Bonneagar Iompair Éireann
Transport Infrastructure Ireland

The Motorway Operations Control Centre – Watching Over Ireland

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Motorway Operations Manager - TII

The Motorway Operations Control Centre

- Location : Tunnel Control Building, East Wall Road, Dublin.
- Combined motorway and tunnel control centre, 24-7 operation.
- Operator: Egis Road & Tunnel Operations (ERTO)
- Construction : 2019-2020 part of the enhanced Motorway Operation Services (eMOS) project
- 37 control room staff for Motorway & Tunnel operations.
- Peak Hour: 8 control room staff on Duty

The Motorway Operations Control Centre

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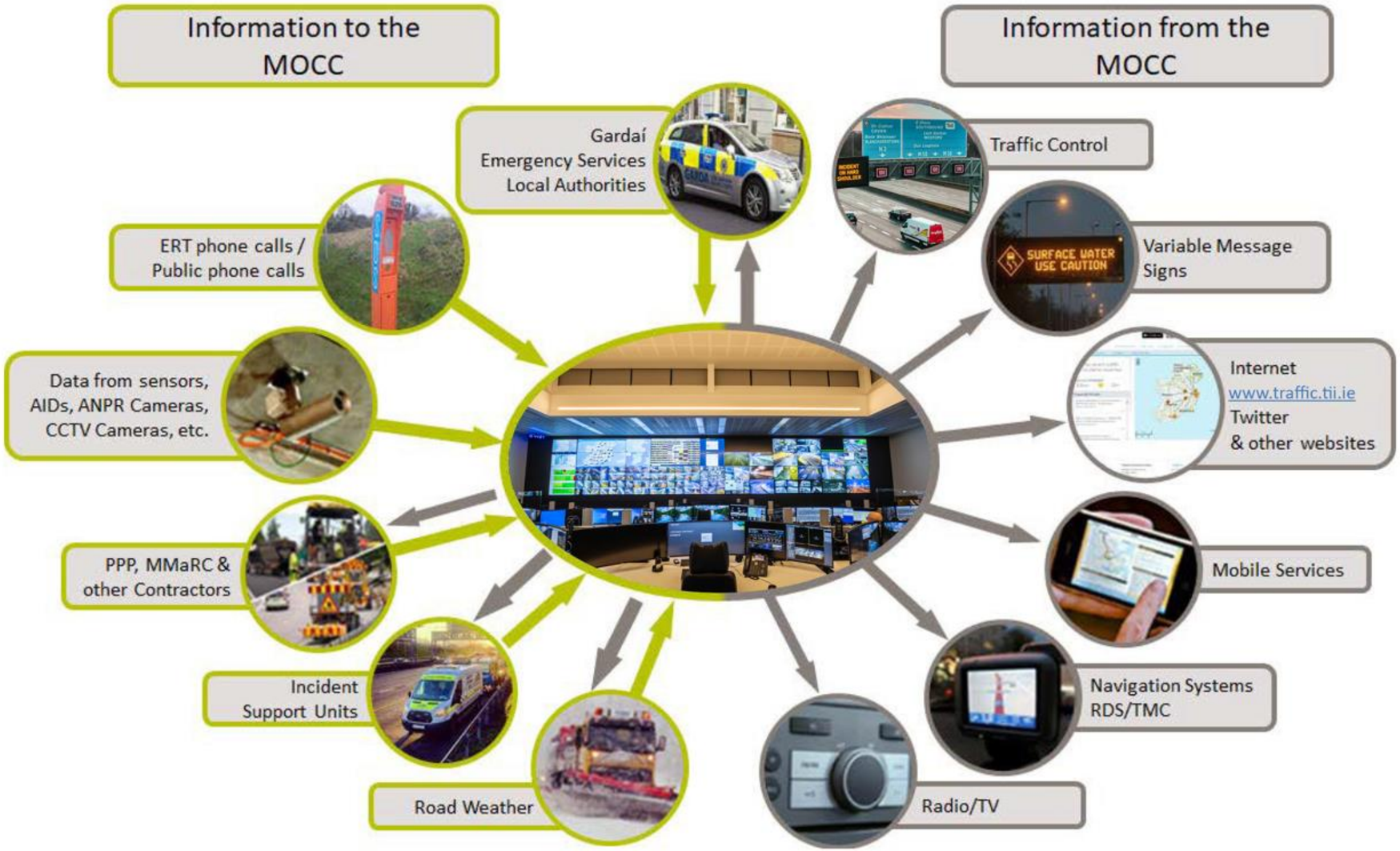
- Constructed as part of an upgrade and extension to the existing Tunnel Control Building
- Equipped with latest technology for real-time monitoring of the Motorway network, Dublin & Jack Lynch Tunnel
- A video wall of 3m high and 15m wide, displays real-time feeds from the motorway CCTV camera network, Tunnels and others ITS systems.

- Dublin Tunnel – Opened 2006
  - 4.5km long comprising Two separate bores, 2 lanes per bore
  - 19 Pedestrian and 4 vehicle Cross Passageways,
- Jack Lynch Tunnel – Opened 1999
  - 610m long, two separate driving bores, 2 lanes per bore
  - Central pedestrian passage,6 emergencies exits to central bore
  - Immersed tube tunnel and integral part of the N40 southern ring road of Cork
- Control of Tunnel Ventilation, Fire Safety, Over height detection, Traffic Control etc via Supervisory Control and Data Acquisition (SCADA) System

The Motorway Operations Control Centre – Communication Hub

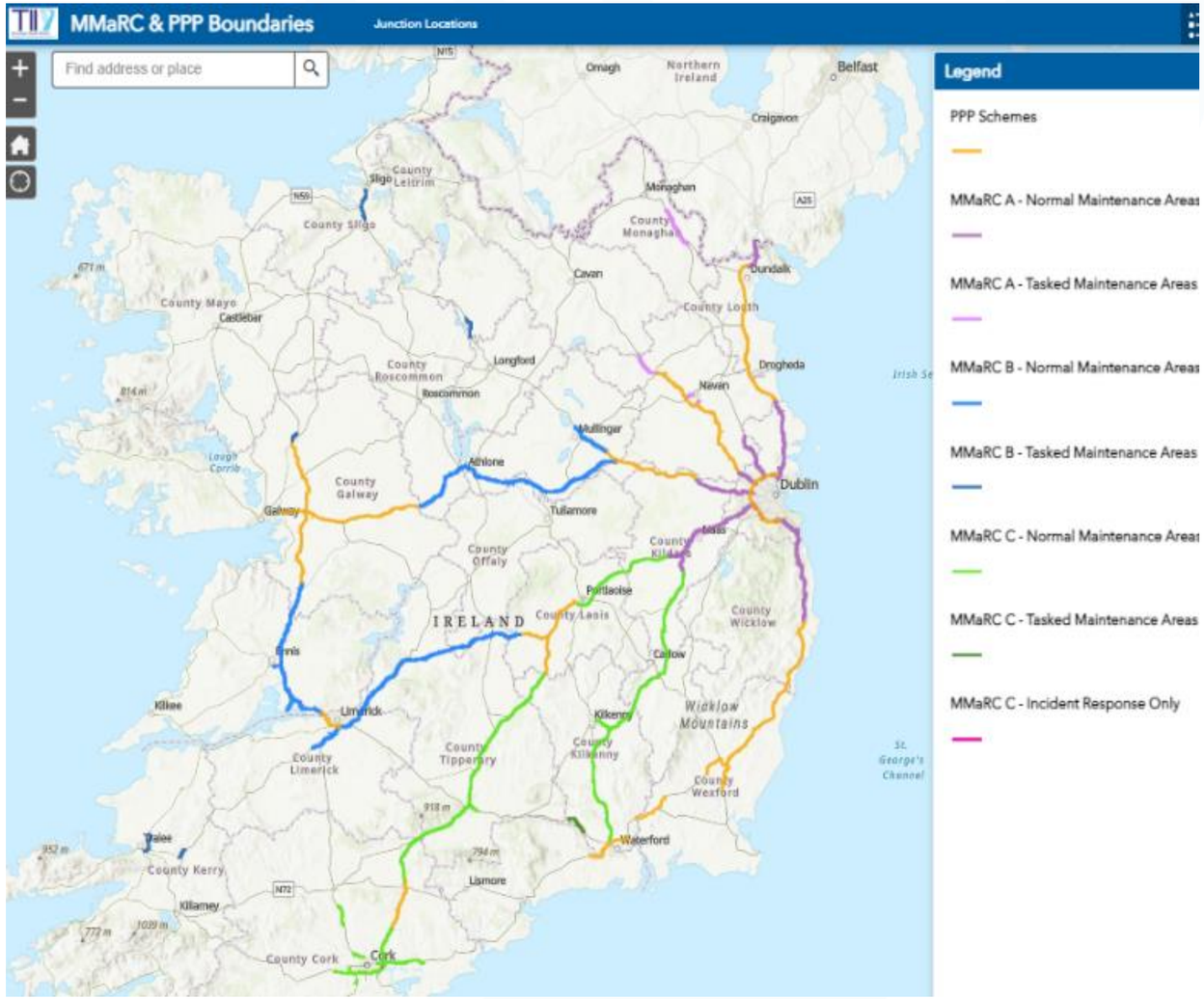


MOCC Coordination – Motorway Maintenance and Renewals Contracts & PPP

- MMaRC (Motorway Maintenance and Renewals Contracts)

  Area A – 173km, Area B – 257km, Area C - 330km

- 13no. **PPP** roads plus 2no. Motorway Service Area PPP's - Approx 470km
- MMaRC & PPP have Incident response requirements, response times, coordinated from control centre



The Motorway Operations Control Centre – National Responsibility

MOCC national responsibilities include:

- Monitoring the vehicle journeys of over 1300 km of Motorway/Dual carriageway, utilising Advanced traffic management systems (Including the new NIMS system), CCTV, TMU, AID, Google maps etc
- Central hub for communication for incident management and oversees response to all incidents on the network
- Gathers & distributes relevant information to assist the road user and other stakeholders, including for CRI alerts
- Use of Variable Message Signs (VMS) to inform the public of information which may affect their journey time.
- Assist in providing information for weather warnings, Garda and RSA 'Slow Down' campaigns.
- Answering the Emergency Roadside Telephone (ERT) network – 1600 phones including Tunnel phones
- Customer care service where queries from the public are processed and distributed.
- Liaison with emergency services and operational partners
- Management of TII traffic social media account
- Allows for the safe and efficient management of the national roads network

The Motorway Operations Control Centre

- MOCC dispatch the M50 Free Vehicle Recovery Service
  - Removes vehicles to a point of safety off the Network, reducing congestion and increases motorist safety
  - 3939 vehicles recovered in 2022 from breakdowns, collisions etc.
  - Average Response time 12 minutes
- MOCC is responsible for overseeing the Road Space Bookings applications for Maintenance & Renewals.
  - This ensures that work activity on the network is planned, controlled and coordinated.
  - Manages access to the Network & avoids roadworks congestion and clash's
  - Communication of bookings, approved, closed, rejected. Approx 500 RSB applications per month
  - Manages Approx 45 Wide Load (abnormal) applications per month ensuring no conflict arises with works
  - LA permit conditions require hauliers contact the control centre,
  - Safety benefits for the public and road workers and journey time reliability for hauliers.

M7 pilot scheme - Average Speed Safety Camera

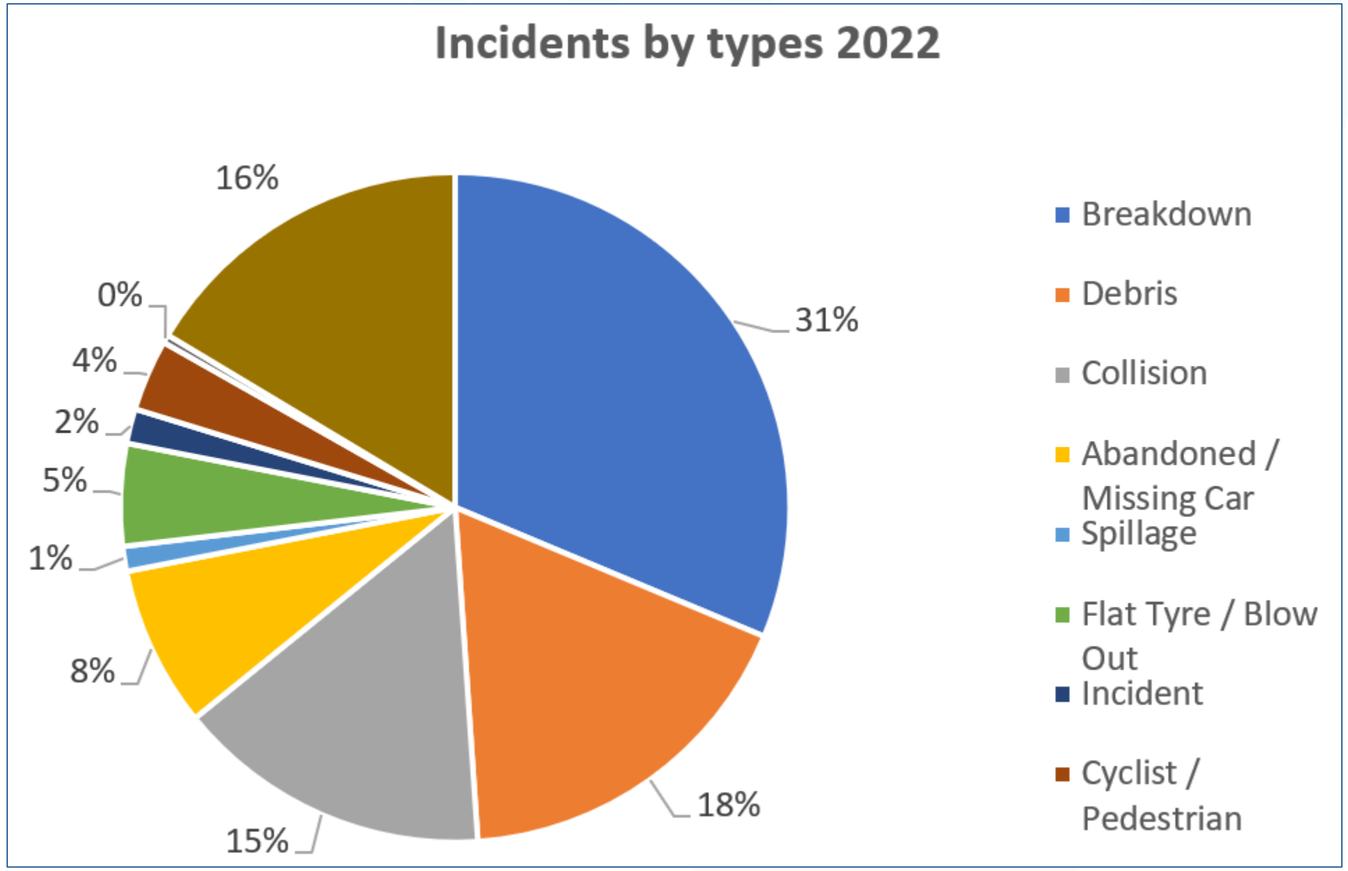
Following on success of Dublin Tunnel system

- M7 pilot mainline motorway system, Nenagh – Birdhill
- Engineering, Education, **Enforcement**
- Study of historical data on the corridor
- Speeding coupled with inadequate reductions in speed in adverse weather conditions
  - Additional micro-climate issues in locality
- Historical compliance in region of 60 – 70%
- Managed from Tunnel Control Building, in association with An Garda Siochana
- Less than 1% receive penalty points
- Renewed interest in ASC systems in recent weeks.

The Motorway Operations Control Centre

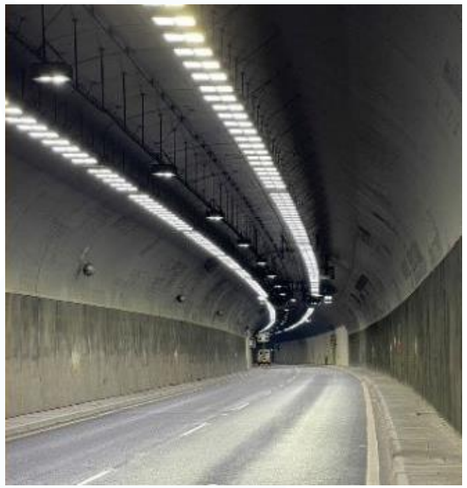
Headline Statistics

- 11,891 incidents managed in 2022
- 1,937 collisions across the Network in 2022 (15% of all incidents)
- 764 Collisions on the M50
- Average of 8000 incoming/ outgoing calls to all stakeholders, public, ERT.
- This includes 400 ERT and 850 customer care incoming calls answered per month.



The Motorway Operations Control Centre

- 200 no. CCTV cameras on M50, M1, M4, N7, N40 etc
- Approx. 1500 no. Emergency roadside telephones
- 170 no. ANPR motorway cameras
- 125 AID (Automatic incident detection) sites
- Approx 120 no. Dublin Tunnel & Jack Lynch CCTV cameras



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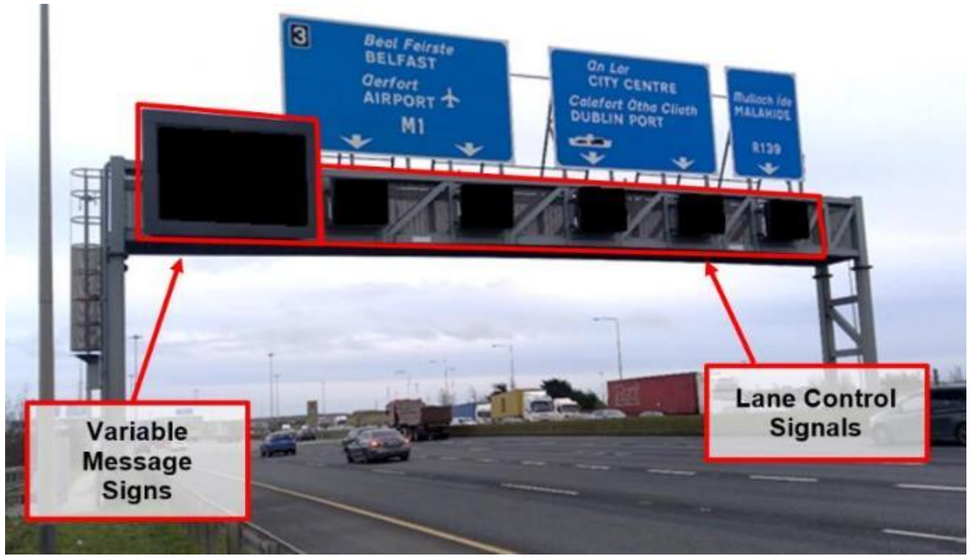
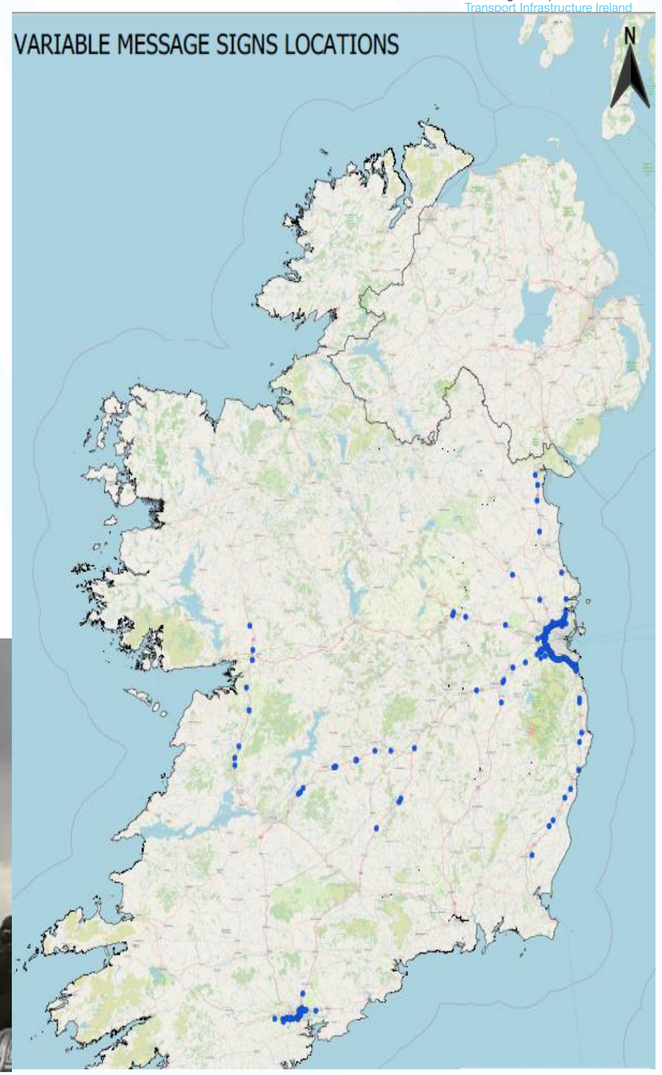


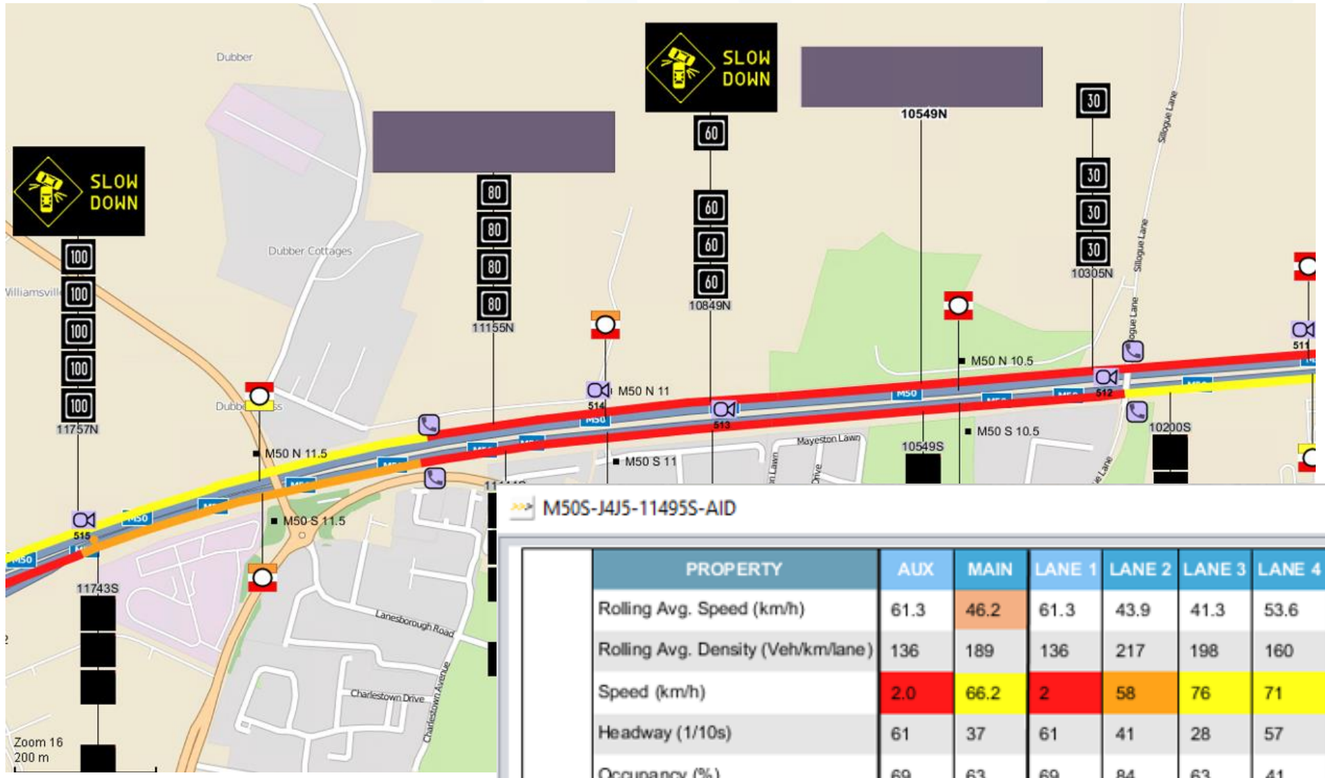


- Variable Message Signs – 225
- Lane Control Signs - 300

The Motorway Operations Control Centre - NIMS

- Network Intelligence & Management System (NIMS) - provided by Kapsch TrafficCom Ireland Limited:
  - NIMS provides advanced traffic management and connected mobility software technology. It provides the functionality to enhance the safety, increase information provision and improve road network reliability through the use of variable speed limits on the LCS and VMS.

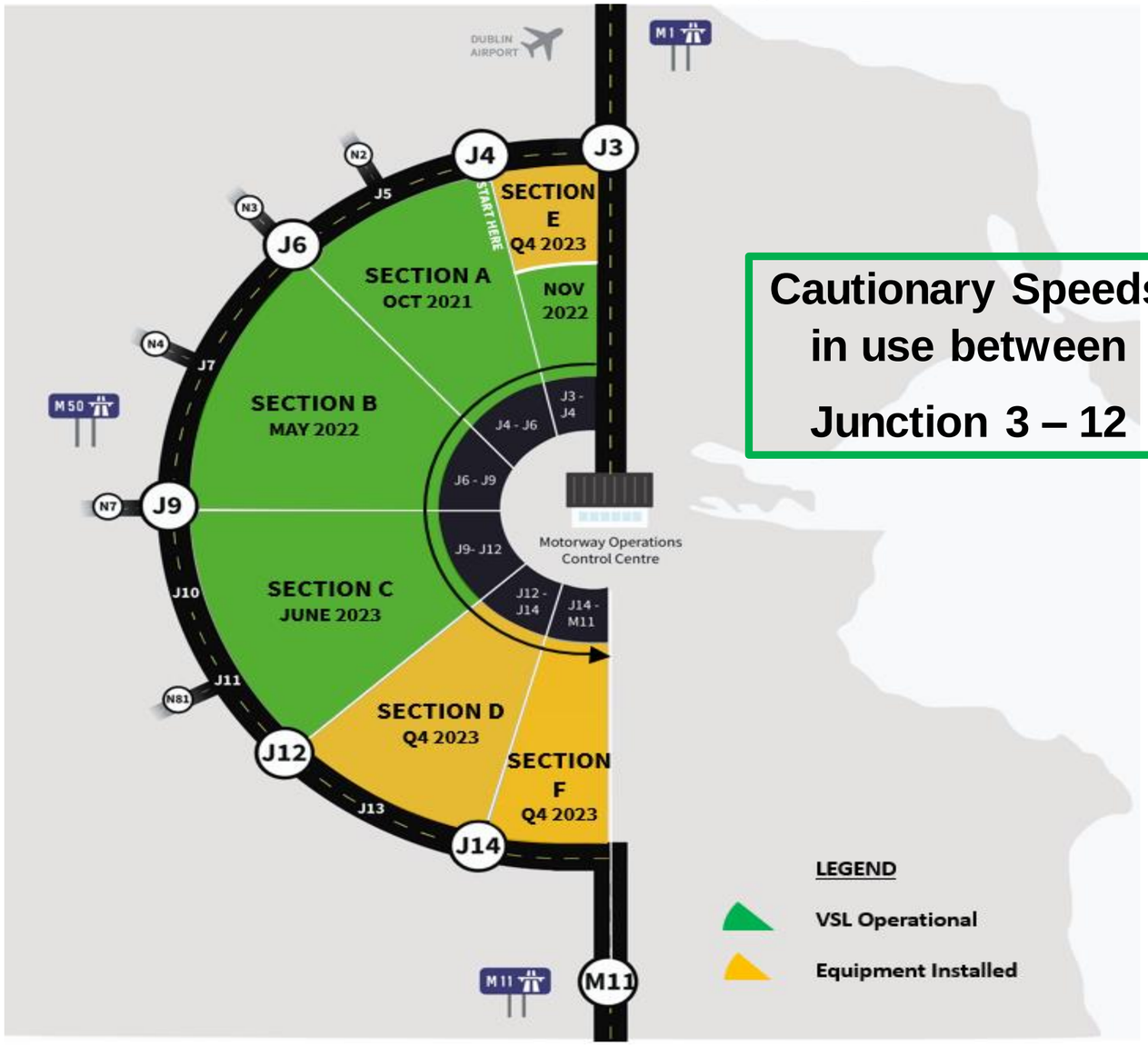
- NIMS services include:
  - management of traffic flow to deliver safe, stable and predictable journey times on the M50
  - coordination of incident responses with the emergency services and incident response units
  - capturing and disseminating traffic information to road users via a variety of mediums, including roadside variable message signs, social media and the TII Traffic website



M50S-J4J5-11495S-AID

PROPERTY	AUX	MAIN	LANE 1	LANE 2	LANE 3	LANE 4
Rolling Avg. Speed (km/h)	61.3	46.2	61.3	43.9	41.3	53.6
Rolling Avg. Density (Veh/km/lane)	136	189	136	217	198	160
Speed (km/h)	2.0	66.2	2	58	76	71
Headway (1/10s)	61	37	61	41	28	57
Occupancy (%)	69	63	69	84	63	41
Flow (Veh/h)	1,440	31,346	1,440	16,196	12,055	3,059
Length (dm)			94	54	73	25

The Motorway Operations Control Centre- NIMS



Cautionary Speeds in use between

Junction 3 – 12

CAUTIONARY SPEED LIMIT 120KM/H

CAUTIONARY SPEED LIMIT 100KM/H

CAUTIONARY SPEED LIMIT 80KM/H

CAUTIONARY SPEED LIMIT 60KM/H

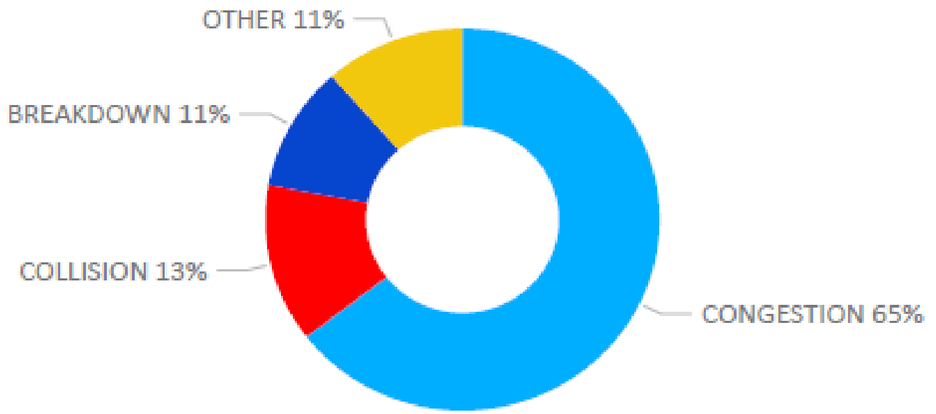
CAUTIONARY SPEED LIMIT 50KM/H

CAUTIONARY SPEED LIMIT 40KM/H

CAUTIONARY SPEED LIMIT 30KM/H

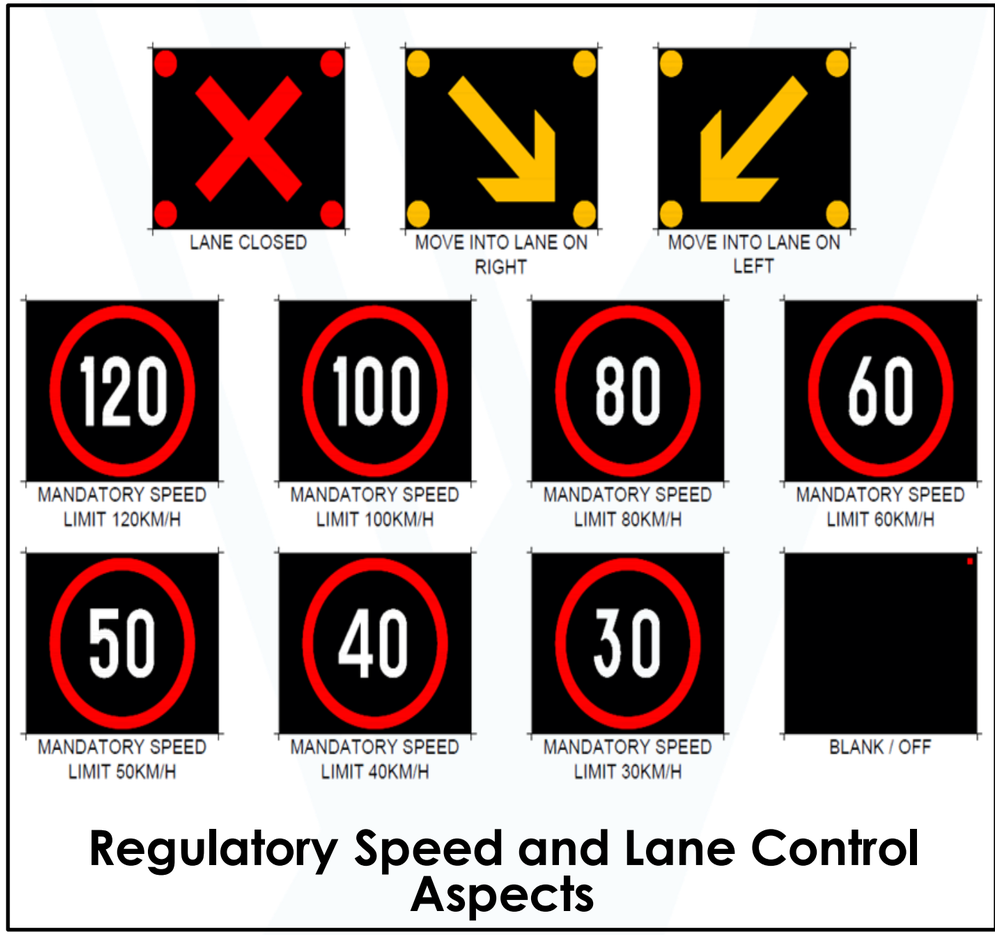
BLANK / OFF

WHY WAS SPEED REDUCED?



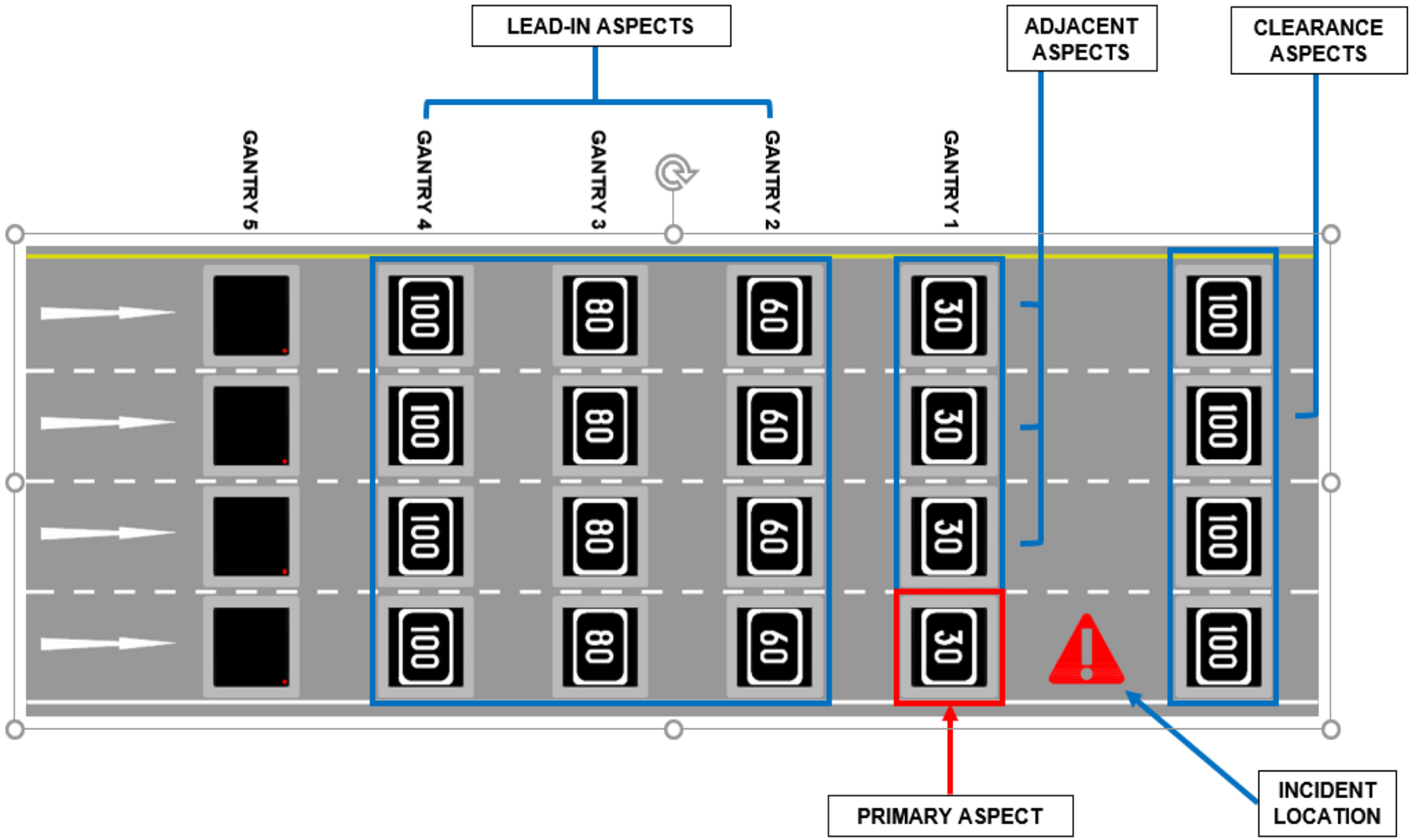
Roads Traffic and Roads Act 2023

- Signed by the President on 23rd June 2023.
- Introduces the concept of a *National Managed Road,* designated by the Minister.
- The Authority (TII) will be responsible for provision of Regulatory, Warning and Information Signs on *National Managed Roads.*
- The Authority will be responsible for;
  - Variable speed limits
  - Special speed limits
  - Speed limits at road works
- Once fully implemented this legislation will enable the use of 'Red X' and Regulatory speeds for the management of traffic on the M50.
- The Act will also allow road authorities and the Authority to setup and operate cameras and other data gathering devices on public roads.
- The Department of Transport are currently developing the necessary secondary legislation.

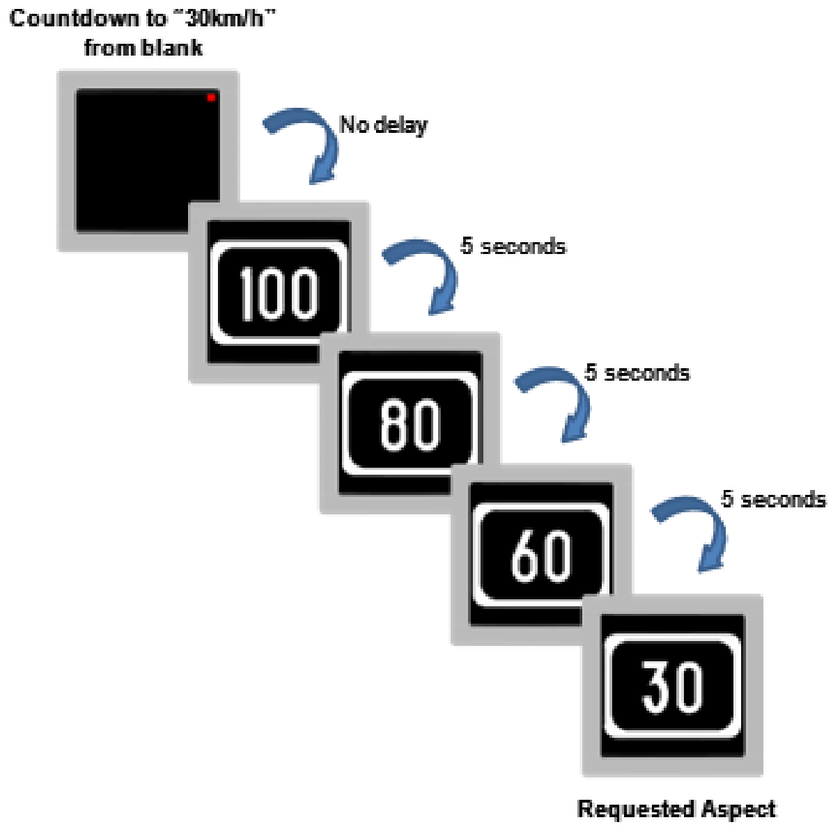


Regulatory Speed and Lane Control Aspects

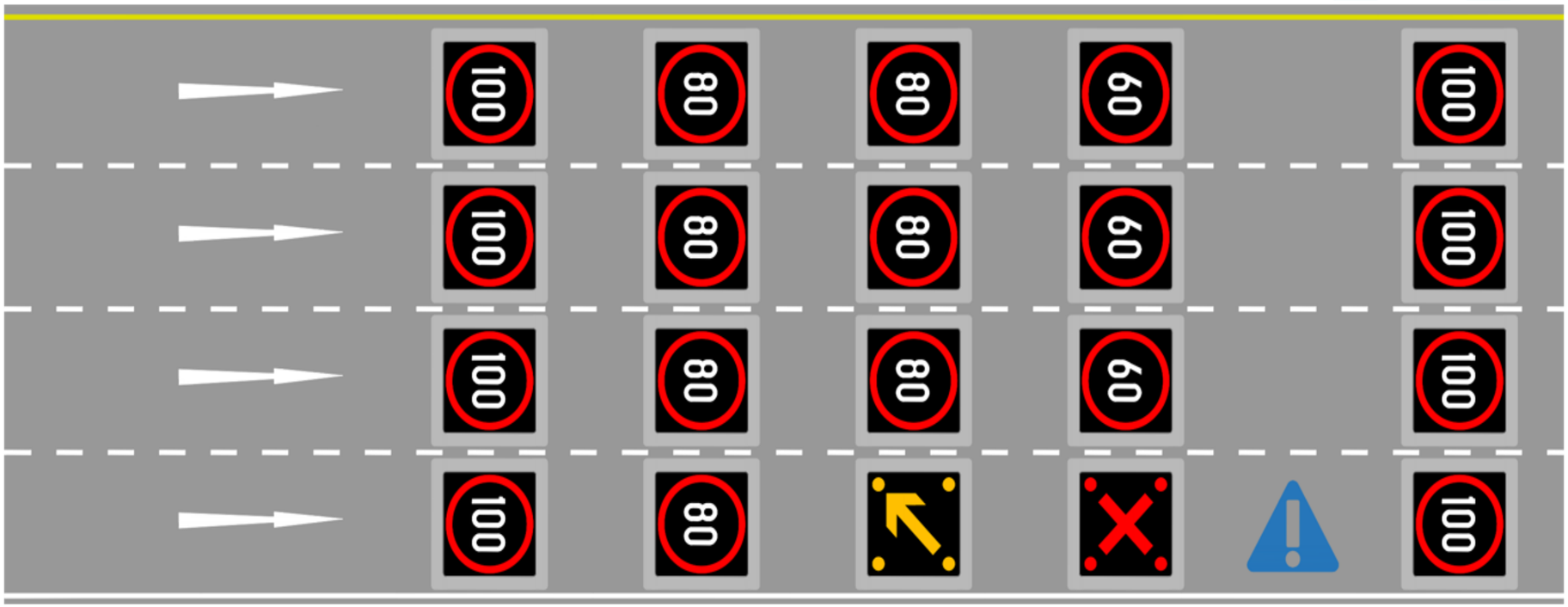
Typical Signal Sequencing Rule Pattern for Speed Management using Cautionary Signs



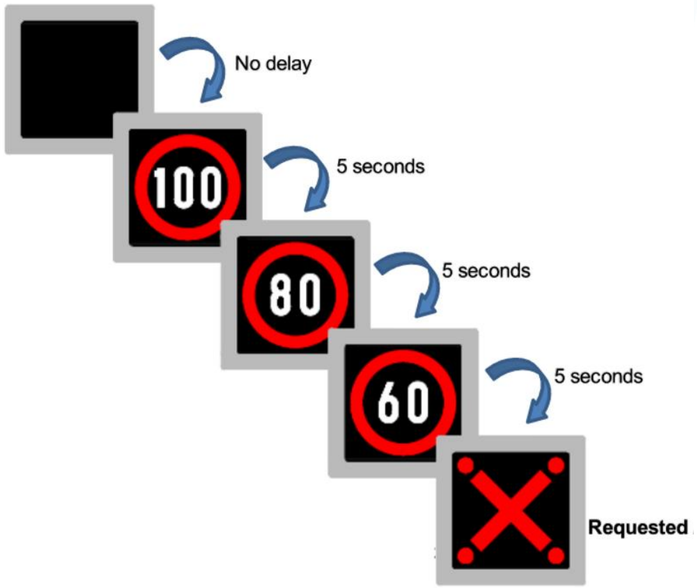
Countdown Sequence



Typical Lane Closure Pattern using Regulatory signage



Countdown Sequence for Lane Closure

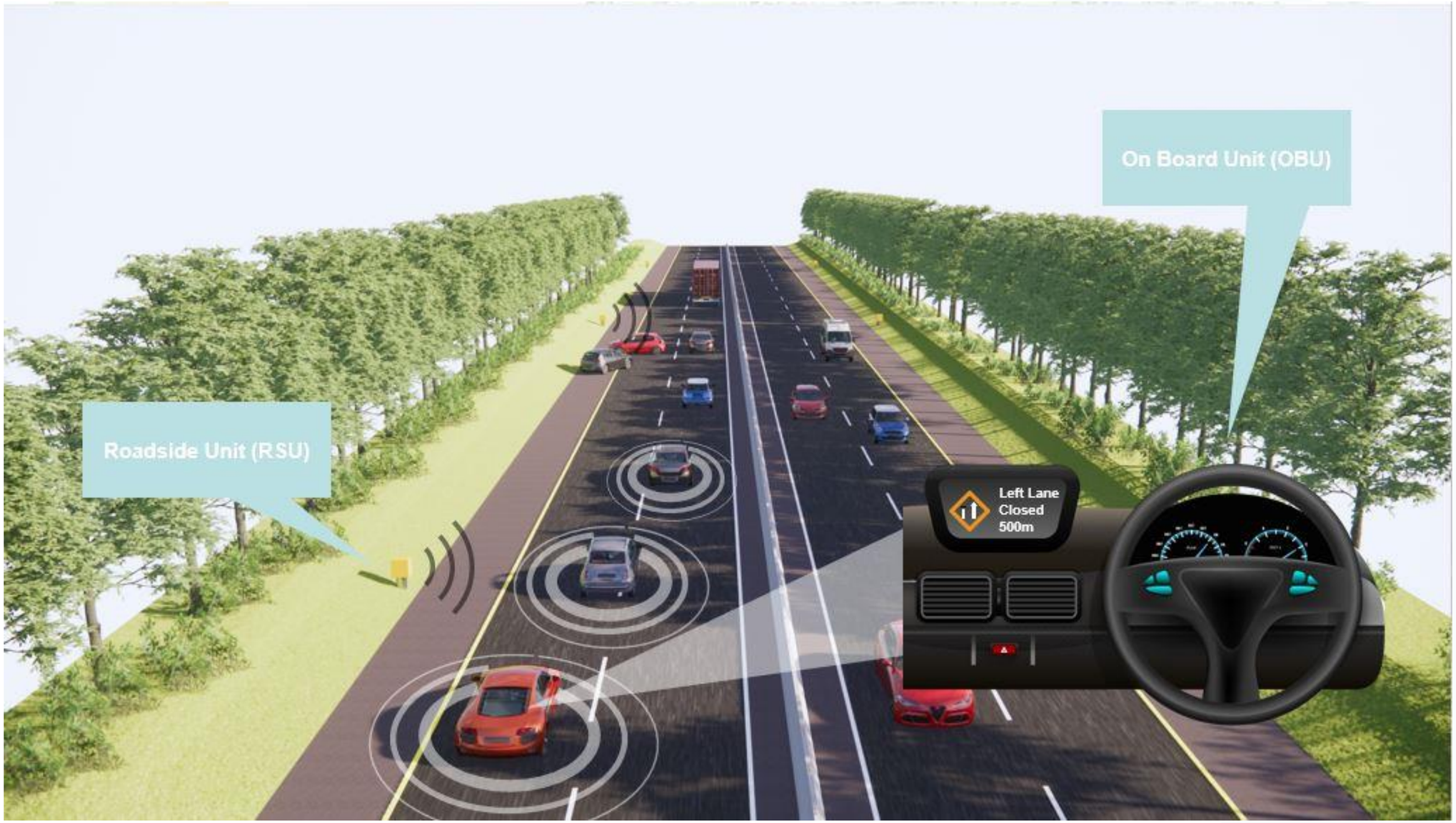


Note:
- Km/h to be removed
- Tweaking of sizing and flash pattern
- Lane Change Arrow colour changed

Setting can be:-
- Manual by an Operator
- Automatic by NIMS system
  - Using algorithms
  - Processing data received from the roadside – traffic lane speed data
  - Determines appropriate speed to display to approaching drivers on M50 via overhead signs

Incident with Intelligent Transport Systems (ITS)

Incident with Cooperative Intelligent Transport Systems (C-ITS)



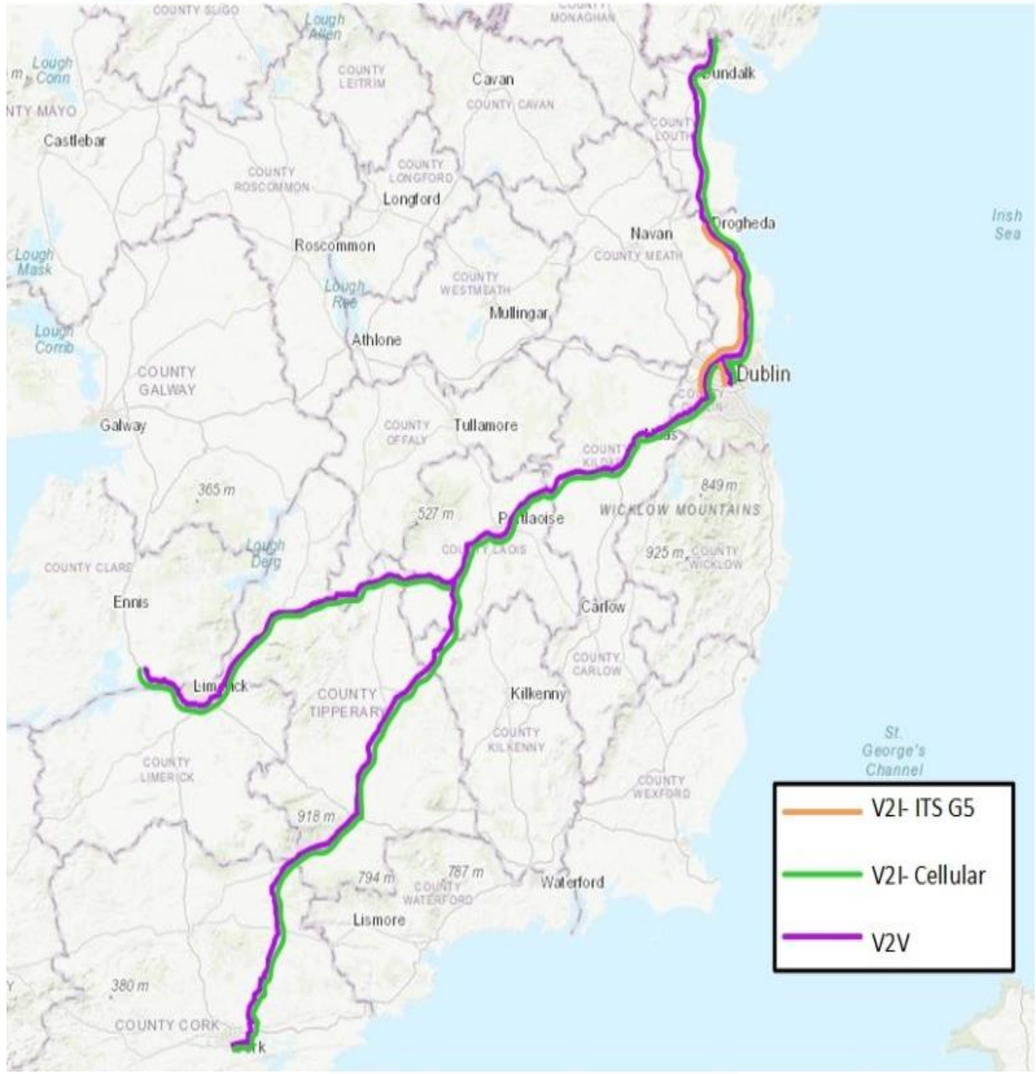
C-ITS Pilot

Key components:

- Route covers comprehensive TEN-T Network
- Piloting Urban/InterUrban C-ITS Services
- Seeking to Pilot Services where traditional ITS cannot reach
- Evaluation of Technology, Safety, Efficiency and Compliance impact
- Support new standards for Irish and wider EU deployment
- Representing Ireland at C-ROADs Platform

Year	Key Activities
2018	Design Concept
	Stakeholder Engagement
2019-2020	Procurement Planning, design and trial specification and network build C-ITS Development & Prototyping
2021-2024	Finalise Pilot regime and commence Road Trials Evaluation & Progress Outcomes

- ITS Ireland annual conference 5th & 6th October - Cork



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