



ITS deployment strategies based on pilot project in developing countries

Karaj Tehran Corridor: an Iranian example

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Summary

- Iranian context
- ITS in Iran
- Selection of a pilot project: Tehran-Karaj
 - ▶ Corridor characteristics
 - ▶ Methodology for developing the ITS project
 - ▶ Main components of the ITS pilot project
 - ▶ Organisational aspects
- Future steps
- Conclusion

Iranian context

- Large cities:
 - ▶ Greater Tehran: 10 Mio.
 - ▶ Mashad, Isfahan, Tabriz,
- New constructions, but ...
- Traffic problems increasing





ITS in Iran

- Started in 92:
Tehran TCC
- Advisory radio,
speed
enforcement,
- CCTV, VMS, ..
- Webcams,



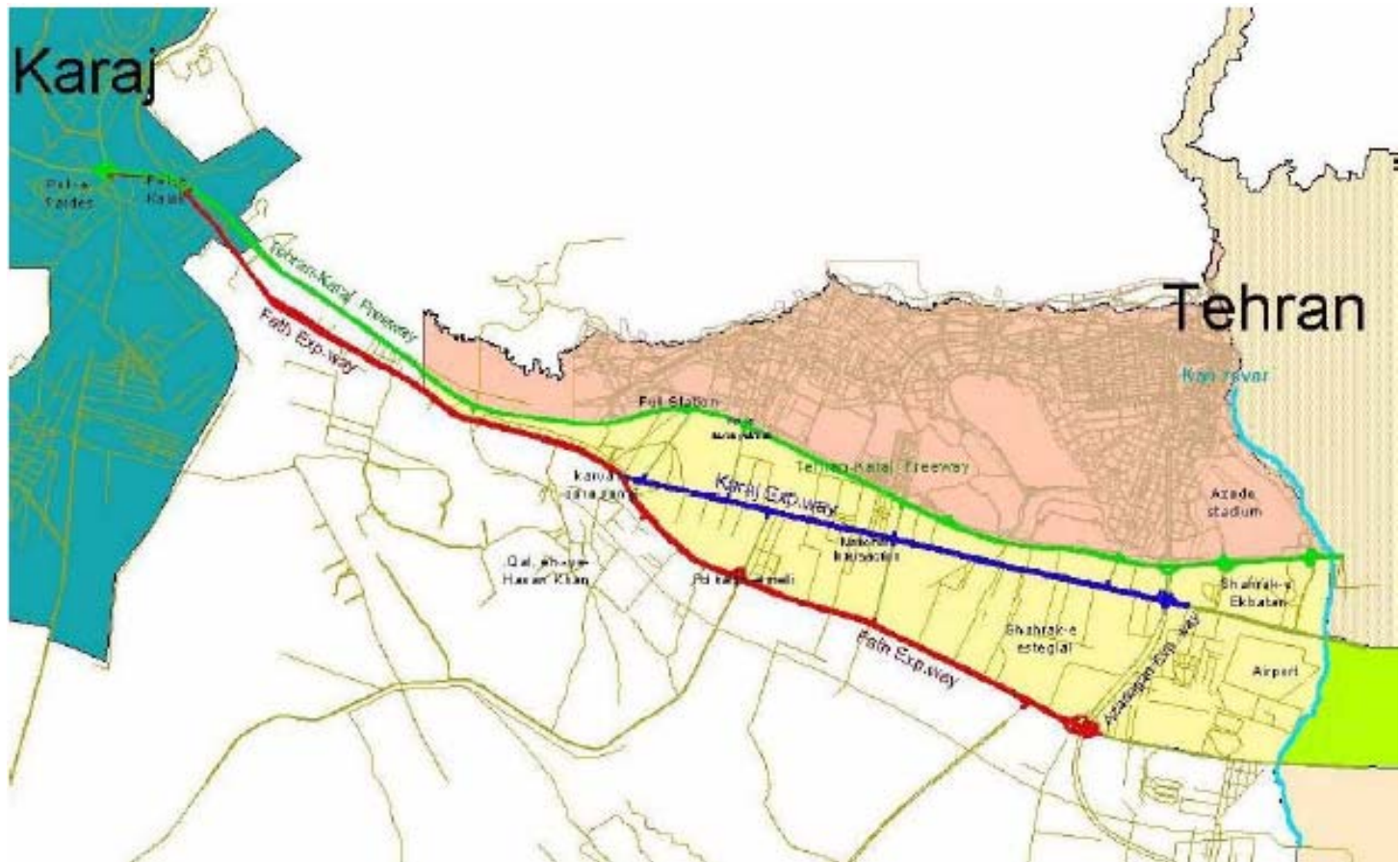


ITS in Iran

- 2002: decision taken by the Ministry of Road & Transportation to develop ITS
- 2 options
 - ▶ 1 : national strategic plan first and then deployment
 - ▶ 2 : pilot projects first in order to learn at local level and then build at national level
- Second option was preferred: better involvement of stakeholders
- Selection of a suitable pilot project: Karaj-Tehran



Karaj-Tehran corridor



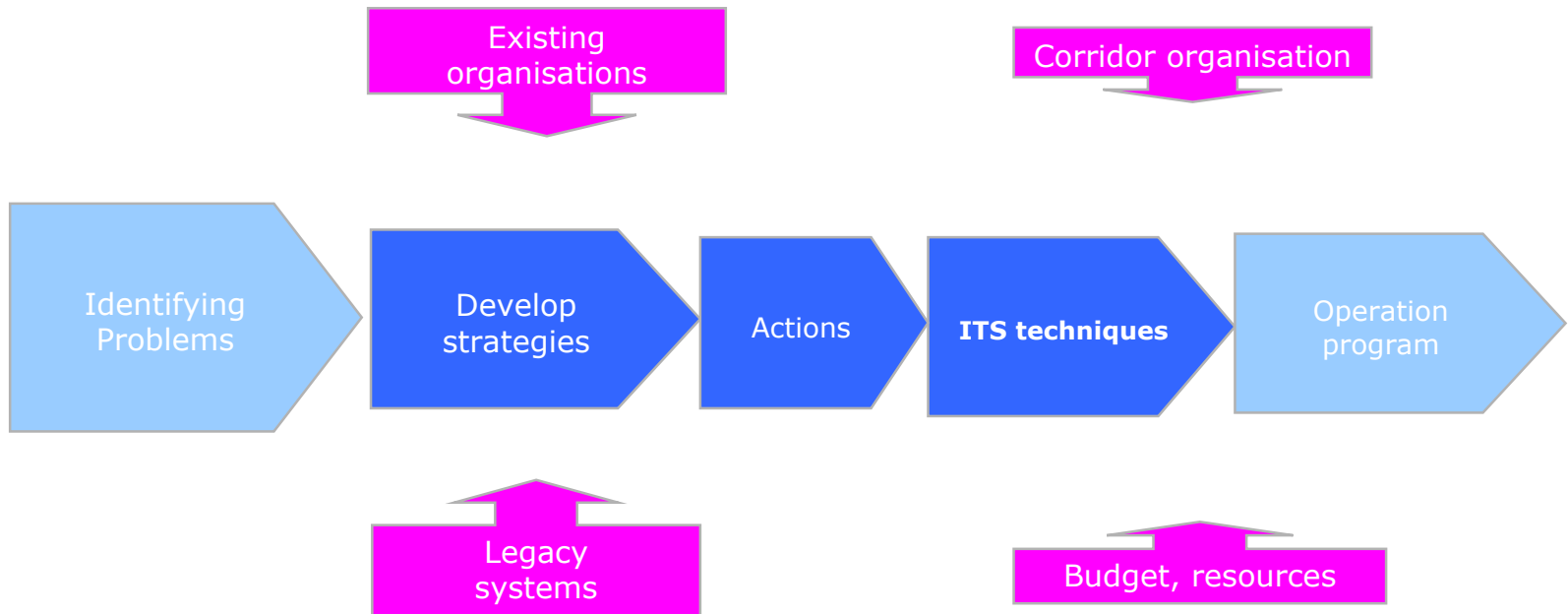


Corridor characteristics

- A strategic link between Tehran and Karaj
- 3 road axis: Karaj freeway, Fath expressway and Makhsus expressway
- But also a multimodal corridor;
 - ▶ Metro line between Karaj and Tehran
 - ▶ Buses, taxis,..
- Many difficulties: safety, congestion problems



Methodology for developing the ITS project



Usage of PIARC ITS Handbook recommendations (2000)
and Network Operation handbook



Methodology: main steps

- Data collection: traffic counts, surveys, accident analysis, generation of GIS map (1:2000), perimeter, identification of stakeholders = Metra in 2003
- Site visits and interviews of stakeholders (ISIS and Metra : June 2004)
- Develop strategies, presentation during first workshop with stakeholders: ISIS



Main problems

- Safety:
 - ▶ Drivers' behaviour: illegal stops, driving on the emergency lane, speed, waving, short headways, ...
 - ▶ Pedestrians,
- Congestion
- Road characteristics
- Organisations





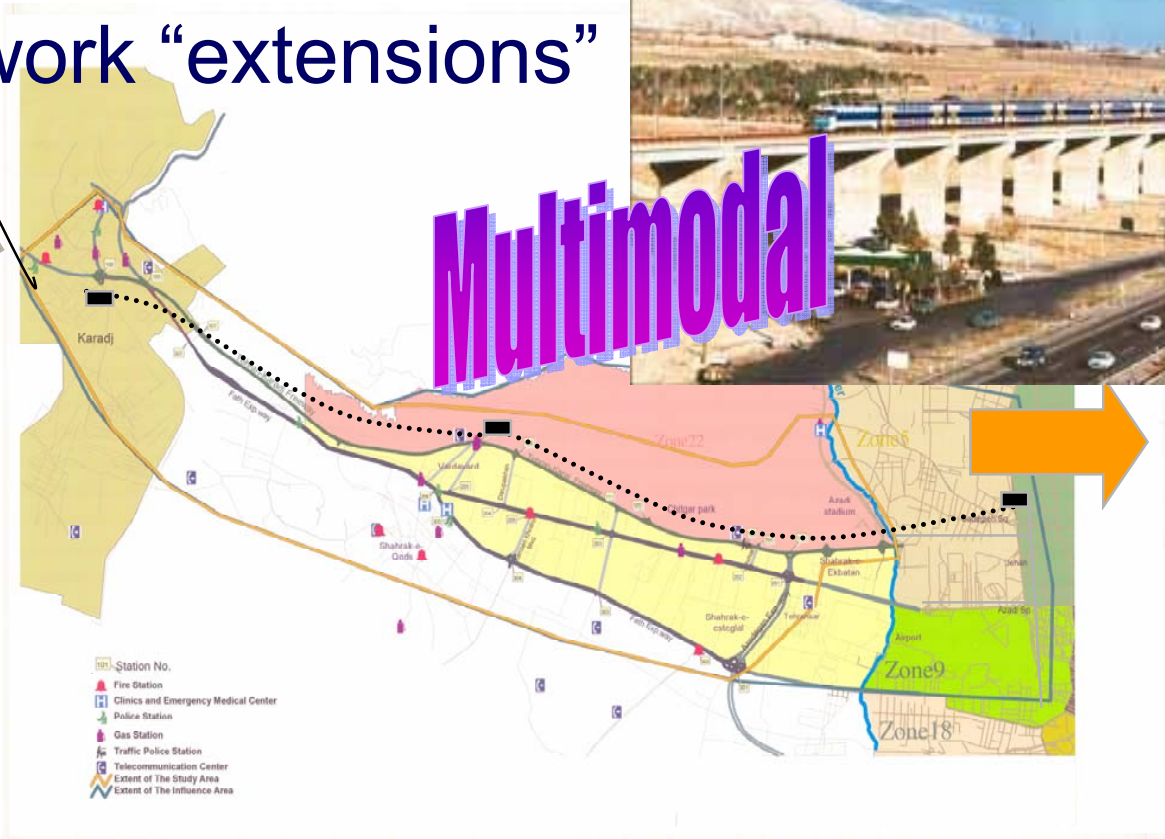
Methodology (cont'd)

- Develop strategies
- Identify actions meeting objectives
 - ▶ Safety
 - ▶ Efficiency
 - ▶ User information
- Propose ITS techniques for implementing actions
- Presentation during a 2nd Workshop in July 2004 (ISIS)
- Finalisation (general spec's for ITS project)



First recommendations

Network "extensions"





Main Components of the ITS project

SAFETY

- Traffic monitoring
- Automated enforcement
- Automatic Incident detection
- Quick and efficient intervention

EFFICIENCY

- Traffic flow optimisation
- Ramp metering
- Rerouting traffic
- Lane changing
- Co-ordination of roadworks

Traffic Management Centre

USER INFORMATION

- User warning
- Pre-trip information
- On trip information
- Support to modal shift



ITS Techniques

TMCs

Collect data

Action on traffic

CCTV

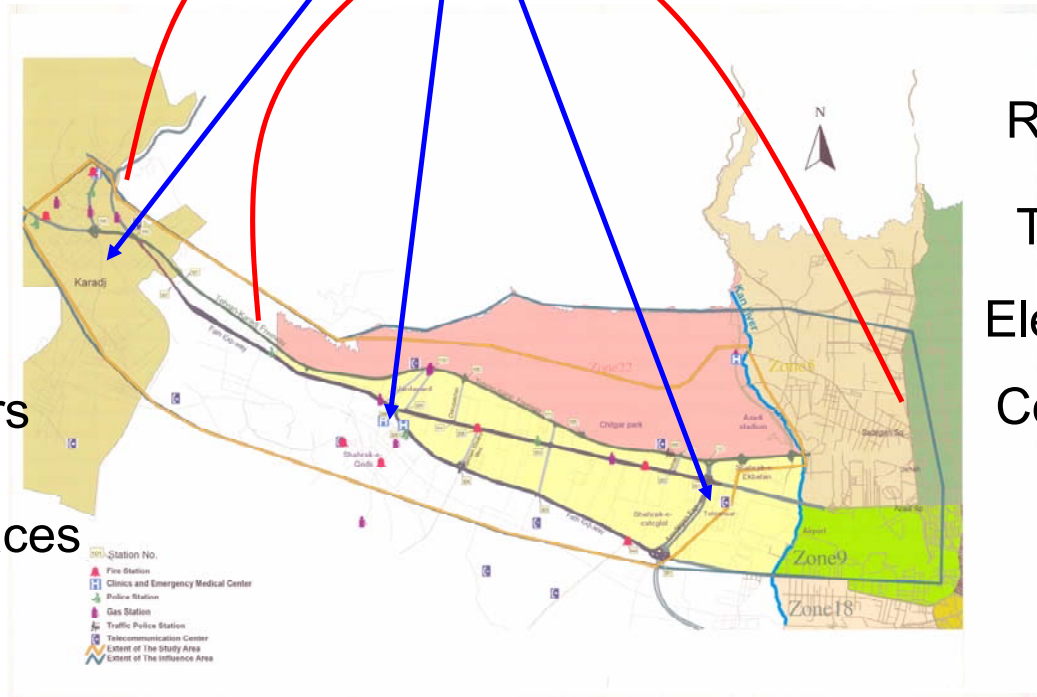
AID

Speed camera

WIM, loops

Weather sensors

Partners interfaces



VMS

Ramp metering

Traffic lights

Electronic panels

Cooperation with

Partners



Some examples

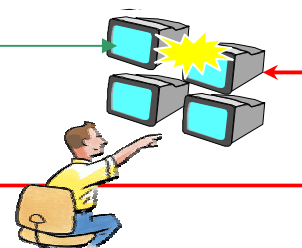
Automatic Incident Detection



Safe and
Intelligent
Stopping areas

Video-surveillance

Video
Detection
System





Organisational aspects

- General rules:
 - ▶ Don't do at an upper level what can be done more efficiently at a lower level
 - ▶ But travel is by definition a movement: travellers ignore administrative borders and limit of competencies
- Organisation of Traffic Management has to be balanced between these two contradictory rules and the specific traffic patterns



Organisation of traffic management

- Incident handling, patrolling, enforcement, assistance to motorists:
 - ▶ Local level supervised by upper level when necessary
- Driver information, traffic control, network monitoring:
 - ▶ Network level according to traffic patterns (O/D matrices, e.g. Tehran Karaj corridor) + exchanges with neighbours
- Wide area driver information, large network control, co-ordination of various network
 - ▶ Regional level or metropolitan area level + co-ordination
- National driver information, traffic management policy:
 - ▶ National level + real time co-ordination when necessary



Ingénierie du
Trafic et des
Systèmes d'exploitation

Metra Consulting Eng Co





Future steps for implementation

- Need for co-operation...
 - ▶ Between the actors:
 - TMC to be operated with multidisciplinary team
 - TMC linked with other operating organisations (neighbouring TMCs, regional TMC, public transport organisations...)
 - TMC linked with emergency services
 - TMC linked with information service providers, telecom operators
 - ▶ with the users through new services:
 - the key for changing drivers' behaviour stands in a good balance between the offer of new services and enforcement of the rules



Conclusion

- ITS implementation in economies in transition and developing countries
 - ▶ Organisational problems are of major importance
 - ▶ Technology cannot solve all problems: change in driver behaviour is a prerequisite
- A way to reach this objective: good balance between new services (ITS) and enforcement (carrot and stick !!)
- Good cooperation between local actors and ITS specialists is a key for success