Intelligent Transportation Systems
NRA Experience

David Laoide-Kemp
ITS Project Manager
National Roads Authority
NRA’s Experience of ITS

- The “Big Shift”
- ITS Experiences
- National Roads Management
- The Future
The Big Shift: a definition:

“Big Shift”: the change in emphasis within a National Road Administration from road building and maintenance towards road network operations and the consequent change in organisation and process required to deliver high quality network services.

ITS: a solution?

Users expect a quality service from the road network operator and the whole community will benefit from an efficient network. Intelligent Transport Services (ITS) will play a major role in network management and operation. To deliver service oriented network operations the roles and tasks for National Road Administrators will change.

CEDR Telematics Subgroup
The Big Shift

Where are we?:

- Some countries are already there. ITS systems and solutions are being deployed on a large scale.
- The NRA in Ireland is still in the middle of a National Road Building Programme, but its role is beginning to shift.
ITS Experiences

ITS Initiatives
- STREETWISE – UK & ROI Region
- INSTANT – Dublin to Belfast corridor
- Other Initiatives – Local Authority initiatives, Department of Transport, ITS Ireland, ITS Conferences etc.
ITS Experiences

- VMS on M50
- AVL – journey time estimation prototype (TURAS)
- CCTV monitoring on M50
BUT....
ITS Projects concentrated on standalone & mostly unconnected initiatives

WE NEEDED TO HAVE A PLANNED STRATEGY
Network Conditions

Main problems in GDA
- High volumes
- Peak congestion
- Incidents

2003 Data
Monitoring Study - 2003

- Study the monitoring requirements for the TERN in the Greater Dublin Area
- Technology review for monitoring
- Recommendations – High Quality monitoring along high volume road sections
High Quality Monitoring Study (2003)
N7 Pilot Travel Time Scheme

- Pilot traffic monitoring and motorist advisory system
- Rathcoole to M50 – 10 km
- N7 – high traffic flows – 70,000+ AADT
- “Red Cow” N7/M50 – busiest interchange in Ireland (over 140,000 vehicles per day)
N7 Pilot Travel Time Scheme 2003
N7 Pilot Travel Time System
3 Crucial Components

1. Management - Active Traffic Management System (ATMS)
2. Monitoring - Field Equipment – gathering data
3. Dissemination - Information Services
1. Management: ATMS User Requirements

- Initially autonomous
- Travel time advisories
- Full functionality possible – advisory responses
- Communication through DCC network
ATMS - GIS based GUI

VMS message display

VMS Icon

Vehicle Detector Station Icon

Current traffic data
2. Monitoring:
Field Equipment

- Tender – microwave radar detectors
- EIS RTMS with wireless comms
3. Dissemination: Information Services

- Roadside VMS – Variable Message Signs
- Web presence – dedicated website
- SMS/ Text service – free (for limited period)
- E-mail service
Information Services - VMS

- Information provided on 2 VMS
Website – VMS pop-up

ACCIDENT AHEAD
Website – Event Report (Incident)
Website – Event Report (Queues)
Website – Event Report (Roadworks)
Website – CCTV
Website – Current & Planned Events
Information Services – SMS/E-mail

- Register via website
- Two types of alerts
  - Traffic alerts
  - Scheduled
Current status of N7 scheme

- Site acceptance completed during summer 2004
- Thorough advanced user group testing
- Launched Early 2005

NB Response from drivers has been very good, but system is limited in its geographical scope (8km in one direction)
Where Next?

Increased Coverage

INSTANT!
INSTANT

- Partner with Northern Ireland Roads Service
- 2000 - Scoping Study – Secured Funding from EU – looked at potential cross-border initiatives in relation to traffic control and management.
- 2001/02 – Feasibility Study
- 2002/03 – Design Study
- 2004 – Implementation Plan/ INTERREG IIIA funding
INSTANT M1 Deployment
2004-2006

- Utilise same ATMS and TIS systems as N7
- Phase 1 – 2004
- Phase 2 – 2005/2006
- 11 Strategic VMS
- 40+ Incident Detection Stations
- 13 ANPR Locations
- 16 km Fibre Optic extension
- 6 CCTV
- ~90 km coverage
INSTANT M1 Deployment – Phase 1
NRA ITS Deployment
Summary for end 2006

- M50 - VMS Management (Dublin City Council)
- N7 – Monitoring and VMS Management – possible extension under review
- M1 – Monitoring and VMS Management
- Active Traffic Management System (ATMS)
- Traffic Information System (TIS) [www.nratraffic.ie](http://www.nratraffic.ie)
- Approx 130 km coverage
- NB Dublin Port Tunnel - 2006
NRA - Network Operations & Management:

- Network Operations Unit is being established
- Unit to develop and maintain Network Operation policy (including ITS)
- Manage the maintenance and operation of the network as a “network”
NRA ITS Experience

Where Next?

- National Standards for ITS Infrastructure (monitoring, communication, VMS etc)
- Communications Infrastructure
- ITS Deployment Plan
- ITS Maintenance Agreements
- Network Operation Strategy
- Interface with Urban TCC and Public Transport (Park & Ride, QBCs)
- National ITS Forum – ITS Ireland
- National ITS Strategy
NRA ITS Experience

Where Next?
Highways Agency M42 ATM Video
Highways Agency
M42 ATM System

http://www.highways.gov.uk
Search for “Active Traffic Management”
In Summary
National Roads Authority

- Major Roads Building Programme
- Recognition of start of “big shift” towards Network Operations
- Continued deployment of ITS systems on high-volume/strategic corridors
- Development of a Network Operations strategy
- National ITS Strategy
Intelligent Transportation Systems
NRA Experience

Thank You

David Laoide-Kemp
ITS Project Manager
National Roads Authority
Ireland
dlkemp@nra.ie