Intelligent Mobility
Evaluation of the Palestinian Case

I-Mobility Day

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Transportation Systems - General

- Progress of Transport Systems of any nation is an indication of its overall progress.

- **Level of Investment in Transport Systems; USA for example:**

  - **ISTEA** -- $150 B (George Bush)

  - **TEA 21** - $210 B (Bill Clinton)

  - **???** - $240 B (George W. Bush)

  - Largest bill in the US history after the military

I-Mobility Development

- Intelligent Vehicle Highway Systems (IVHS)
- Intelligent Transport System (ITS) - Intelligent Mobility (i-Mobility) – with overall objectives of:
    - Reducing congestion
    - Improving fuel efficiency
    - Increasing road safety
    - Reducing carbon emissions
    - Enhancing journey predictability
- Intelligent Mobility is NOT an option any more!

ITS Functional Areas

- **ATMS**   **A**dvanced **T**raffic **M**anagement **S**ystems

- **ATIS**   **A**dvanced **T**raveler **I**nformation **S**ystems

- **AVCS**   **A**dvanced **V**ehicle **C**ontrol **S**ystems

- **CVO**   **C**ommercial **V**ehicle **O**peration

- **APTS**   **A**dvanced **P**ublic **T**ransportation **S**ystems

- **ARTS**   **A**dvanced **R**ural **T**ransportation **S**ystems

- Security Systems

Examples of ITS Technologies
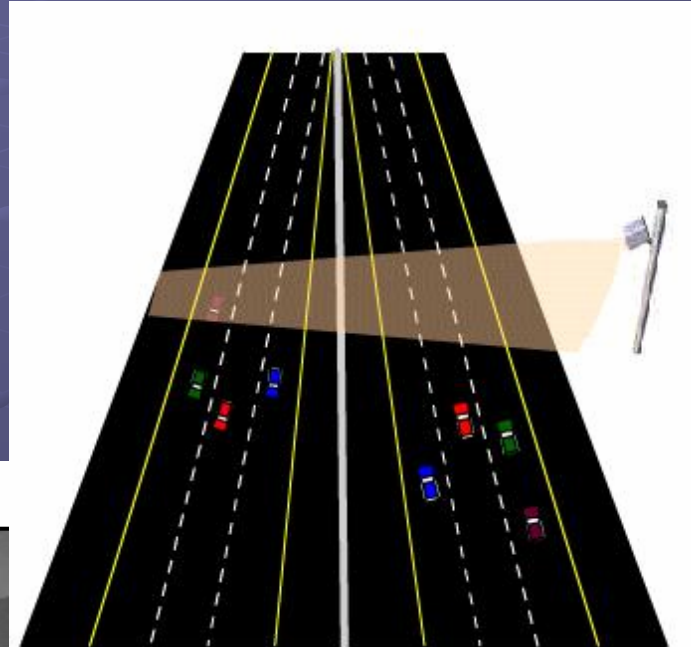
- **ATMS** - **A**dvanced **T**raffic **M**anagement **S**ystems

Electronic Toll Collection

NON-STOP LANES

HOV/AVI ONLY

AVI ONLY

AVI/COIN/MANUAL
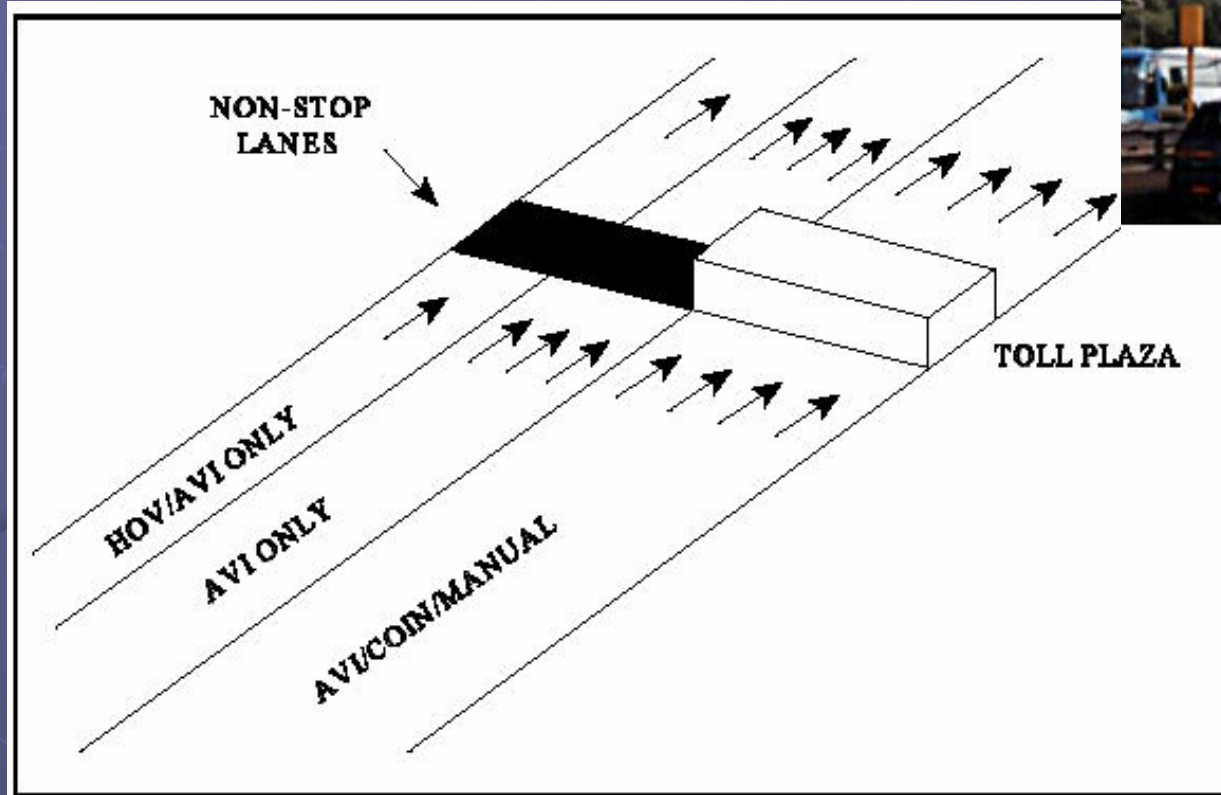
TOLL PLAZA

Schematic of an AVI Toll Plaza.

ATMS - Advanced Traffic Management Systems

Traffic Surveillance

The Control Center of the TranStar Freeway Management System in Houston, TX.

ATMS - Advanced Traffic Management Systems

Adaptive Traffic Signal Control

(SMART SIGNALS)

ATIS - Advanced Traveler Information Systems

- **Regular Radio Channels**
- **Highway Advisory Radio**
- **On-Board Displays**
- **In Station Information**
- **Pre-Trip Planning**
- **Changeable Message Signs**

Traveler information scenario
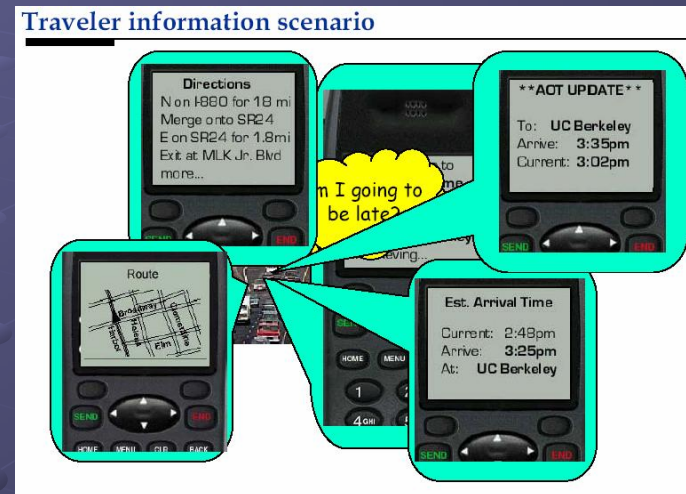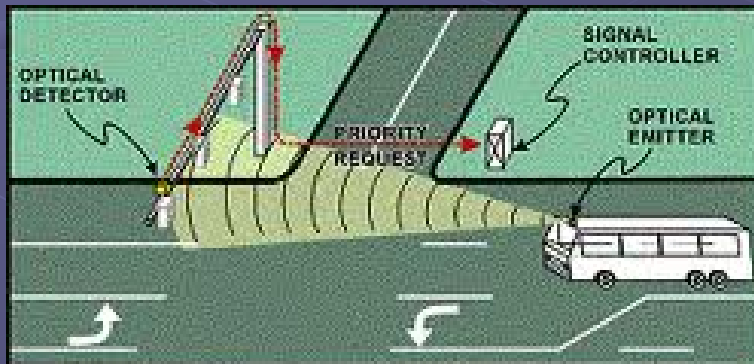
CVO - Commercial Vehicle Operation

- Weigh-in-Motion

- Border Crossing Inspection

APTS - Advanced Public Transportation Systems

- Automatic Vehicle Location (AVL) -- GPS, On-Board Transmitter
- Smart Cards
- Bus Pre-emption Signal

Transit signal priority using optical detection.
Example from Kittelson & Associates, Inc.

ITS Anticipated Benefits / Issues

Benefits

- Increase safety
- Reduce congestion (20% or more)
- Increase truck productivity
- Travel comfort & convenience
- Less energy & environmental impacts

Issues

- Benefits, Evaluation, and Costs
- System Architecture
- Standards and Protocol
- Human Factors and Safety
- Institutional Issues
- Legal Issues
- Energy and Environment

Palestinian Transport System

- Without the Palestinian ITS plan umbrella, it results in fragmented and isolated systems that are costly to install/integrate, also future development and enhancement may be limited.

- So far, one may safely claim that very limited applications of i-Mobility exist in the current Palestinian transport system

- **Palestinian i-Mobility group** is formed

Diagnosis of Existing Transport Systems

- **Land transportation infrastructure** is the predominant type of transportation
- About **50 percent** of roads are under **poor pavement** conditions
- **Gaza International Airport (GIA)**
- **Gaza Seaport**
- **Public Transport**
- **Urban Transport**
- **Freight Transport**
- **Ministries involved in the transport sector**

Overall Evaluation

- The **existing transport infrastructure** in the Palestinian territories is still inadequate to provide cost-effective services and to realize its full development potentials due to the adverse political developments, among others.

- Development activities in the transportation systems have not been following a national transportation master plan – projects are not coordinated or not in harmony with the prioritized national needs.

- Funding is a limiting factor.

Key Issues and Challenges

- Damages and movement restrictions
- Inadequate road facilities and limited accessibility
- Inadequate structure/organization of public transport
- Flow of goods through borders is controlled by the Israelis
- Political constraints retarding the development of a sound and efficient transportation system
- Absence of national transportation master plan
- The institutional structure
- Funding is a limiting factor for development

Development Needs and Future Plans for Intelligent Mobility

- Support **Research Fund** in i-Mobility – Palestinian Team Exists
- Develop a comprehensive **Master Transportation Plan**
- Develop a **vision** for a national and cross-border transport policy framework for the deployment of ITSS.
- Establish **Data Bank** for the Transport Sector
- Conduct a **Comprehensive Assessment Study** (transport conditions, available infrastructure, communication requirements for i-Mobility, and prepare a **Master Deployment Plan**.
- **Roads .... Traffic safety program** is to be developed.
- **Public Transport**
- **Freight**
- **Institutional**

Strengths and Opportunities

- Palestinian **i-Mobility** group collaborating with Arab i-Mobility

- Exiting research institutions and international connections

- The high use of mobile, IT, and internet

- Basic traffic control system exists.

- Existing fleet with modern and new vehicles.

- Good land (including fibre optics) and mobile infrastructure telecommunication systems covering Palestinian territories.

- Qualified IT sector private firms and developers, and IT and transport graduates.

- The willingness of some Palestinian institutions and IT/transport community leaders to start steps towards ITSS

- International donors and organisations currently supporting the development of Transport & Logistics

Conclusions - Where to start?

- Supporting the iMobiliy team -- open to interested institutions and individuals

- Embarking on the effort to prepare a vision and strategy for the ITSS.

- Allocating research funds to start case studies.

- Donors who support the transport sector to include components on the ITSS in large projects.

- Allocating matching Palestinian funds and involving the private institutions in ITSS

- Building on the willingness of some Palestinian institutions, municipalities, and IT/transport community leaders to start steps towards ITSS

Your support is needed and vital for the benefit of all

Thanks to the Palestinian I-Mobility Team for their contribution

Thanks you all for Listening