




What is ITS?

ITS Architecture for Transit

Introduction

Topics

- Intelligent Transportation Systems (ITS)
- The ITS Architecture for Canada
- ITS User Services
- Les sous-services du domaine du transport en commun
- ? 

What are Intelligent Transportation Systems?

The integrated application of advanced sensor, computer, electronics, and communications technologies and management strategies to increase the safety and efficiency of the surface transportation system,

or

Broad range of diverse technologies applied to transportation to make systems safer, more efficient, more reliable and more environmentally friendly, without necessarily having to physically alter existing infrastructure.

(Transport Canada)

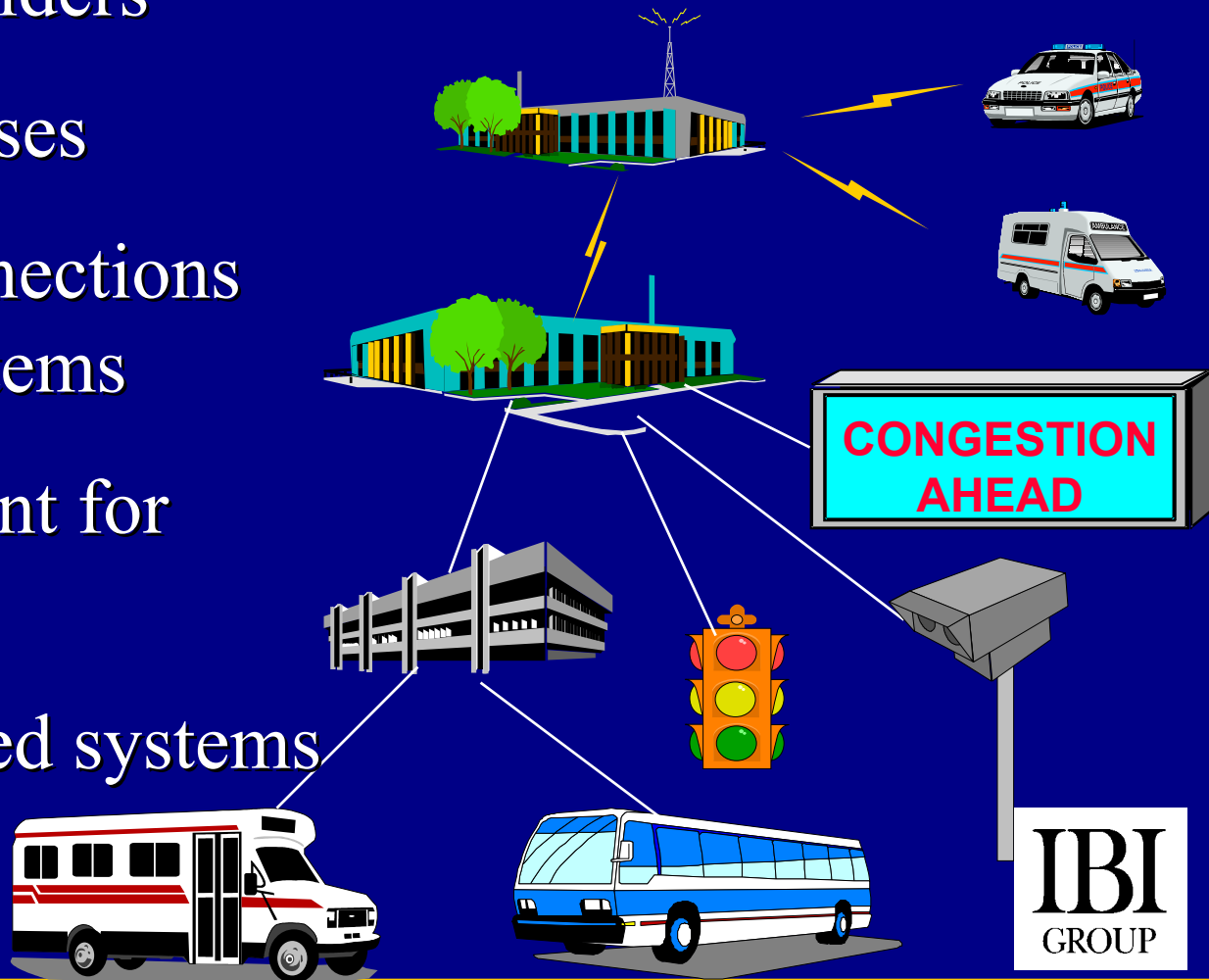


What is the ITS Architecture?

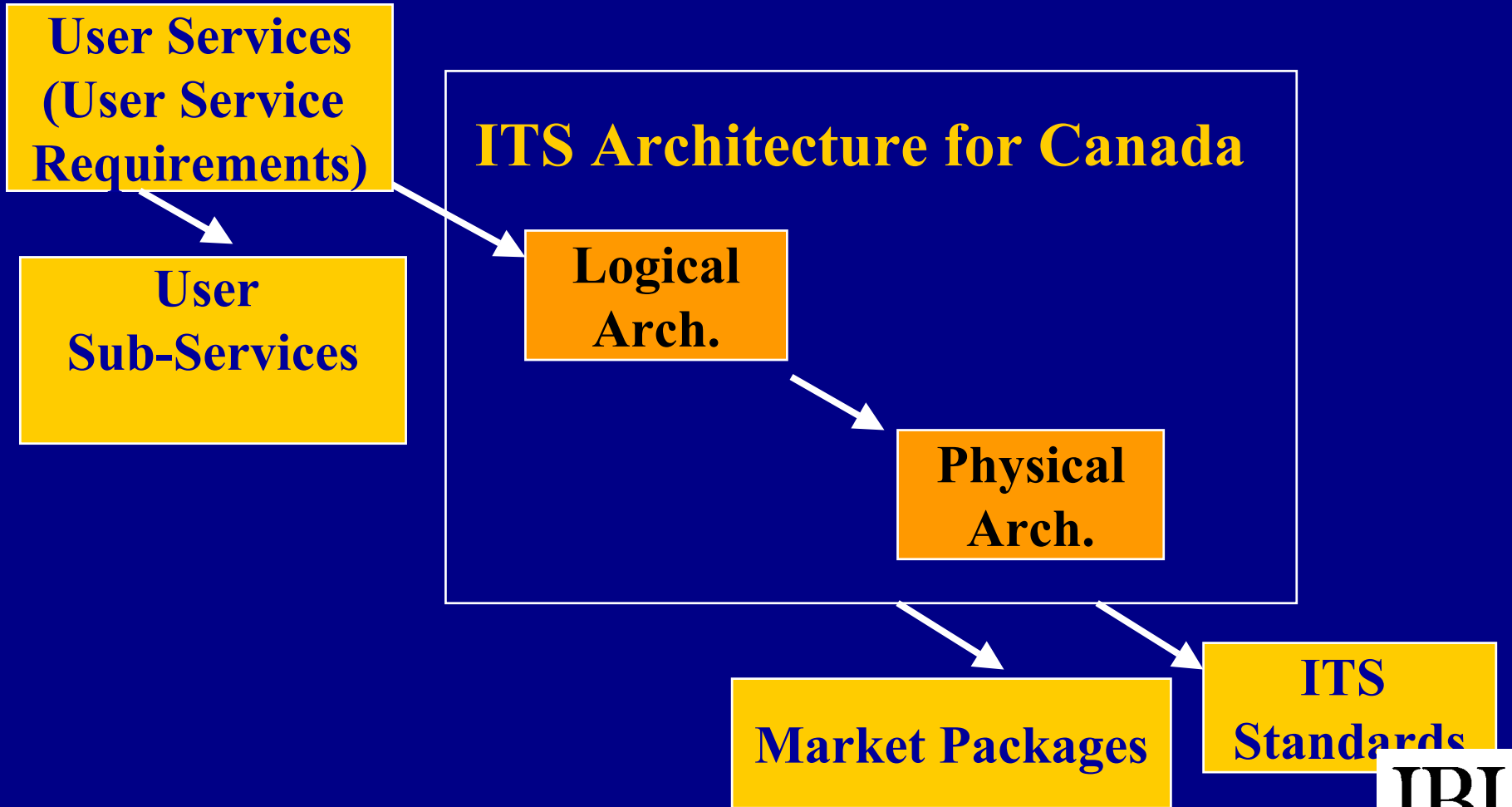
- provides a unified framework for integration to guide the co-ordinated deployment of ITS programs within the public and private sectors.
- describes interaction among physical components of the transportation system including travelers, vehicles, roadside devices, and control centres.
- also describes the information and communications system requirements, and the standards required to facilitate information sharing for ITS deployment.

The ITS Architecture as a Framework

- Identify stakeholders
- Describe processes
- Define interconnections between subsystems
- Develop blueprint for integration
- Deploy integrated systems



What does the ITS Architecture for Canada Consist of ?



What are User Services?

- Describe what ITS *should* do, from a *user's* perspective
- 35 user services in the Canadian Architecture
- Examples of User Services:
 - *Traveller information*
 - *Transit management*
 - *Emergency Vehicle Management*
- User Services are broken down into “User Sub-Services” (90)

Transportation User Services (35) Fall into 8 Bundles



Information Warehousing



Public Transport



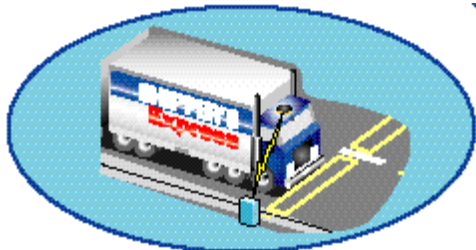
Emergency Management



Traveller Information



Traffic Management



Commercial Vehicle Operations



Electronic Payment



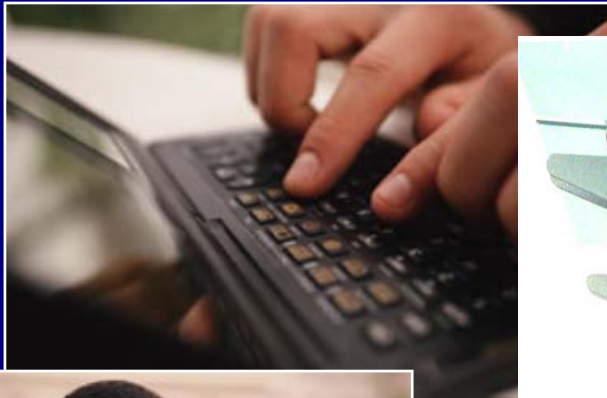
Vehicle Safety and Control Systems

Major Areas of ITS

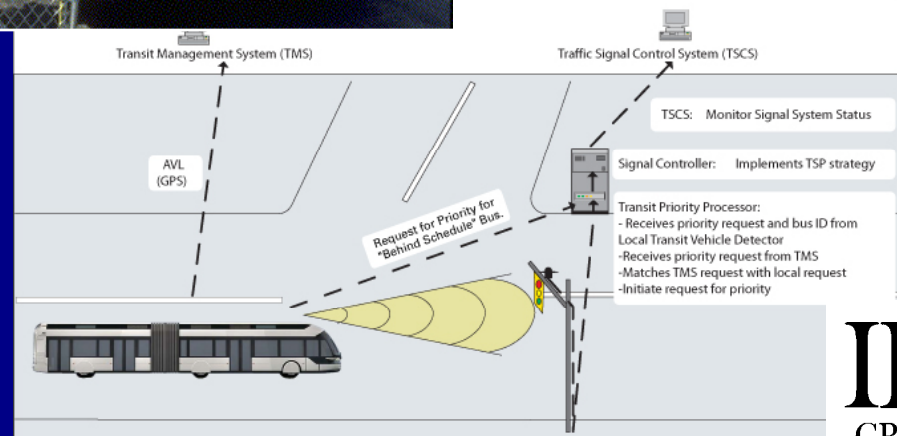
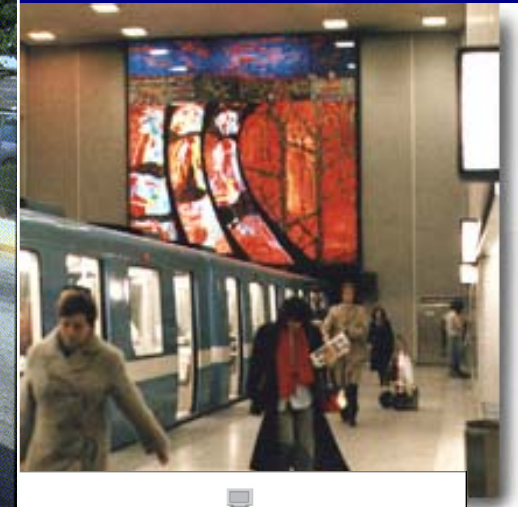
- User Services Bundles

- Traveller Information
- Traffic Management
- Public Transport
- Electronic Payment
- Commercial Vehicle Operations
- Emergency Management
- Vehicle Safety and Control Systems
- Information Warehousing

Traveller Information (4s)



Public Transport (4s)



Electronic Payment (1s)

Interoperable Applications

Common Payment

Common Identification

Local/Regional Public Agency Applications

Transit Payment

Parking Payment

Government Services

Car Sharing

Tourist Services

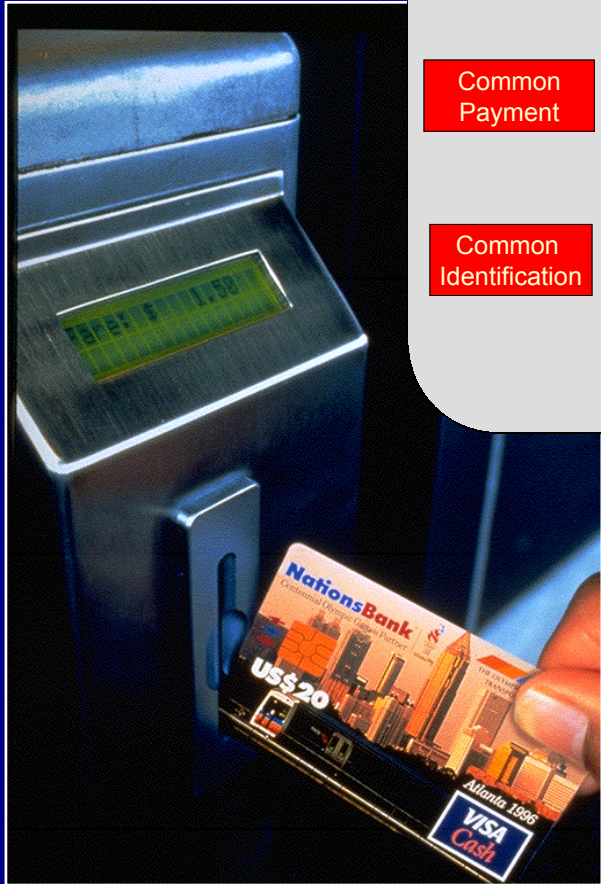
Other Applications

Private Sector Applications

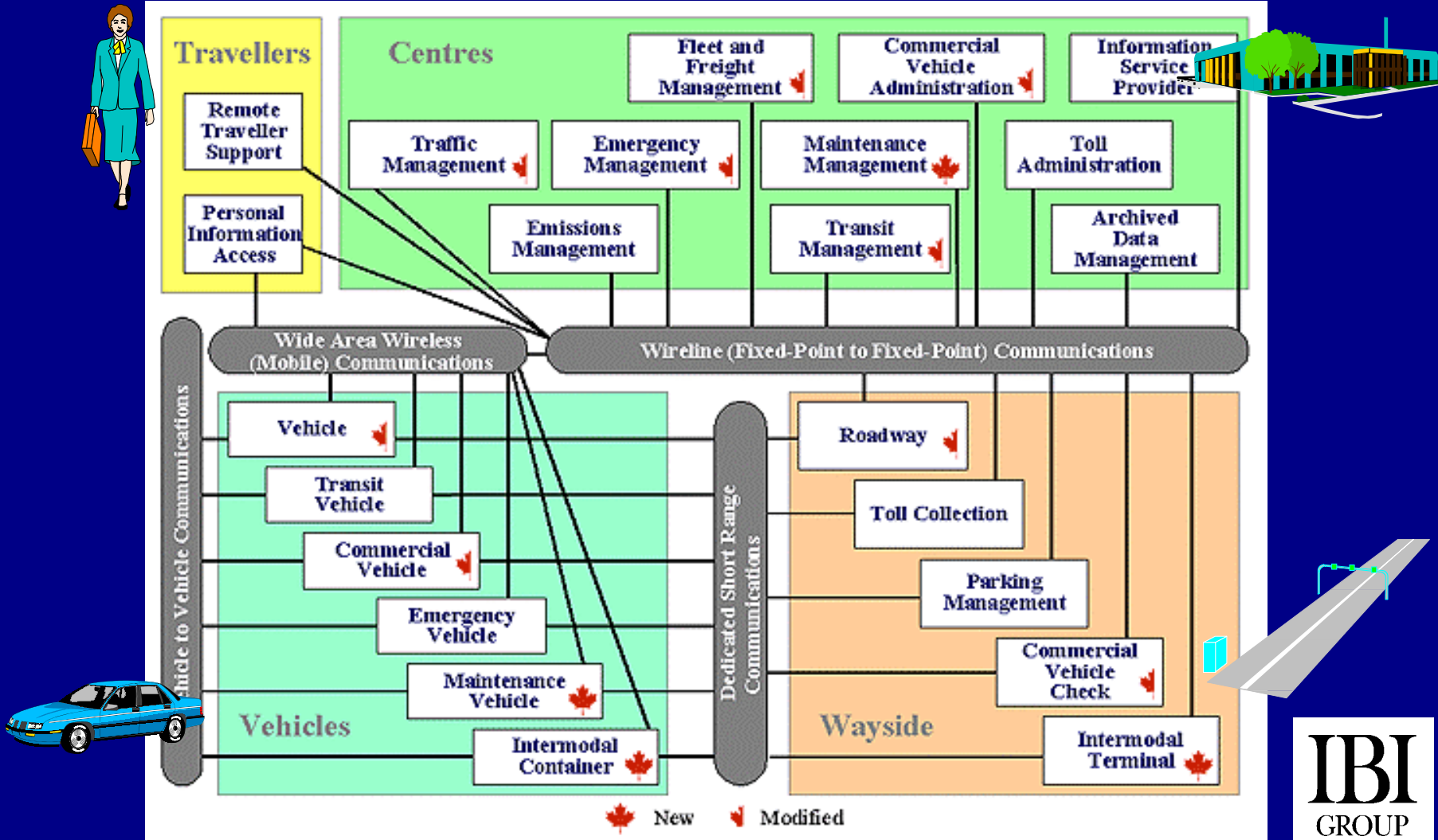
Retail Payment

Loyalty Schemes

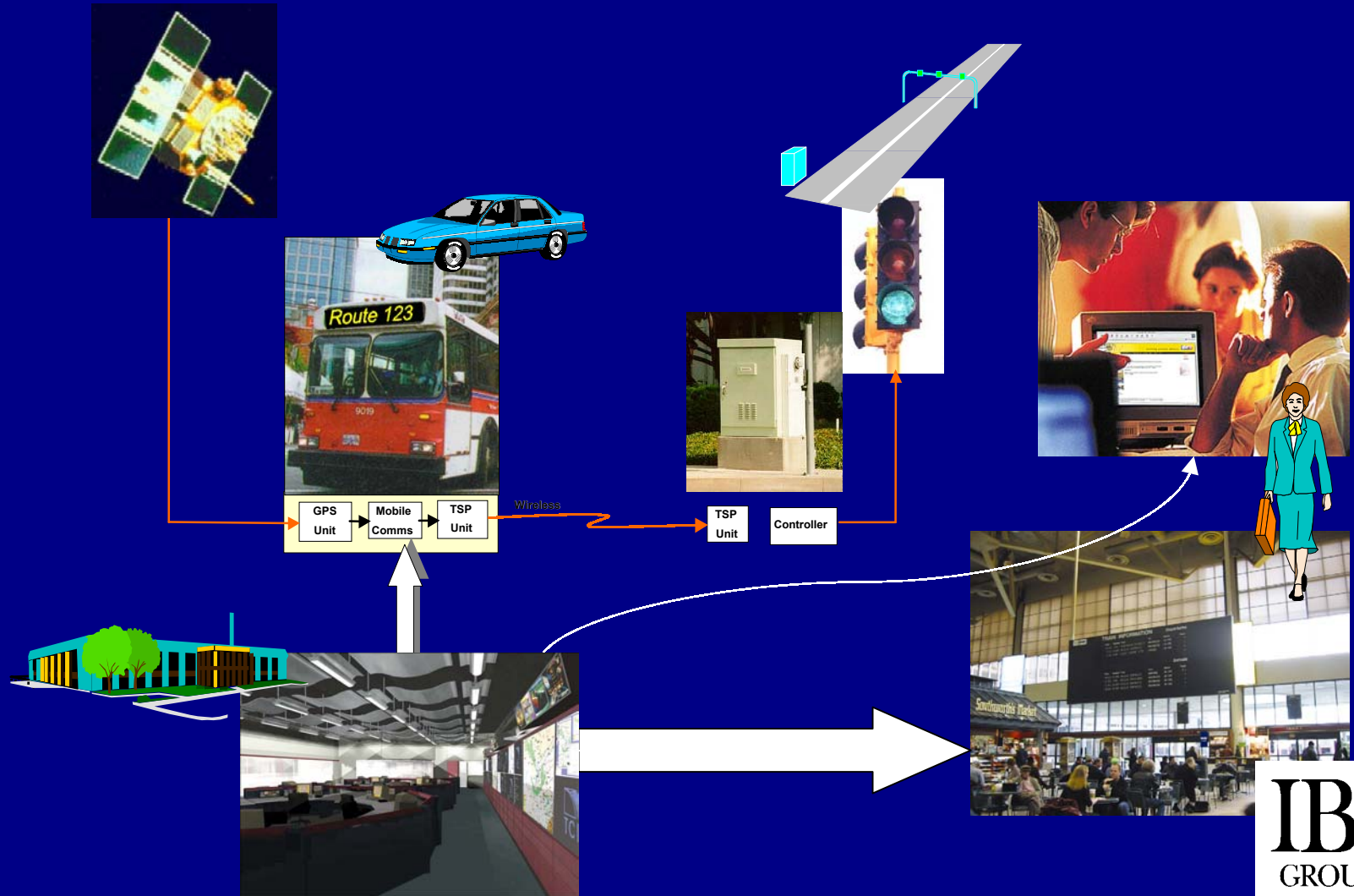
Other Applications



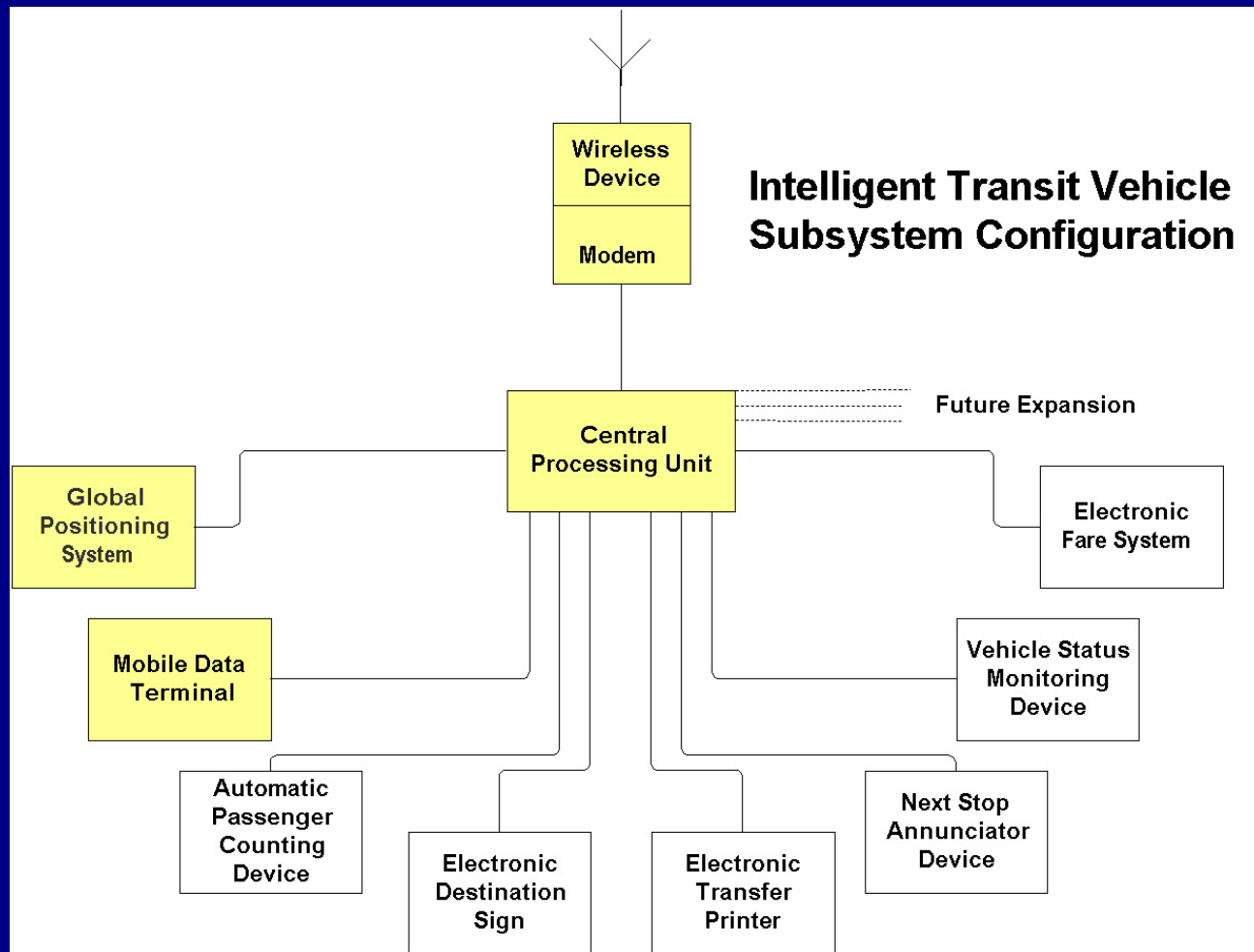
Physical Architecture - Defines where Functions are performed - “Subsystems” (4)



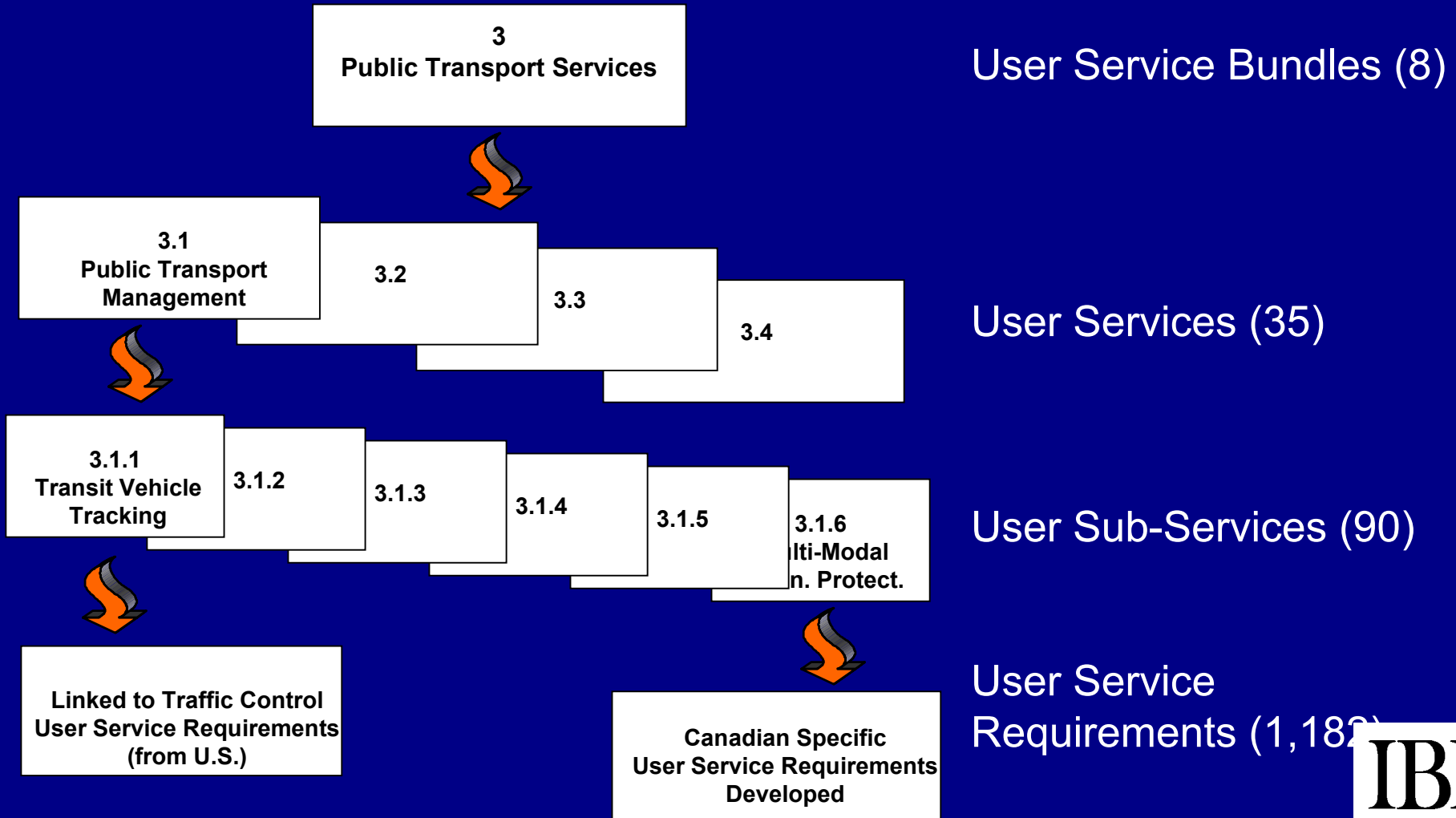
Transit ITS Physical Architecture



Vehicle (for Transit) Subsystem Configuration



Review - User Service Hierarchy



Public Transport - User Services

3.1 Public Transport Management – applies advanced vehicle electronic systems to various public transportation modes and uses the data generated by these modes to improve service to the public.

3.2 En-route Transit Information – provides travellers with real-time transit and high-occupancy vehicle information allowing travel alternatives to be chosen once the traveller is en-route. (1. Information Receipt, 2. Information Processing, 3. Information Distribution)

3.3 Demand Responsive Transit – involves the use of flexibly routed transit vehicles offering more convenient service to customers.

3.4 Public Travel Security - supports innovative applications of technology to improve the security of public transportation.

Services de transport en commun – Sous-services (9ss)

3.1.1 Localisation des véhicules de transport en commun

3.1.2 Opérations des trajets fixes de transport en commun

3.1.3 Gestion des passagers et du paiement

3.1.4 Entretien des véhicules de transport en commun

3.1.5 Coordination intermodale

3.1.6 Assurance de la correspondance intermodale

3.2.1 Information en cours de route

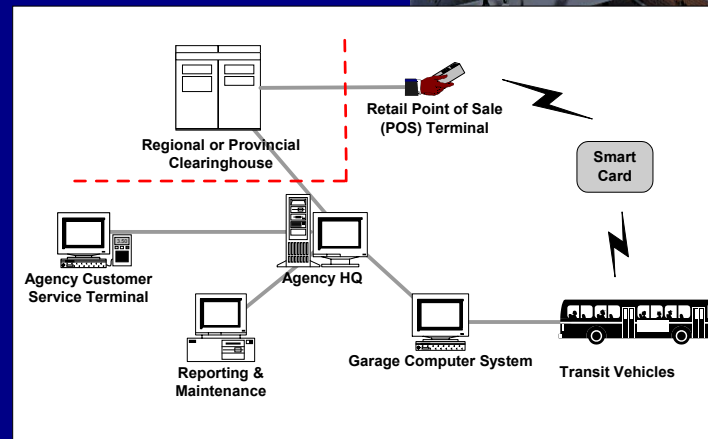
3.3.1 Transport en commun adapté à la demande

3.4.1 Sécurité dans les transports en commun

Services de transport en commun

Les tendances et les pistes:

- Intégration des opérations
- Coordination des modes et des organismes
- Élimination des silos
- Respect des normes
- Transparence à l'utilisateur





Thank you

Merci