



Development of National Intelligent Transportation Systems (ITS) Framework and Standards

AN EFFORT BY ITS GROUP

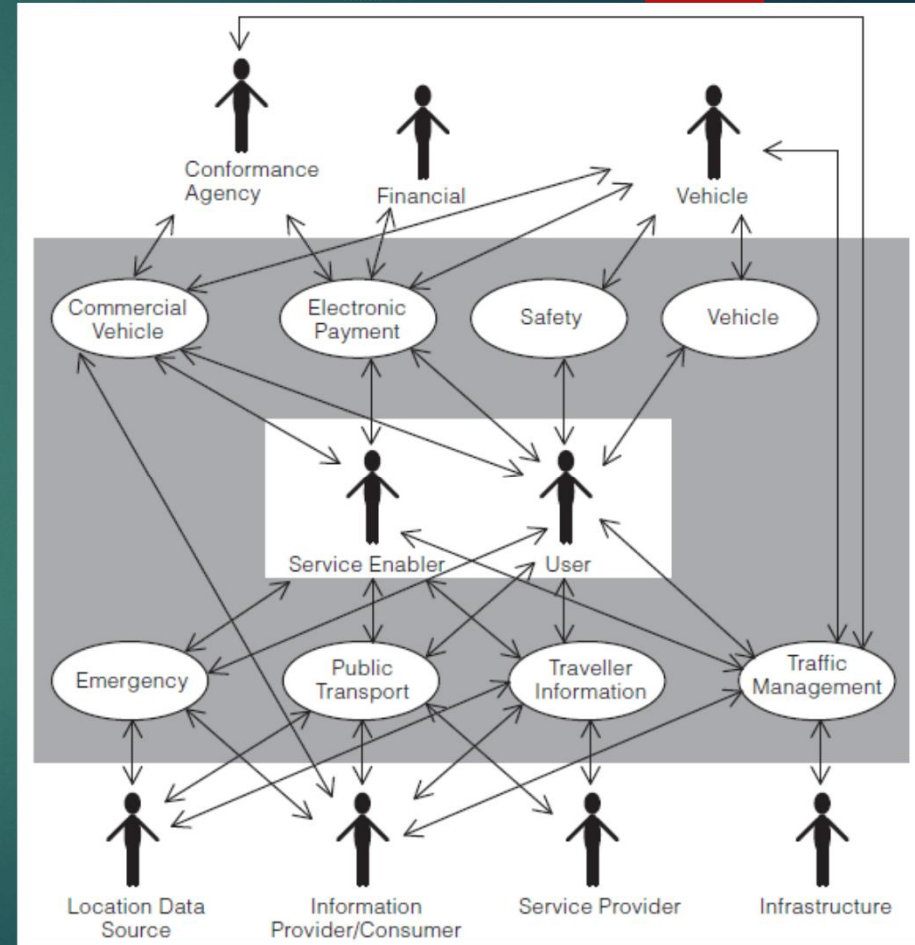
Intelligent Transportation System Architecture

An ITS system architecture provides a framework for planning, defining, deploying, and integrating intelligent transportation systems.

Informally an ITS system architecture describes what ITS does (the user services), where this happens (entities), and what information moves between these components (flows)

For this instant case, we have defined:

“The User Services Standardization of System Components and Data Flows”



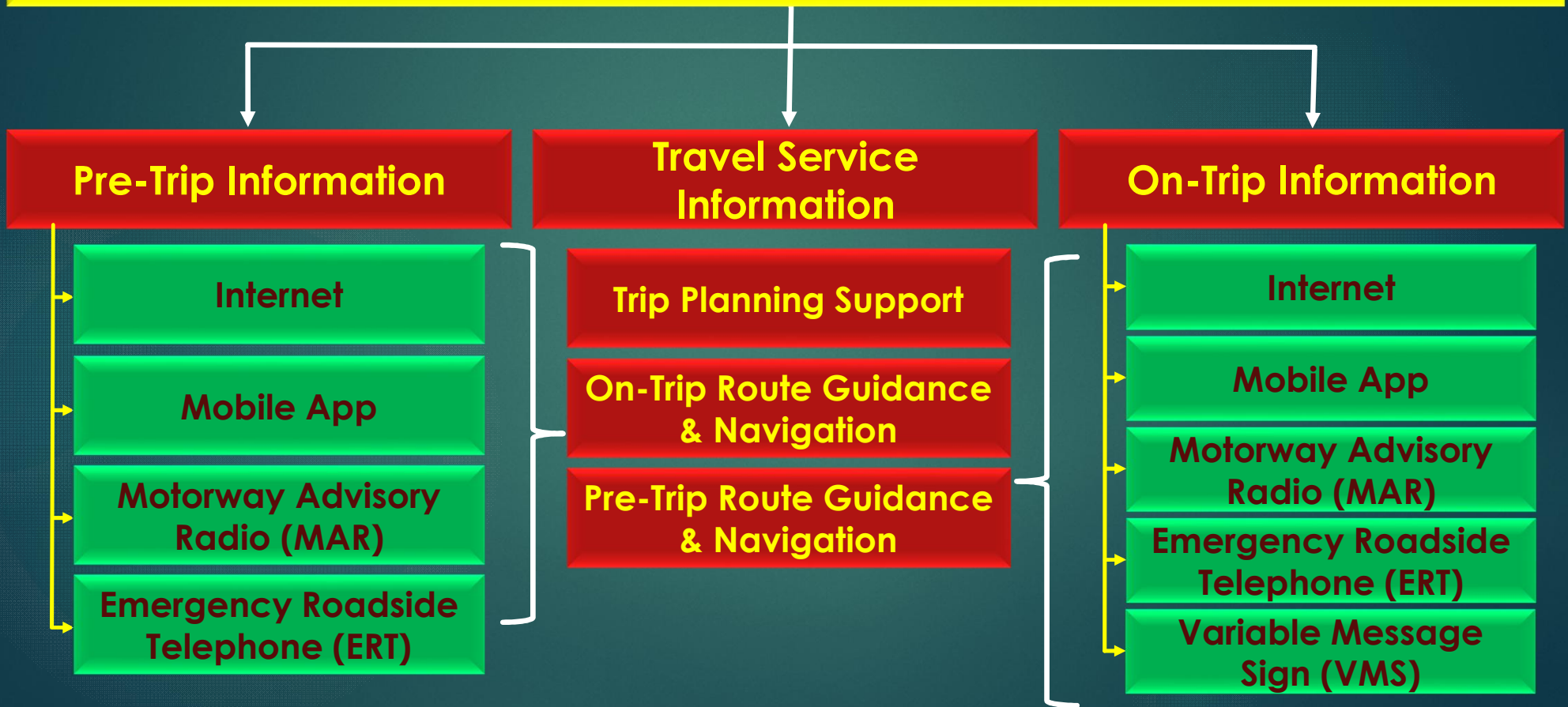
Intelligent Transportation System Architecture

USER SERVICES

1. **Traveler Information**
2. Traffic Management & Operations
3. **Law Enforcement & Personal Safety**
4. Freight Transport
5. **Public Transport**
6. Emergency & Disaster Response Management
7. **Electronic Toll Collection System**
8. **Road transport related personal safety**
9. Weather & Environmental Conditions Monitoring
10. Disaster response management
11. National security
12. **General**

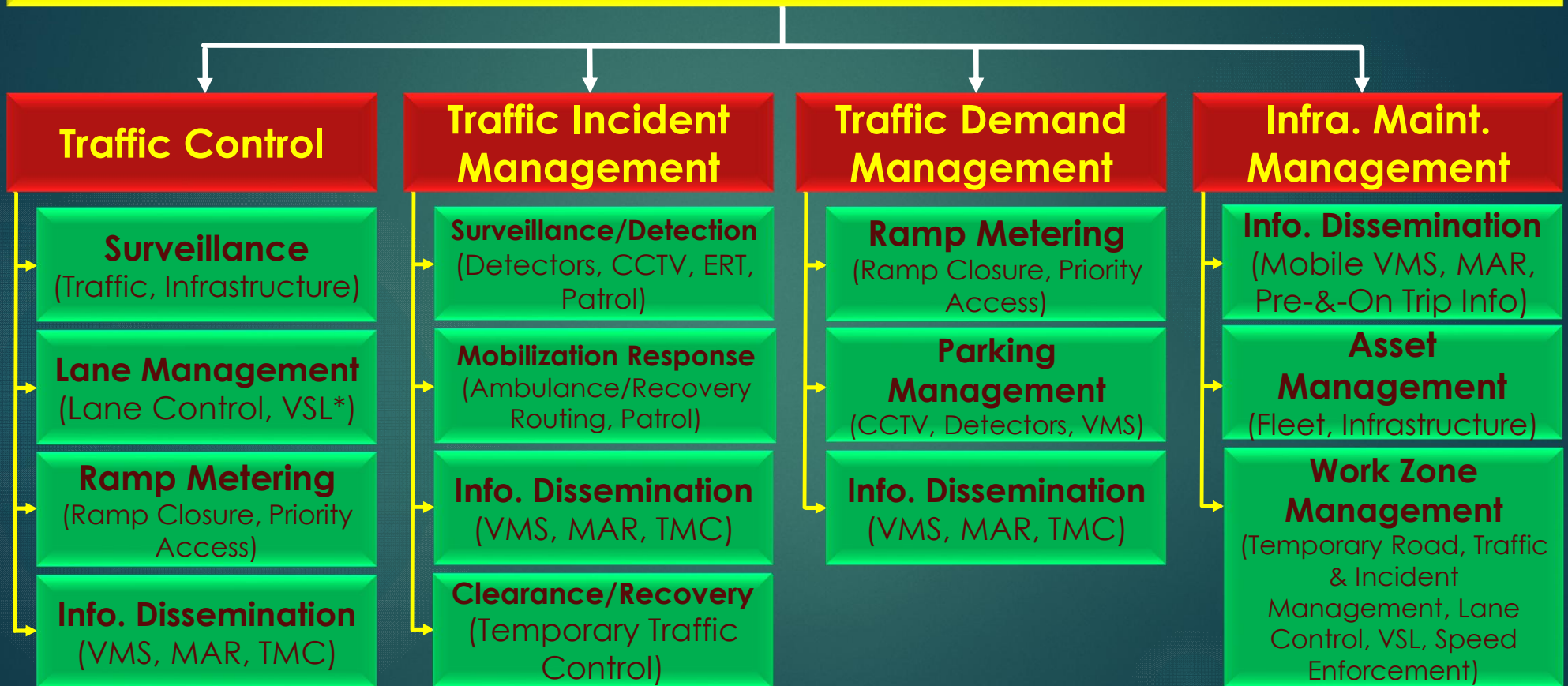
ITS Architecture – User Services Elaborated

1. Traveler Information



ITS Architecture – User Services Elaborated

2. Traffic Management & Operations



ITS Architecture – User Services Elaborated

3. Law Enforcement & Personnel Safety

Policing

Round the Clock Patrolling

Monitoring and control of suspicious vehicles

Hazardous Material Screening

Infrastructure Safety & Security

Traffic Regulations Enforcement

Speed Enforcement

Ramp Metering Enforcement

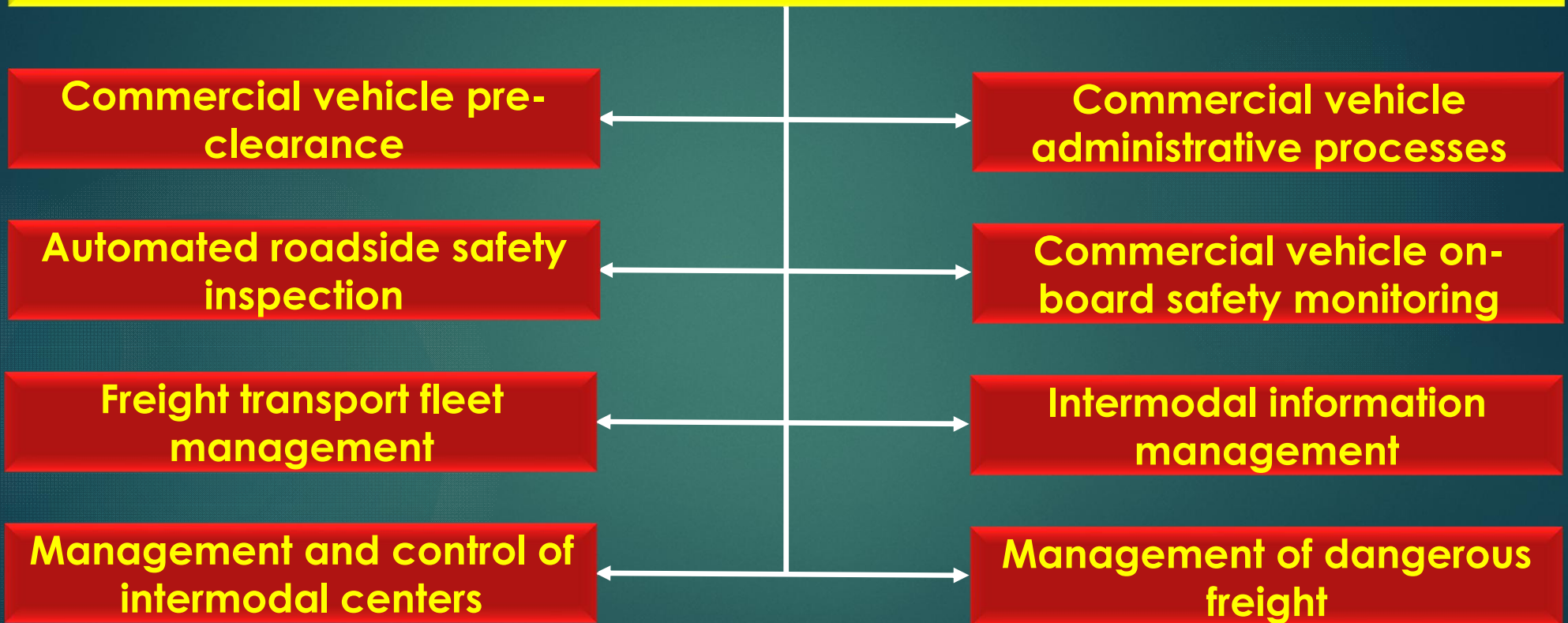
Axle Load Regime Control

Other Traffic Regulations Enforcement

Safety Enhancement for Vulnerable Road Users

ITS Architecture – User Services Elaborated

4. Freight Transport



ITS Architecture – User Services Elaborated

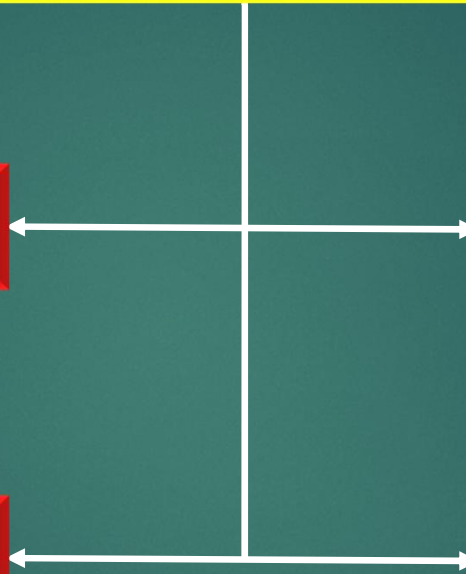
5. Public Transport

Operation & Fleet
Management

Transportation Demand
Management

Information Dissemination

Safety and Security



ITS Architecture – User Services Elaborated

6. Emergency & Disaster Response Management

Emergency Notification &
Personal Security

Disaster Data Management

Emergency Vehicle
Management

Disaster Response
Management

Hazardous Materials &
Incident Notification

Coordination with
Emergency Agencies

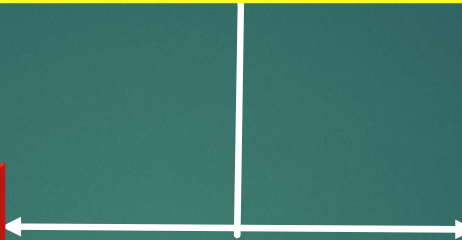
Detectors, CCTV, ERT, Patrol, Temporary Road, Traffic & Incident Management, Lane Control, VSL, Speed Enforcement, Ambulance/Recovery Routing, VMS, MAR, TMC.

ITS Architecture – User Services Elaborated

7. Electronic Toll Collection

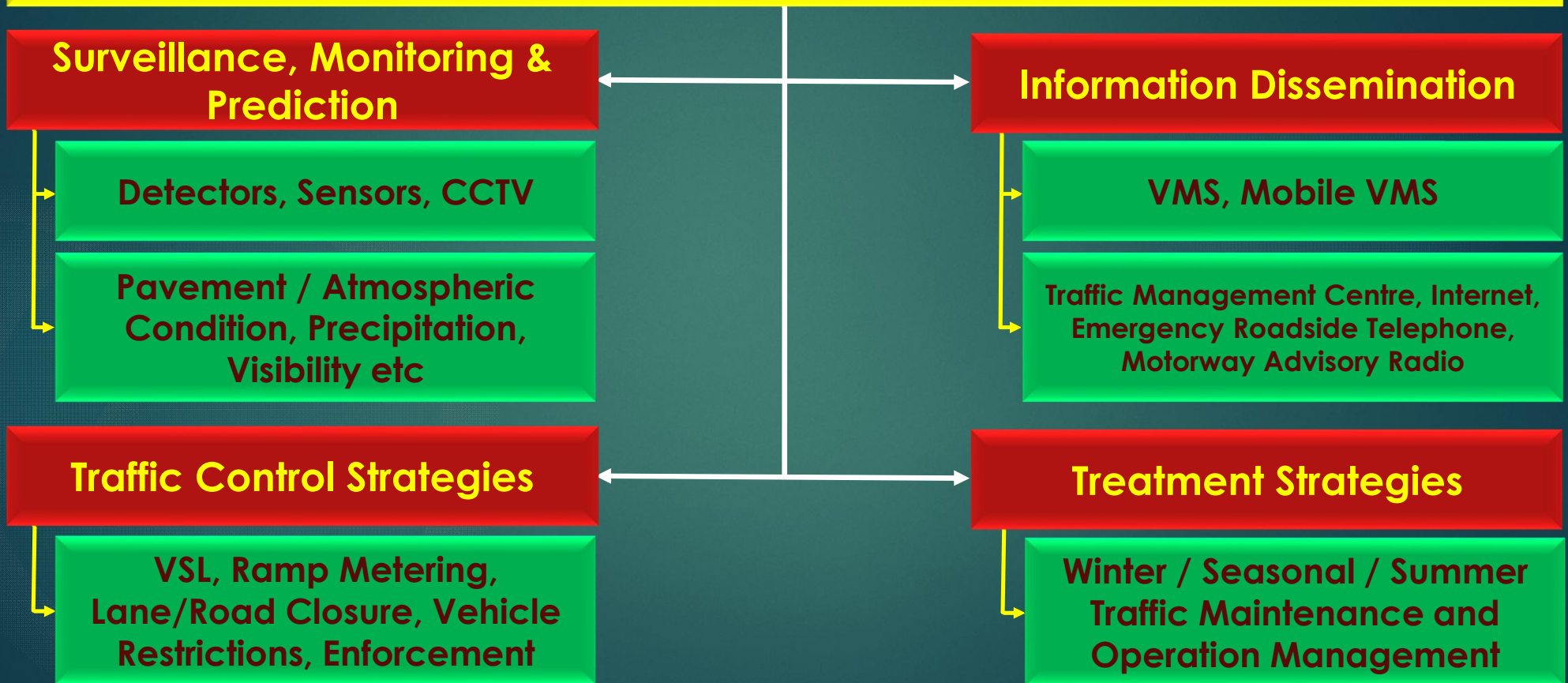
Transport related electronic financial transactions

Integration of transport related electronic payment services



ITS Architecture – User Services Elaborated

8. Road Weather Information System



ITS Architecture – User Services Elaborated

9. General

Architectural Properties
Adaptability
Continuity
Expandability
Quality of Data Content
Safety
User Friendliness

Data Exchange
Constraints
Cost/Benefit
Maintainability
Robustness
Security
Special Needs

Back to ITS
Architecture

Intelligent Transportation System Architecture

Standardization of System Components and Data Flows

1. IT infrastructure & apps
2. Road Weather Information System (RWIS)
3. Variable Message Signs (VMS)
4. Ramp Metering (RM)
5. Motorway Advisory Radio (MAR)
6. Traffic Incident Management (TIM)
7. ETTM
8. Weigh stations
9. Enforcement
10. Operational aspects
11. Futuristic aspect