

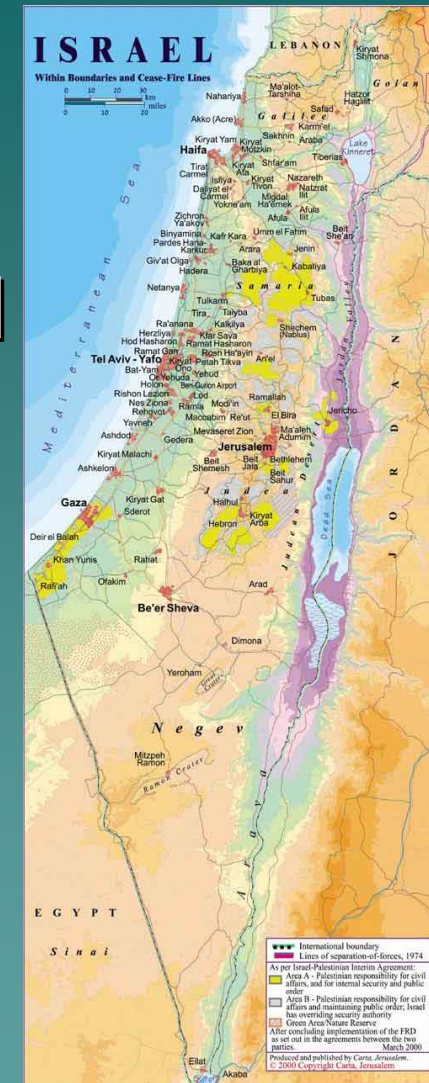
Intelligent Transportation Systems in Israel

Bird's-eye view of current
inventory and on-going projects

Zeev Shadmi – Research and ITS
officer, Chief Scientist Unit
Ministry of Transport

Facts and figures 2006

- Population – 7.1 million (density 350 per Km)
- Driving license holders - 3.2 M
- Motor vehicles – 2.2 M
- private cars - 230 per 1000
- Road crashes fatalities annual average 450 – 480,
- **Fatalities per 1.0 M pop. 64**



Main challenges

- Urban population 92% but low residential density
- Roads Infrastructure still lagging
- Rail transport neglected for many years, but catching up, market share still very low
- Public transit market share only 25% and diminishing
- Congested roads for long hours



Inventory of ITS initiatives in Israel

(1) Highways traffic management

- Metropolitan highways (Traffic monitoring, CCTV, VMS):

Ayalon (Tel-Aviv) - Ramp metering

Begin Road, tunnels (Jerusalem)



- Cross Israel

Electronic Toll highway



- Interurban Highways – CCTV, VMS

- More roads in construction



Inventory of ITS initiatives in Israel

(2) Traffic control centers

- 3 Municipal Traffic control centers:

Tel-Aviv
Jerusalem
Haifa



- Ayalon Highways - Tel-Aviv Metropolitan
- Interurban network - Integrated Police and National Roads Company center
- Cross Israel Road



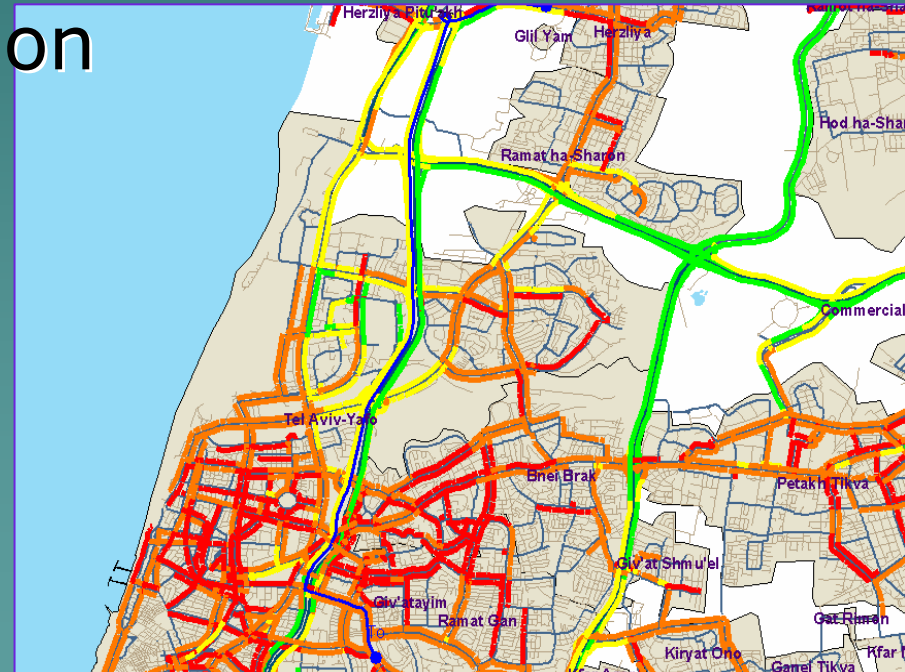
Inventory of ITS initiatives in Israel

(3) Cellular based traffic monitoring

Every Vehicle with cellular phone on board serves as sensor

- Travel time estimation
- Incidents detection
- Traffic statistics

Evaluation study comparing two service suppliers



ITS initiatives in Israel

(4) Jerusalem Light Rail project

- Rails in full scale construction
commissioning expected in 2009
- Utopia for Traffic signals priority



Jaffa St. scene



Calatrava Bridge

ITS initiatives in Israel

(5) Light Rail next projects

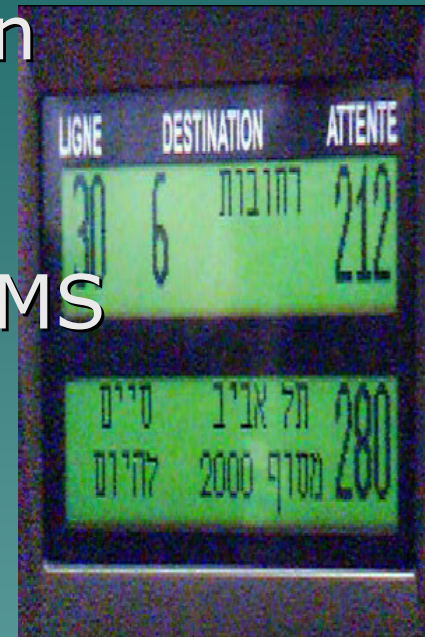
- Tel-Aviv Light Rail – constructor announced
- BRT is planned for next mass transit lines – Jerusalem, Haifa



Inventory of ITS initiatives in Israel

(6) Transit operators

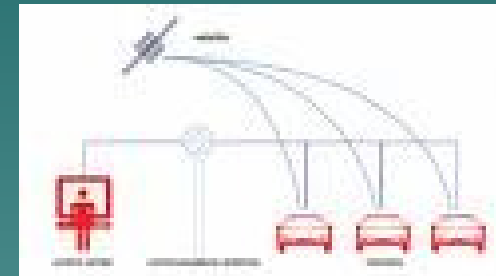
- Real Time Travelers Information (GPS based real time ETA):
 - Boards on stations
 - Inquiries service by cellular SMS
- Automatic contactless ticketing pilot project
- Automatic travelers counts
- Operations control – routes and time table
- Financial control



ITS initiatives in Israel

(7) Fleet Management Systems

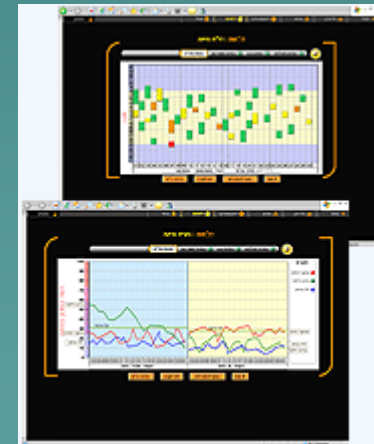
- On-board unit: GPS, Can-Bus, Cellular modem
- Back Office command and control program
- Logistics, maintenance, safety, security
- More than 10 service suppliers
- Dozens of fleets equipped
- Many thousands equipped vehicles





Electronic Driver's assistant

IVDR for fleet safety management

- OBU: GPS, accelerometers (x,y), cellular modem real-time trans.
- Measures speed and accelerations, determines “excessive” maneuvers
- Safety officer interventions
- Large scale field operational test: 2 service suppliers, 900 vehicles in 5 organizations



ITS-eSafety initiatives in Israel

- On-going **eSafety R&D program**, hosted by the Ministry of Science and Technology (Calls administration)
- **Excellent research and development base** in many relevant technologies, but only small “islands” eSafety dedicated
- R&D examples: Mobileye,  Roadeye,  “Aider” (eCall) EU FP5 project
- “eCall” service marketed commercially

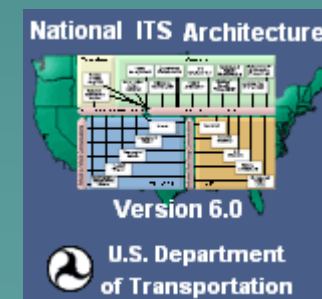
Automatic Safety Cameras System

- speed and traffic signal (red-light) cameras
- Currently about 70 wet film units
- Projected: up to 300 fixed units Automatic digital cameras remotely operated
- Pre-Qualification call for proposals planned for 2007
- EU project VERA I and II as model for system type approval



Towards national ITS policy

- **National ITS framework architecture**
 - adaptation of the European ITS architecture (FRAME) or US DOT
- Coordination of separate ITS specialized efforts into a coherent **ITS policy**
- **Road map** for ITS-eSafety R&D and implementation program
- **ITS standards** expert committee: the Israeli Institute of Standards
- **ITS-Israel** association first steps

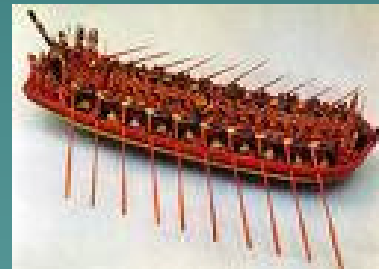


EU – Israel cooperation in ITS-eSafety

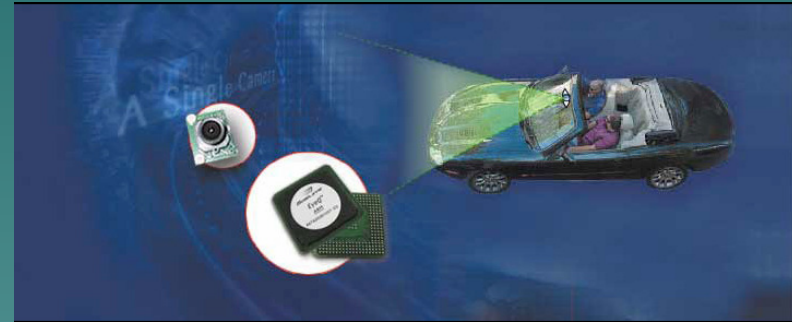
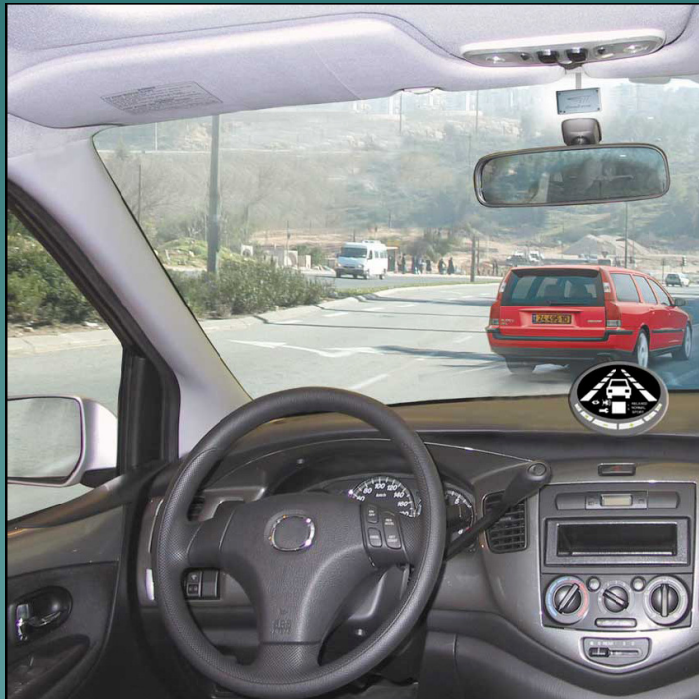
- Israeli participation in European forums
- Seminars and workshops
- DG Enlargement TWINNING mechanism



Alternative transit modes



Mobileye Forward Collision and Lane Departure Warning



Roadeye 77 GHz radar for ACC

