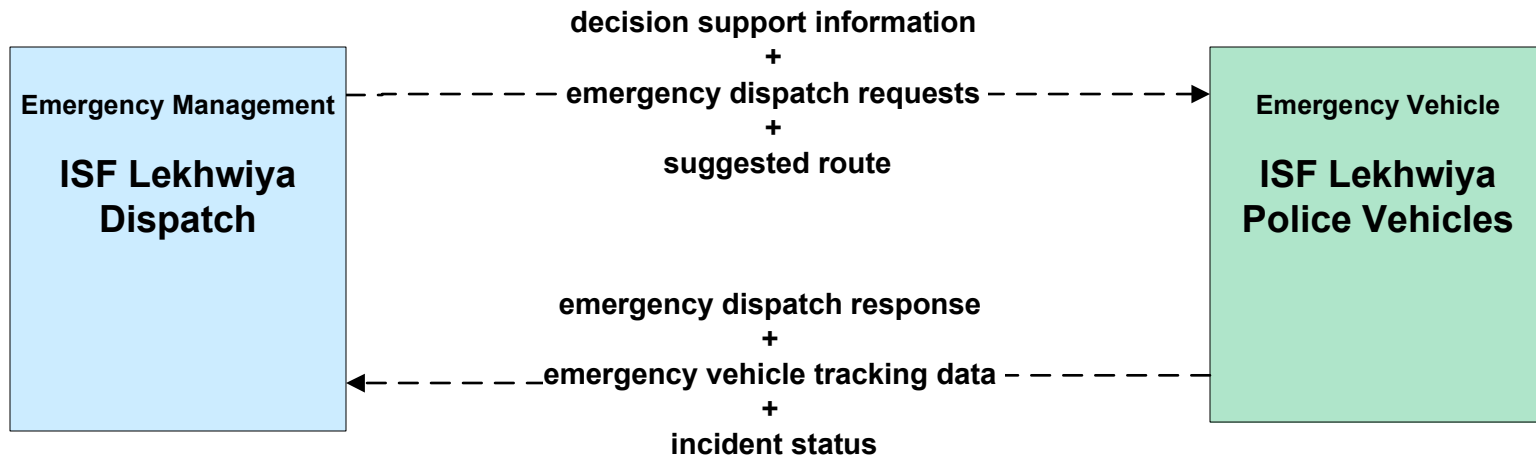
ATMS08 - Incident Management
TMC and Emergency Management Agencies and Event Promoters



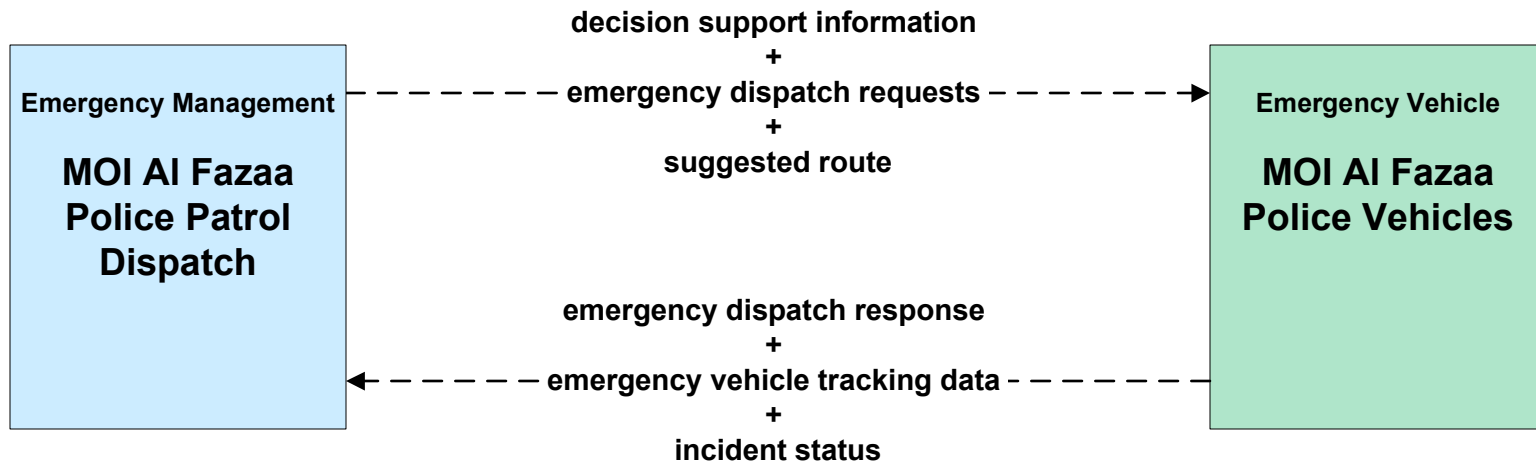
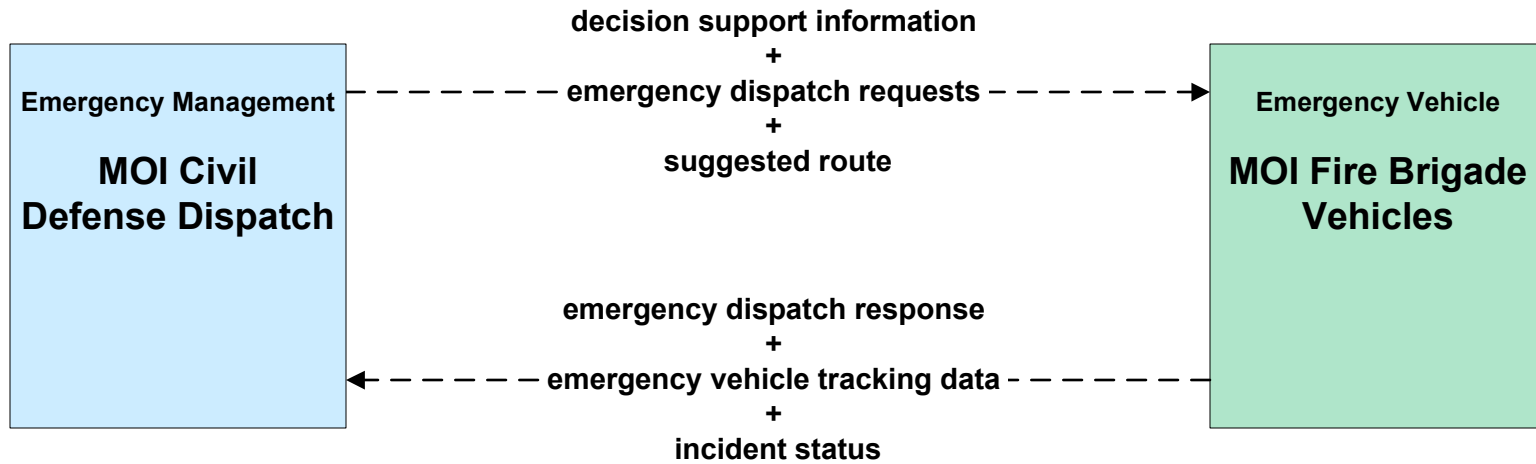
ATMS08 - Incident Management
Emergency Management Agencies and their Emergency Vehicles



ATMS08 - Incident Management Emergency Vehicle Dispatch

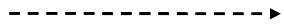


ATMS08 - Incident Management Emergency Vehicle Dispatch



LEGEND

planned and future flow



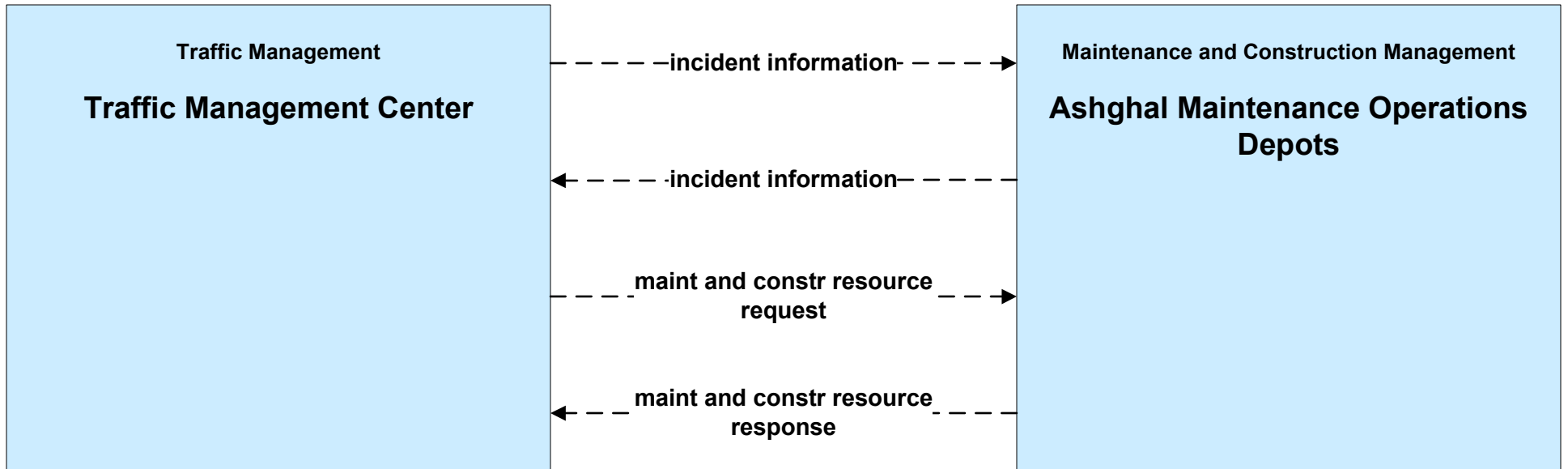
existing flow



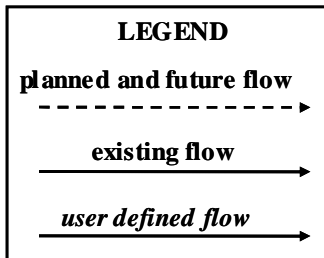
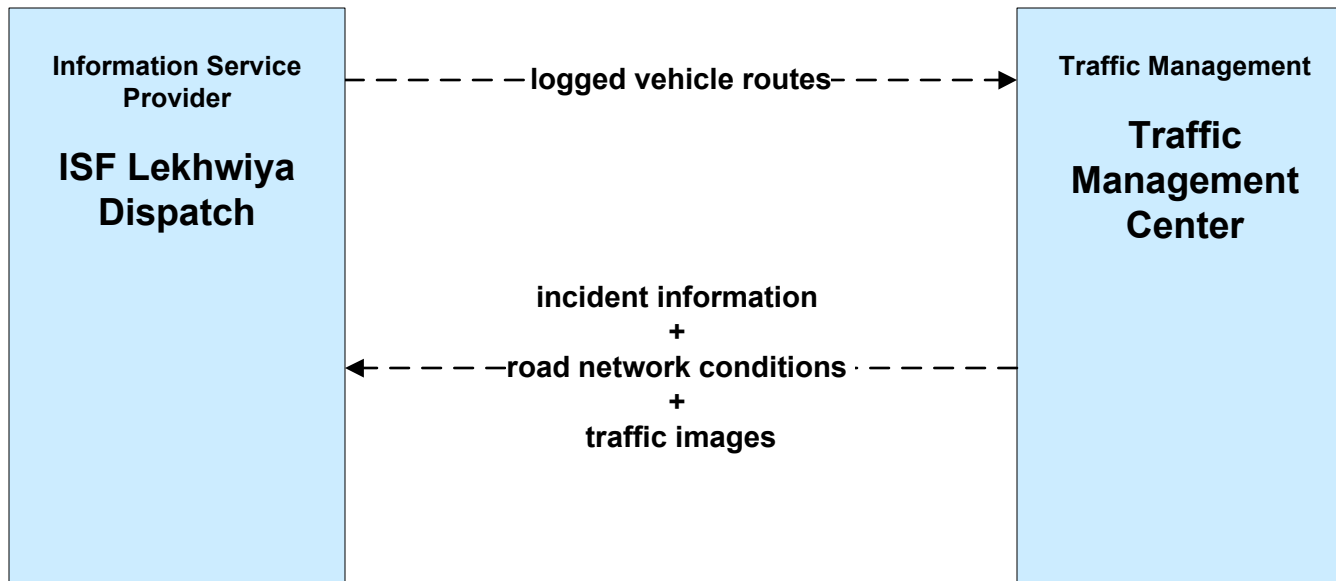
user defined flow



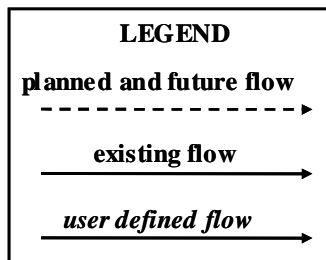
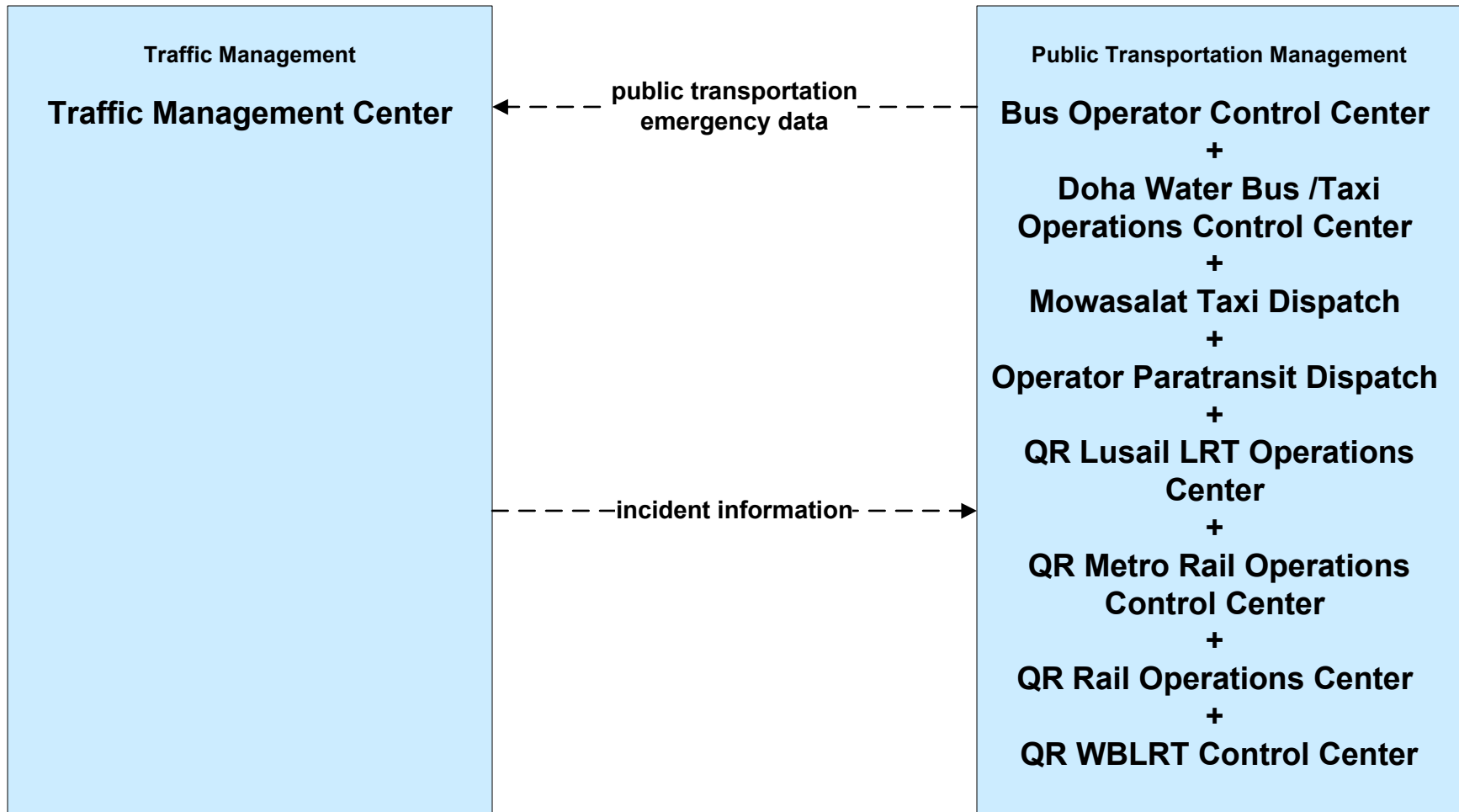
**ATMS08 - Incident Management
TMC to Maintenance Interface**



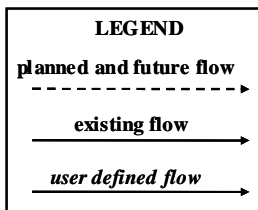
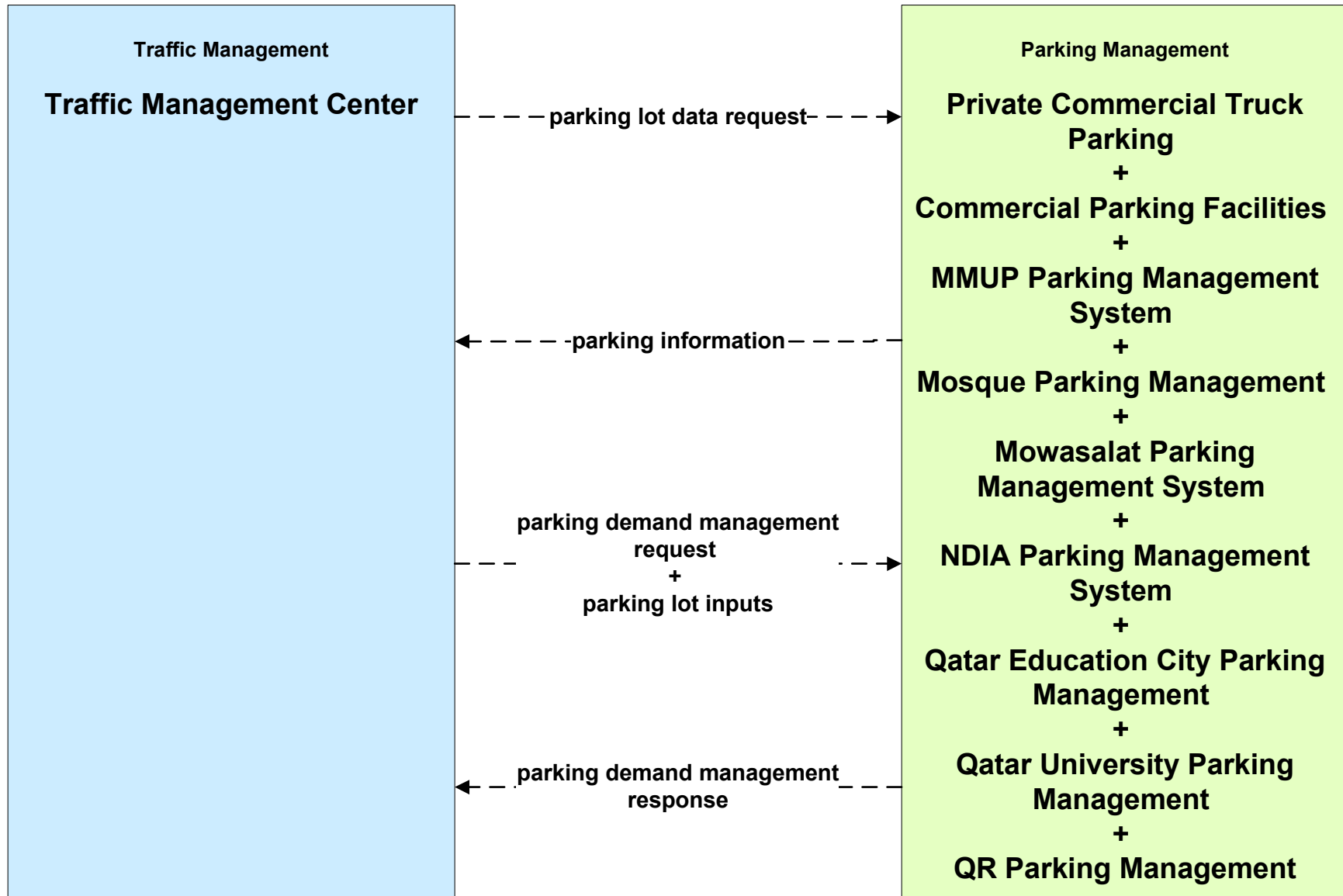
ATMS08 - Incident Management VVIP Motorcade Operations



ATMS08 - Incident Management Public Transportation Operations

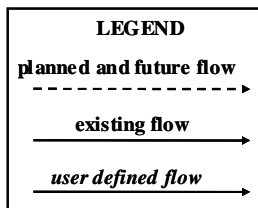
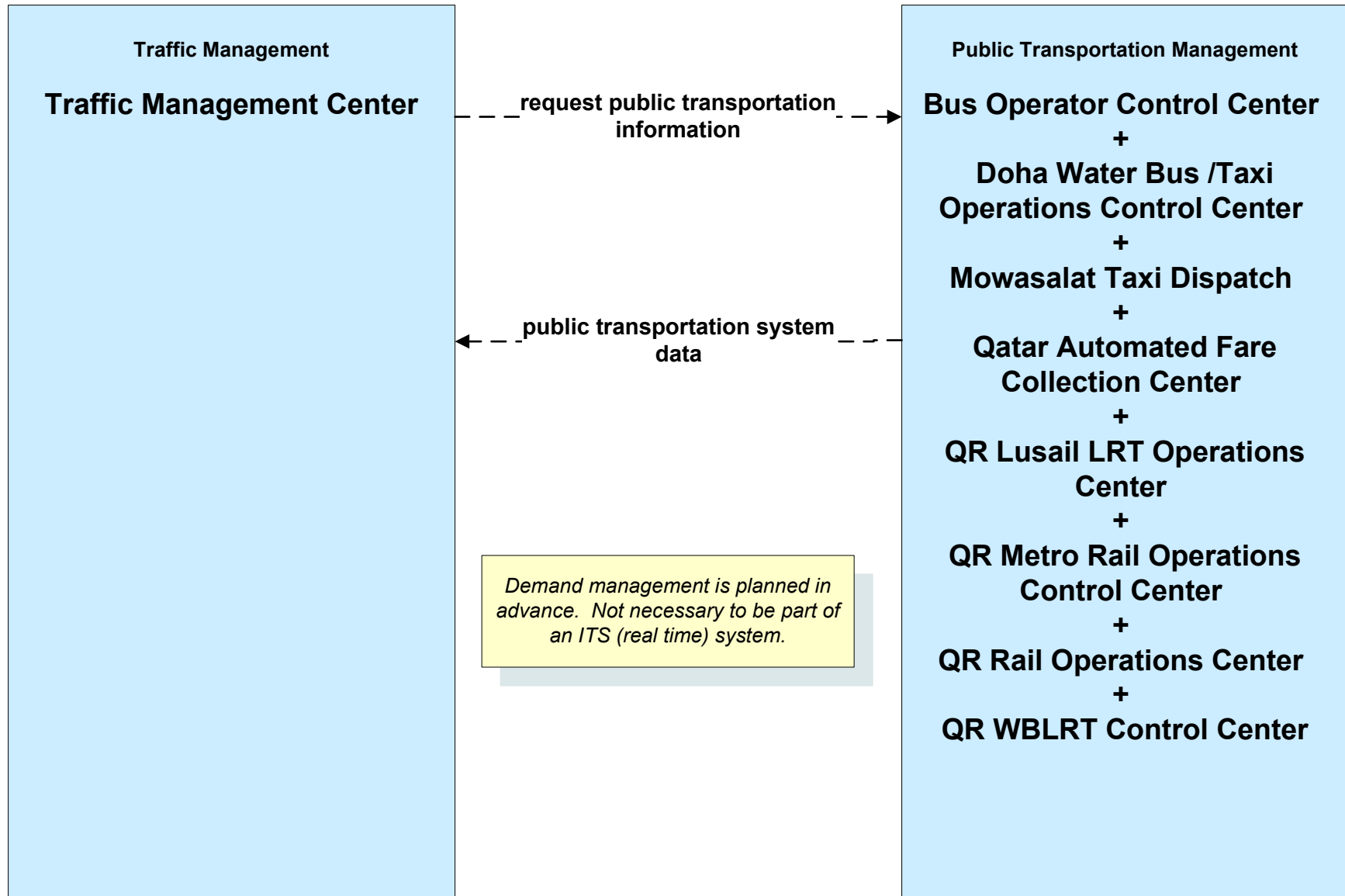


ATMS09 - Traffic Forecast and Demand Management Parking Management Systems for Special Events



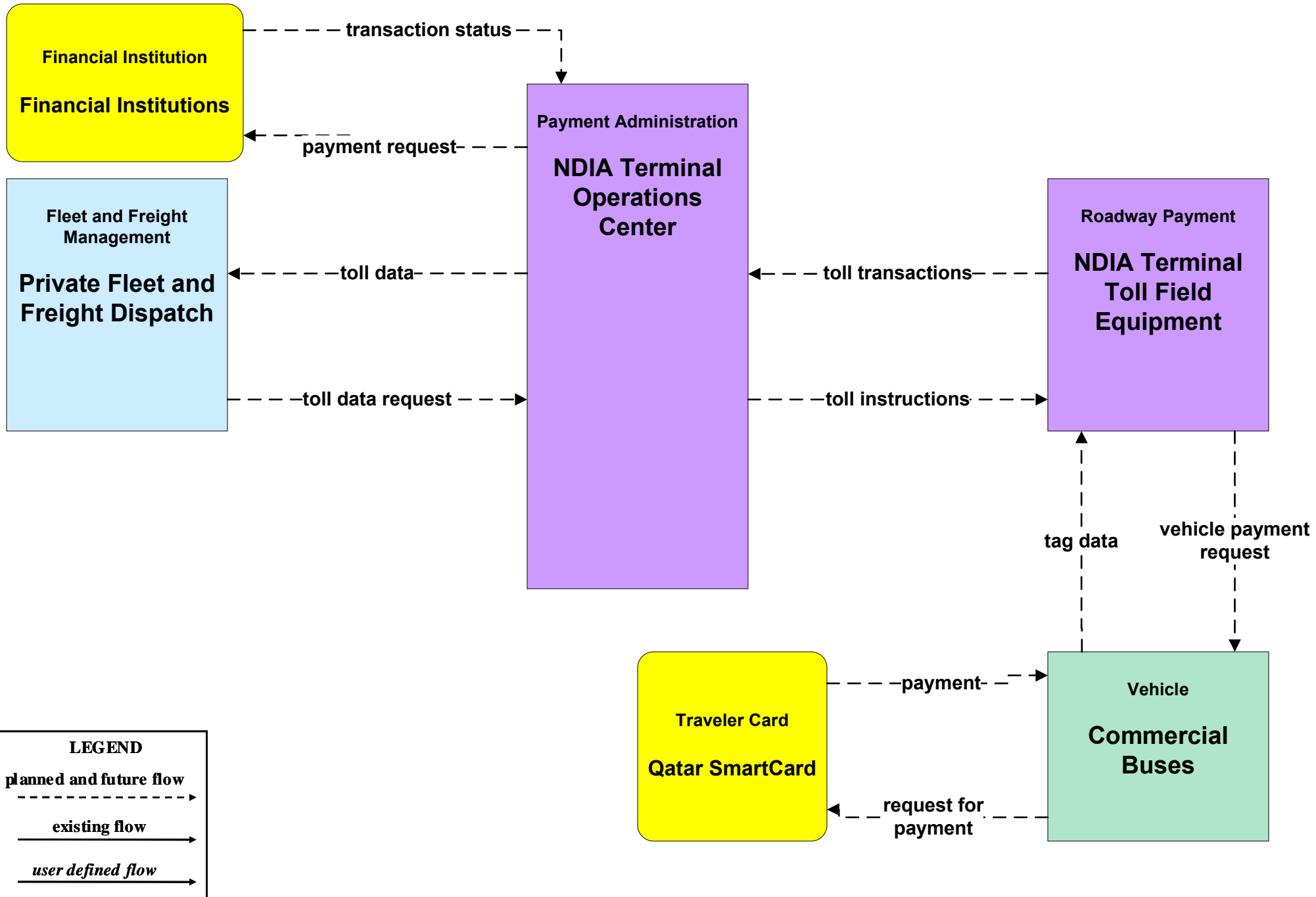
Will Ashghal include: Lusail Parking or Ashghal (TBD?) Park and Ride parking?

ATMS09 - Traffic Forecast and Demand Management Public Transportation Management Systems for Special Events



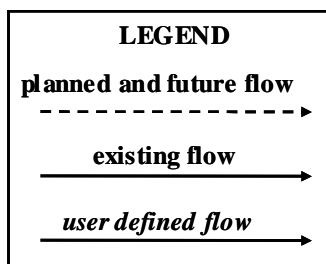
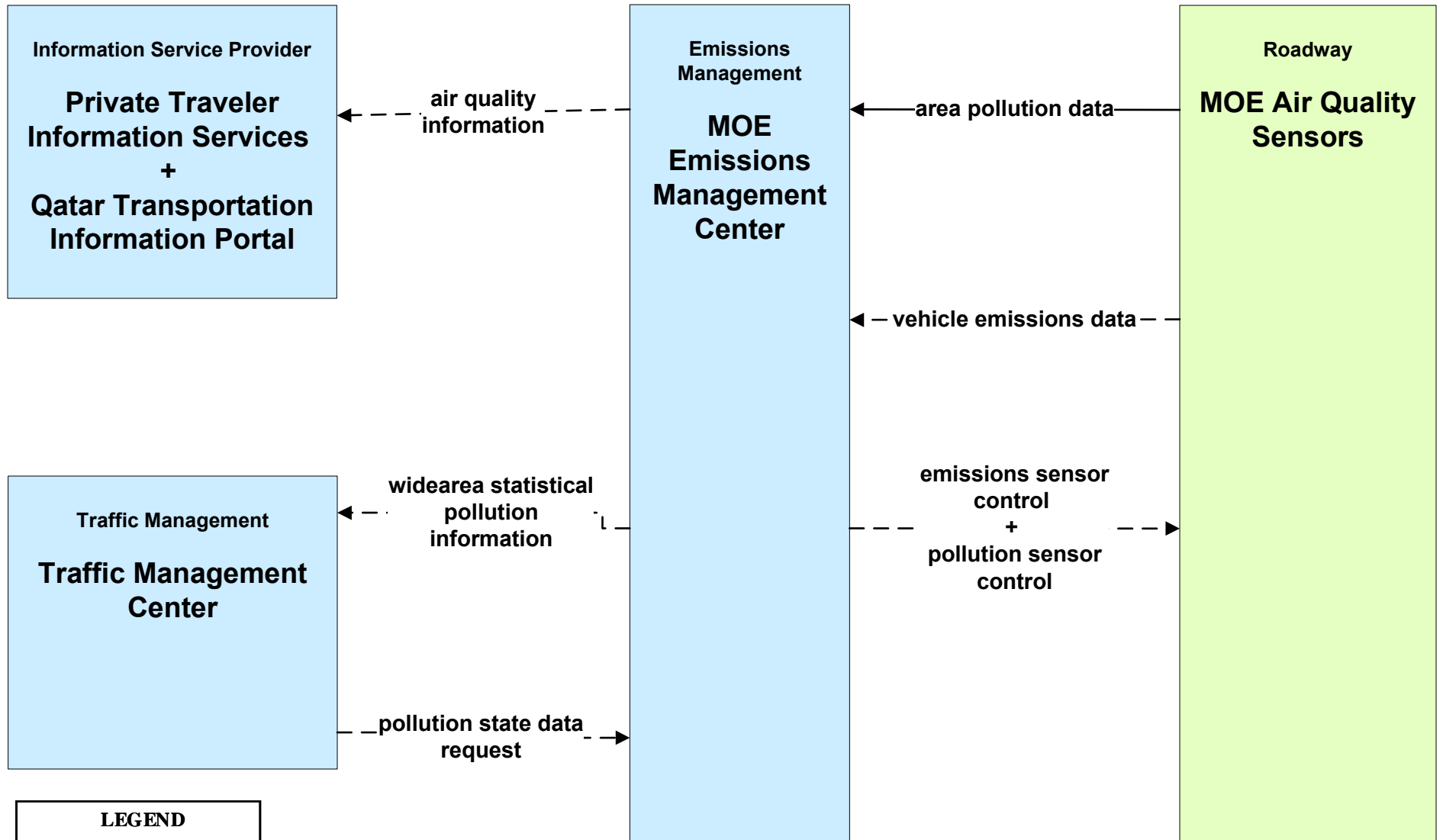
ATMS10 - Electronic Toll Collection

NDIA Land-Side Congestion Management Operations

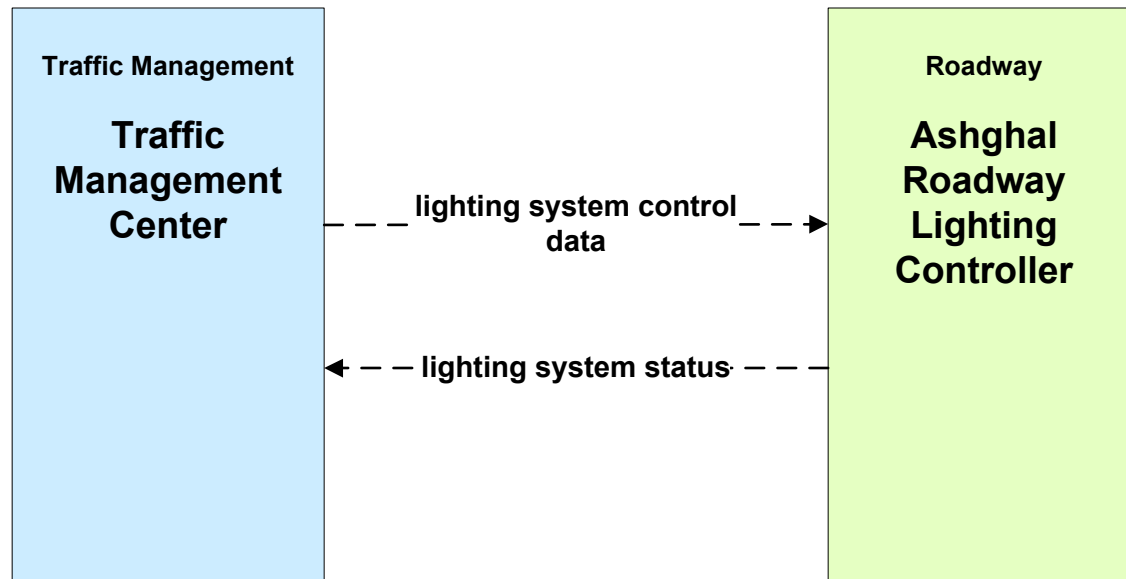


ATMS11 - Emissions Monitoring and Management

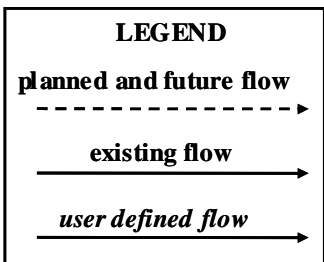
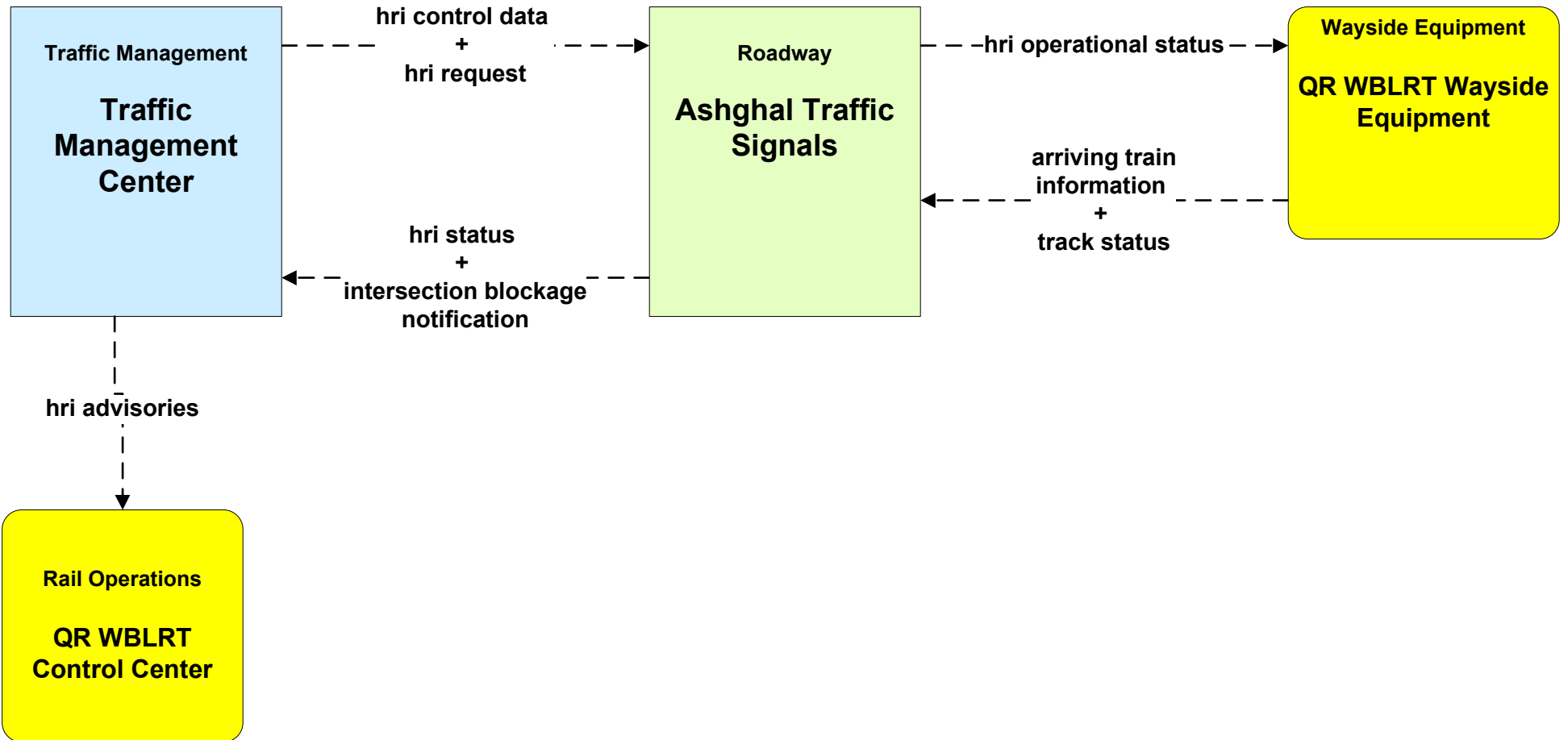
Ministry of Environment



ATMS12 – Roadside Lighting Control Ashghal

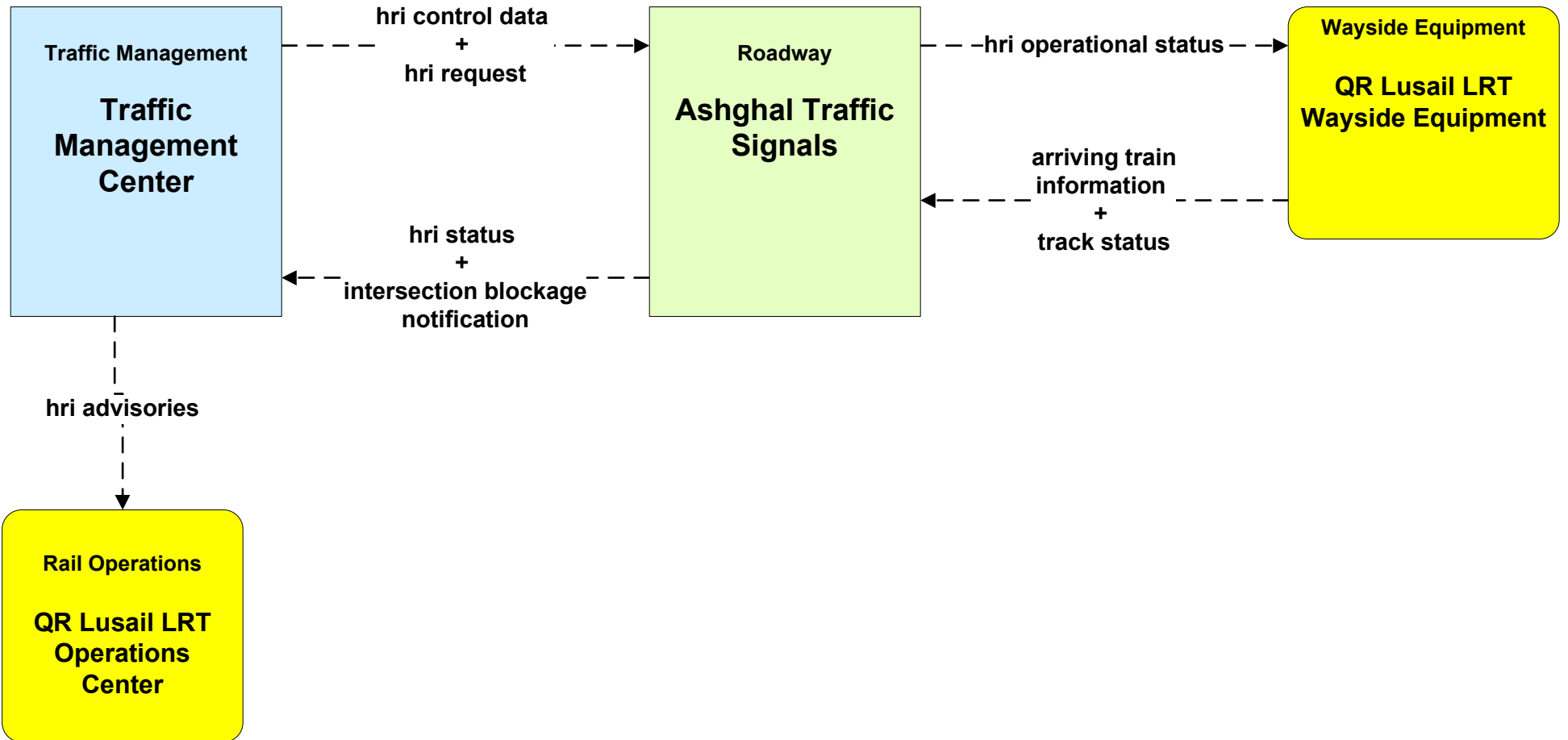


ATMS14 - Advanced Railroad Grade Crossing WBLRT Rail



Only QR Lusail LRT and WBLRT have at-grade (level) crossings.

ATMS14 - Advanced Railroad Grade Crossing QR Lusail LRT

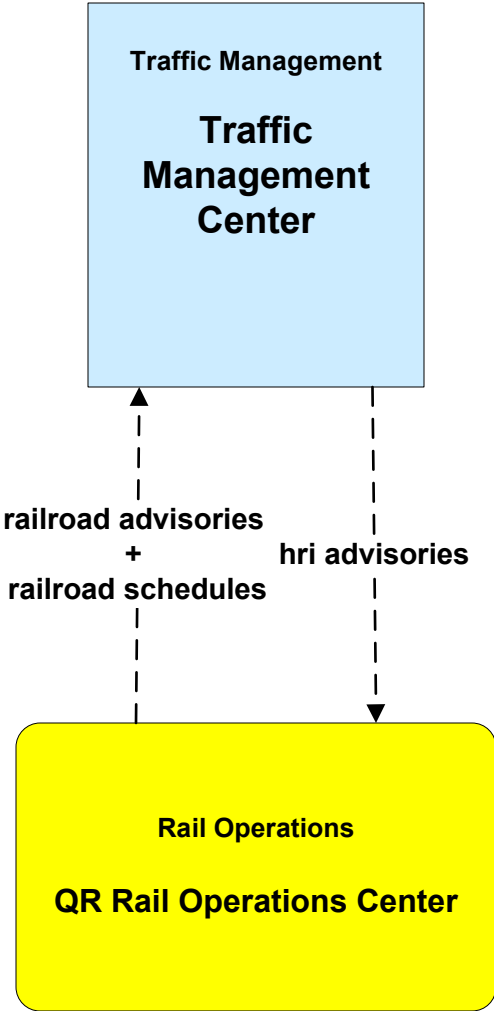


LEGEND

- planned and future flow**
- existing flow**
- user defined flow**

Only QR Lusail LRT and WBLRT have at-grade (level) crossings.

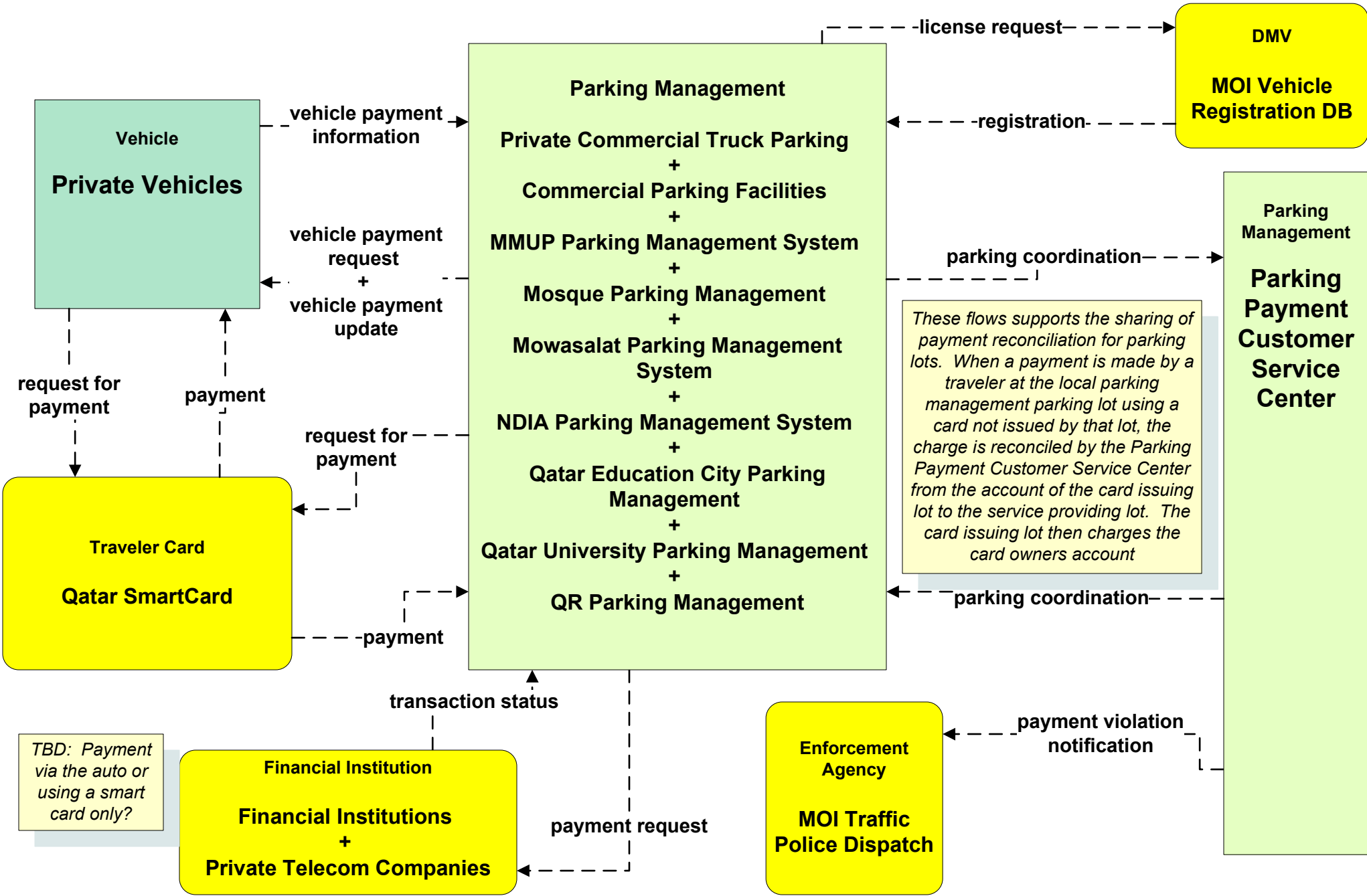
ATMS15 - Railroad Operations Coordination



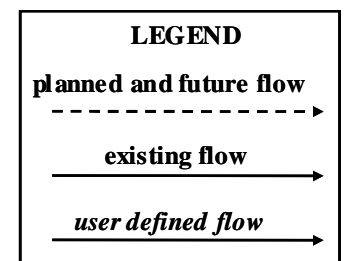
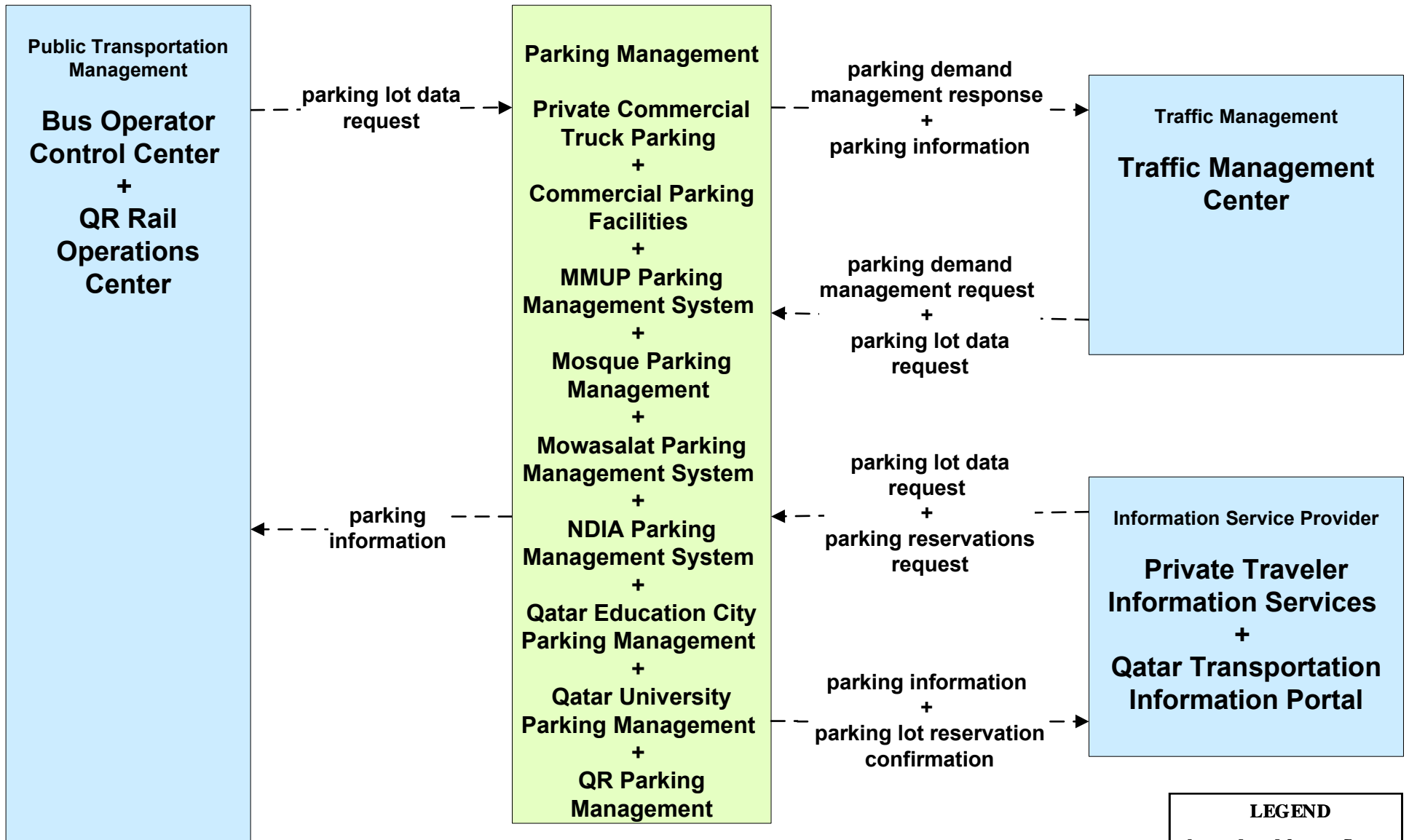
LEGEND

- planned and future flow** (dashed arrow)
- existing flow** (solid arrow)
- user defined flow** (solid arrow)

ATMS16 - Parking Facility Management Ashghal

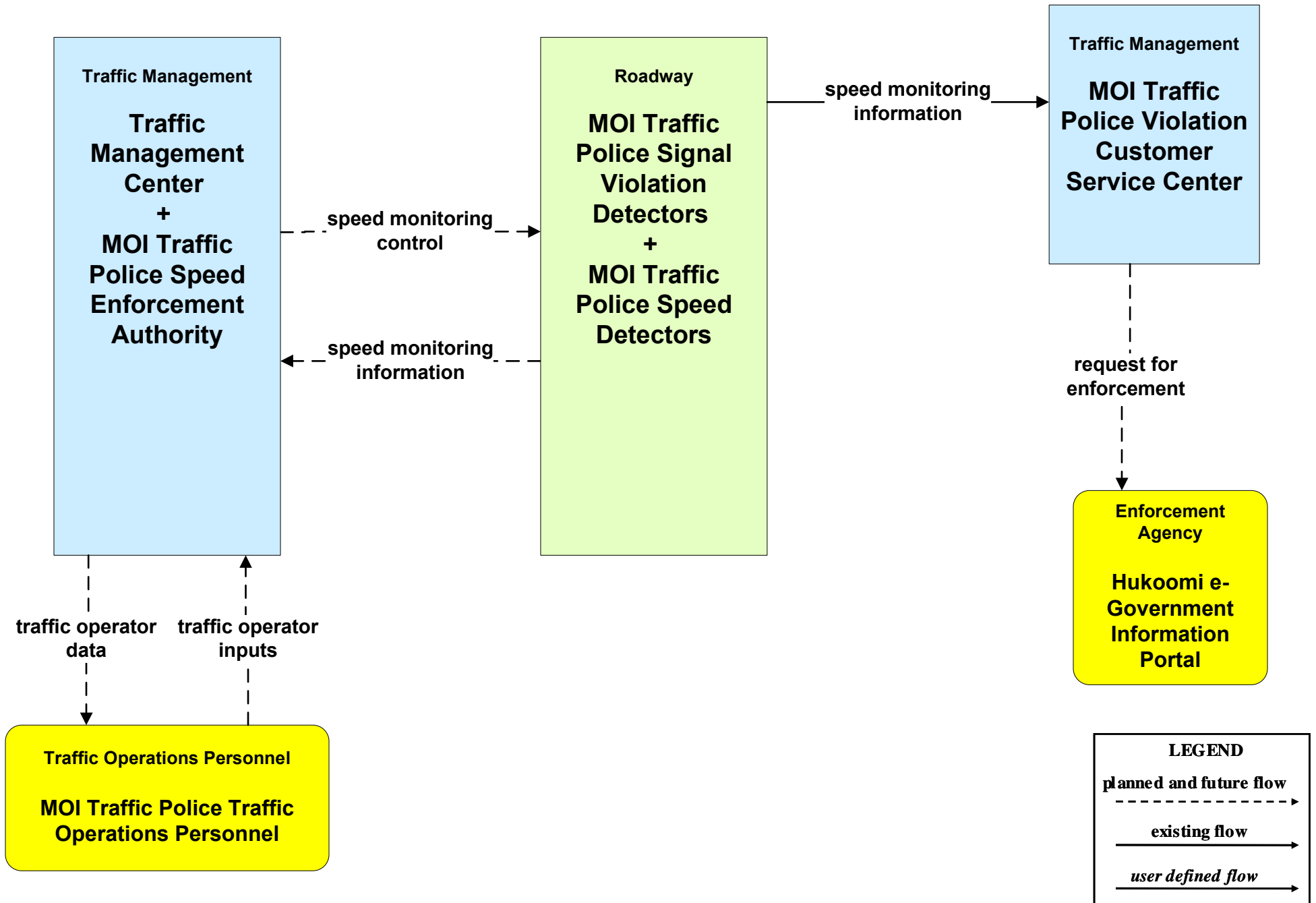


ATMS17 - Regional Parking Management

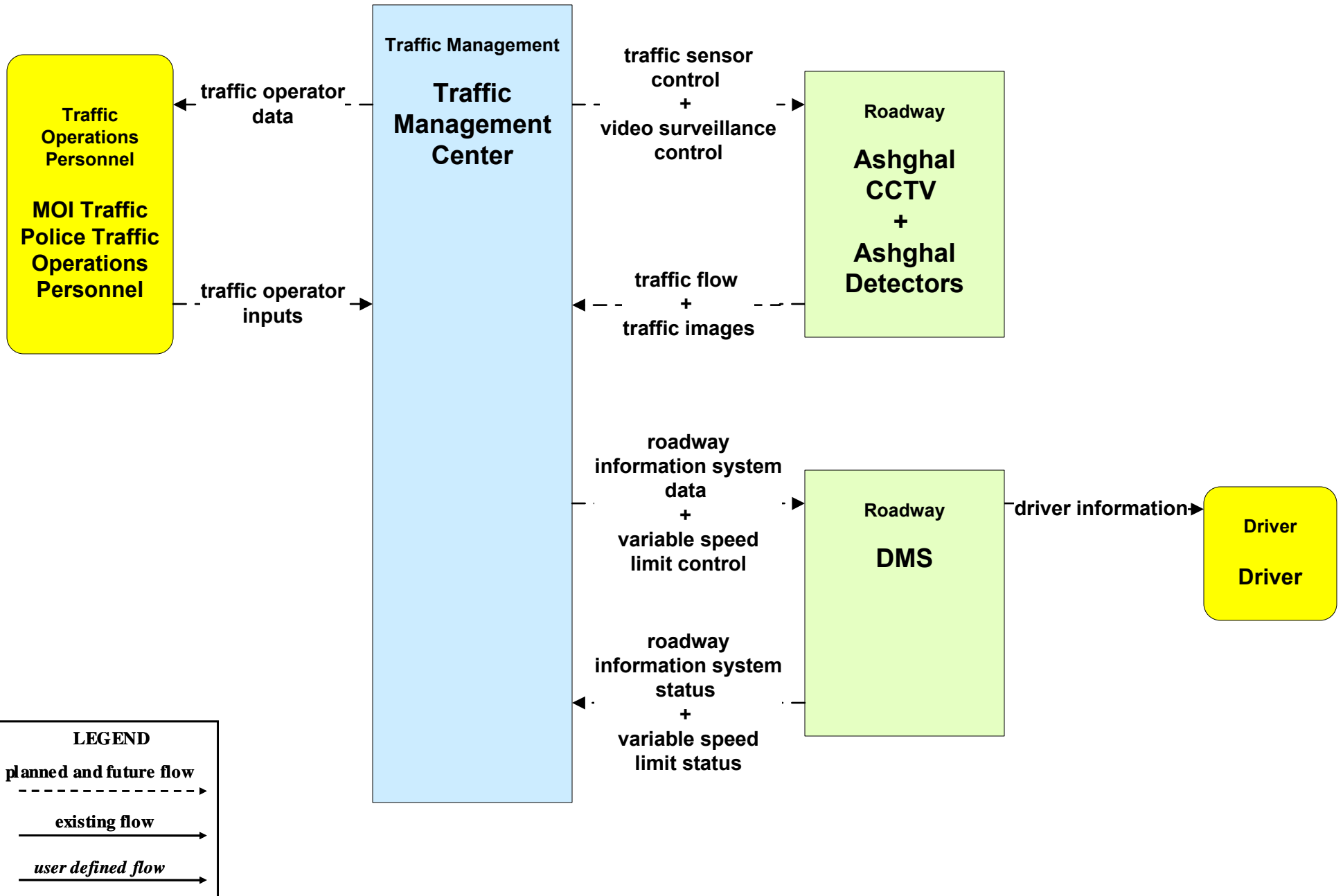


ATMS19 - Speed Monitoring

Speed Monitoring and Signal Violation Enforcement



ATMS22 – Variable Speed Limits



ATMS24 - Dynamic Roadway Warning Overheight Detection and Alarms

