



Department  
for Transport

# IWG on ITS 4<sup>th</sup> Meeting

## Connected Vehicle Corridors

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OFFICIAL

connecting  
people &  
places

# What is a connected vehicle?



## The UK perspective

There are already at least 3 million connected vehicles on UK roads, with opportunities for additional societal and user benefits from conventionally driven vehicles. Connected vehicles give immediate opportunities for productivity, congestion, emissions, safety and travel cost benefits, including smarter parking, more efficient maintenance of roads and reduced infrastructure costs.

Any vehicle that can communicate with other vehicles or infrastructure. For example, the vehicle could be a car, truck, cycle or motorcycle; the transmission could be cellular data, radio, or dedicated short range communications. The information could be presented to the vehicle occupants on a smartphone or integrated vehicle display screen; alternatively, it could be provided to the vehicle systems rather than the driver.

# What is a connected vehicle?



## The EU perspective

Today's vehicles are already connected devices, but in the very near future they will also interact directly with each other and with the road infrastructure. This interaction is the domain of Cooperative Intelligent Transport Systems (C-ITS), which will allow road users and traffic managers to share information and use it to coordinate their actions. This cooperative element is expected to significantly improve road safety, traffic efficiency and comfort of driving, by helping the driver to take the right decisions and adapt to the traffic situation.

“ On 13 March 2019, the Commission adopted a delegated regulation on specifications for the provision of C-ITS, supported by an impact assessment. The delegated regulation did not enter into force following an objection by the Council of the European Union. ”

# The A2M2 Connected Corridor

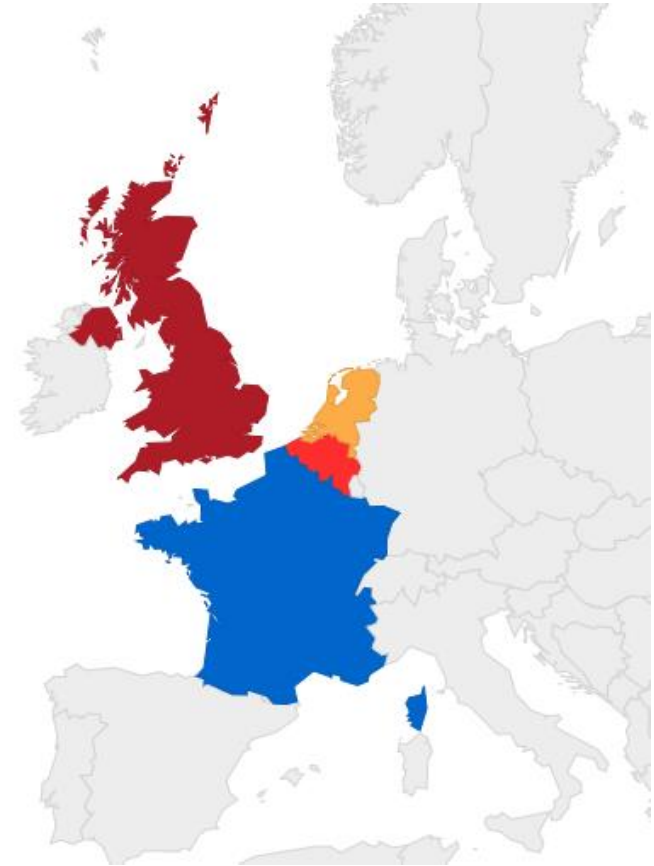
## Piloting Connected Vehicle (C-ITS) Services

- The Department for Transport, Highways England, Transport for London and Kent County Council developed a 'Connected Corridor' along the A2 and M2 to pilot technology that will provide wireless links between vehicles and road infrastructure.
- It enabled vehicles to communicate information about road and journey conditions.
- It aimed to reduce congestion and improve mobility, travel-time reliability, safety, and make more efficient use of our road network.
- It formed part of the UK's ecosystem of connected and autonomous vehicle testbeds, enabling an environment for research, development and deployment.





The Corridor is also part of InterCor (Interoperable Corridors), a European project which aims to connect C-ITS initiatives of four participating Member States, the C-ITS Corridor in the Netherlands (connecting the Netherlands with Germany and Austria), the French corridor of the SCOOP@F project and the British and Belgian C-ITS initiatives, while also making the connection to the C-Roads platform.



**Netherlands**



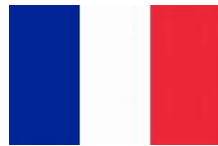
**UK**

DfT

Highways England

TfL

Kent CC



**France**



**Belgium**



# Status Partnership



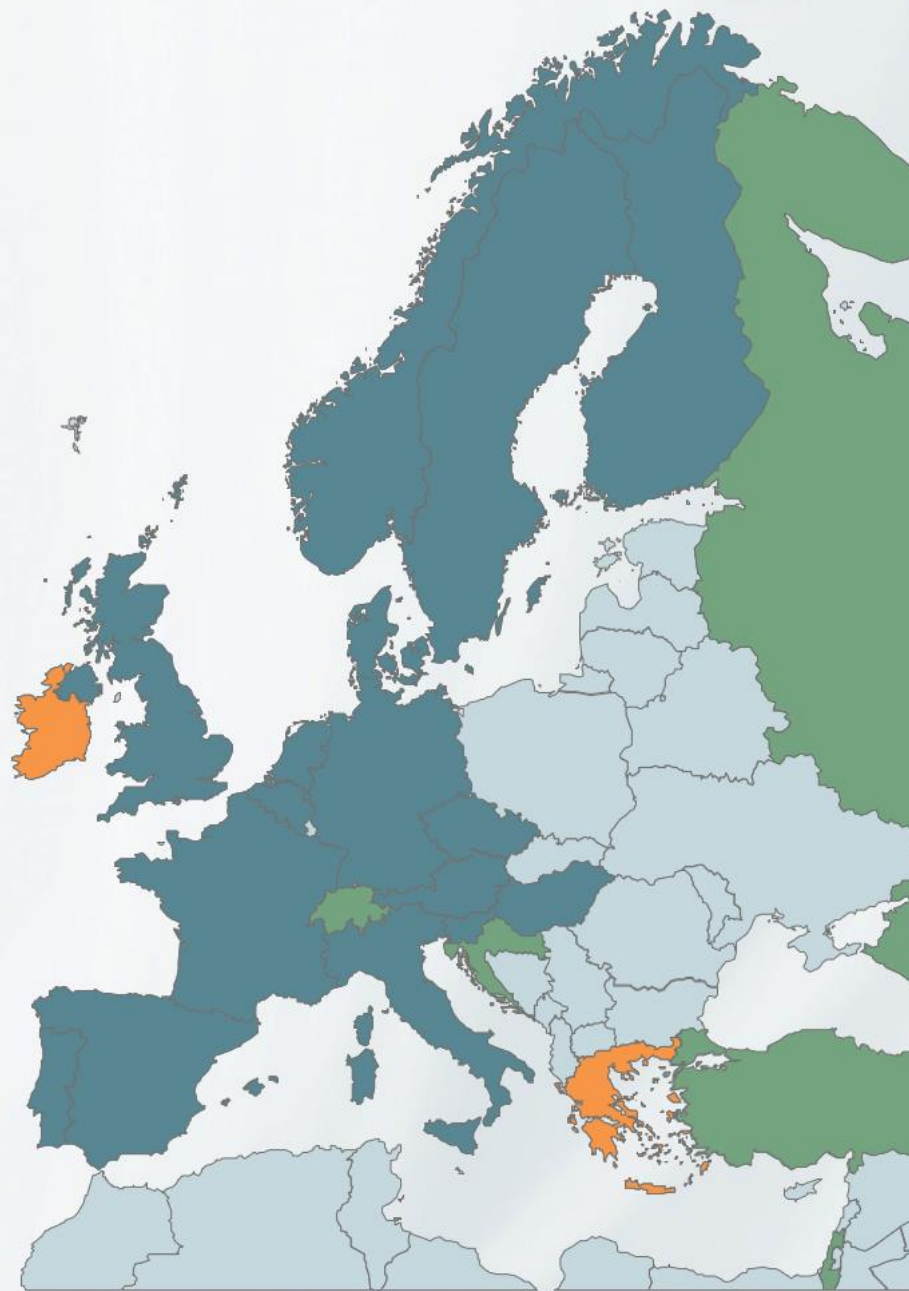
**2016: Eight founding Member States**

**2017: Enlargement to 16 States**

**2019: Further enlargement to 18 States**

## Associated Members

- Croatia
- Israel
- New Zealand
- Queensland/Australia
- Russia
- Turkey
- Switzerland



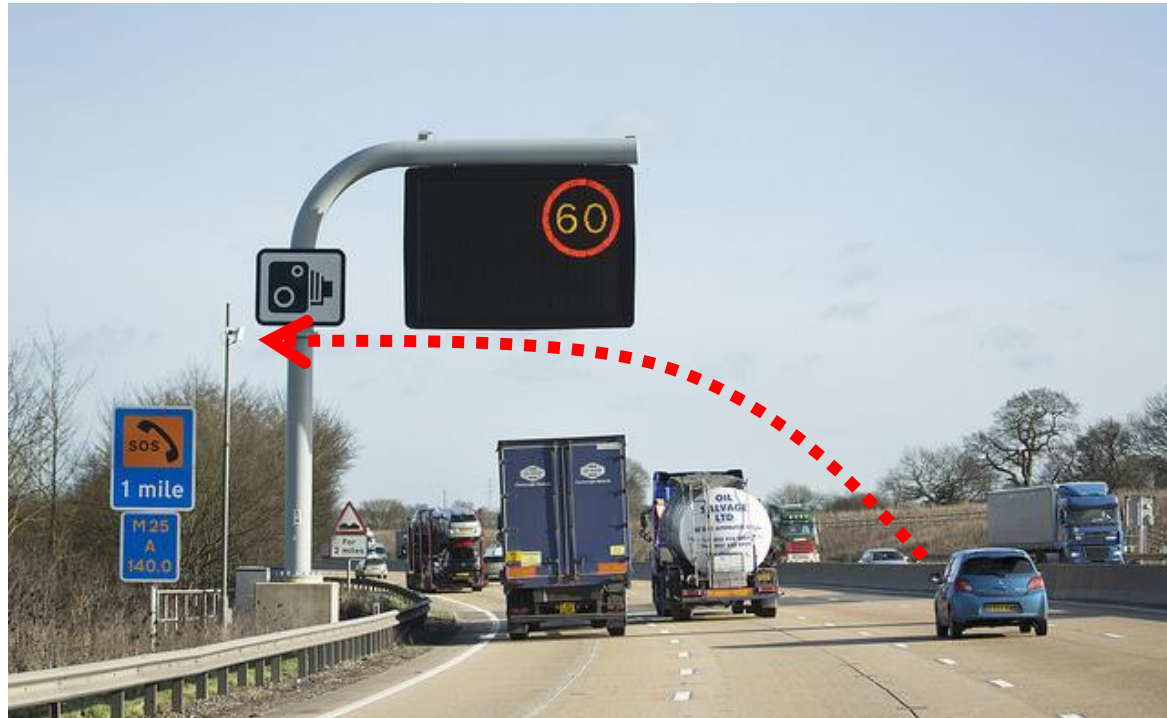
# Service: In Vehicle Signage



Replicating information shown on roadside signs and signals



# Services: Probe Vehicle Data



Providing basic probe vehicle data to roadside (such as speed, direction, time, location)

# Services – GLOSA



Green Light Optimisation  
Speed Assistance.

Providing driver with data  
of the optimum speed for  
arriving in time for a  
green light.

# Service: Road Works Warning



Providing warning of roadworks ahead.



## Car2X: The new era of intelligent vehicle networking

# What does this mean for drivers?

## These new services are driver assistance systems!

There are currently no specific regulations covering 'connected vehicles' other than existing vehicle standards.

EU regulation of C-ITS is on hold, but is likely to be reintroduced at some point

DfT are focussing on data requirements, cyber security and planning work on driver distraction.

## These new services are already out there!

The previous slide showed that VW already have production vehicles equipped that can communicate with each other. (V2V)

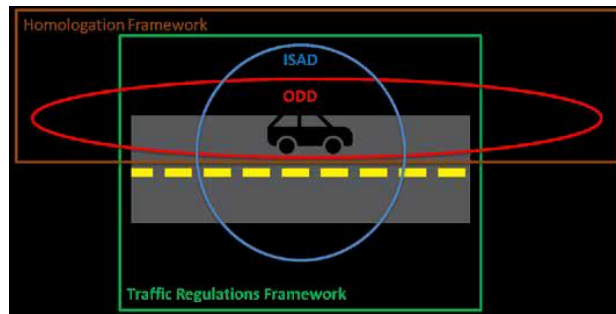
The connection to infrastructure is only being piloted on a limited scale in the UK (V2I).

The ability to deliver services over cellular links and through smart phones could accelerate this quickly.

# Connectivity and cooperation

## SAE

The Society of Automotive Engineers (SAE) defines 6 levels of driving automation ranging from 0 (fully manual) to 5 (fully autonomous)



## ODD

According to the SAE Definition, ODD are “Operating conditions under which a given driving automation system or feature thereof is specifically designed to function, including, but not limited to, environmental, geographical, and time-of-day restrictions, and/or the requisite presence or absence of certain traffic or roadway characteristics.” (SAEJ3016-201806).

## Long term vision?

**The road infrastructure can support and guide automated vehicles by using physical and digital elements. The ISAD levels can be used to inform automated vehicles about the road capability on certain road segments.**

\* Content based on the [ERTRAC CCAM Roadmap V10.pdf](#)

# Thank you and Questions

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