

The View from Automotive

Gunny Dhadyalla
Director

An **outstanding member-based community** committed to create the **next generation** of UK-centric automotive **electronics technologies and supply chains**.

Leading thought and impact for ingenious, sustainable, efficient, safe, and resilient mobility through the **innovative application of electronics systems**.



ADAS & HAV



SECURITY



CLEAN &
CONNECTED



RAB

4 Active Industry
Driven Workstreams

Systems Engineering
Approach to MaaS
(SEAMAAS)

User Experience / User
Interface
(UX / UI)

Robust & Resilient
Perception Sensors

Niche Vehicles E/E
Architectures

4 Technology
Interest Groups



70+ Members, 20+ Events per Year, AESIN Annual
Conference Premium Industry Event



Department
for Transport



Voice of the Industry, Partnerships with National
and International Bodies

A Forum for Bilateral Cooperation in Connected and Highly Automated Vehicles technology

- **Exchange of technological information and knowledge:**
Technical publications for sharing with members, the wider transport technology community of professionals and industry and the public at large.
- **To facilitate** professionals and organizations from **both private and public sectors** who wish to cooperate.
- Interface on **policy** issues.
- Cooperative **promotion of each other's principal events.**

Proposed Memorandum of Understanding (MOU)

Between

**Transport Technology Forum
and
Automotive Electronic Systems Innovation Network**

**A Forum for Bilateral Cooperation in
Connected and Highly Automated Vehicles technology**

The purpose of this MOU is to establish a bilateral relationship and develop cooperation between Transport Technology Forum (TTF) and Automotive Electronic Systems Innovation Network (AESIN) (together known as the parties) in important matters pertaining to advancements and innovations in Connected and Highly Automated Vehicle technology. Particular attention will be given to improving information sharing and joint approaches to development and implementation of new solutions.

Principles & Collaborative Activities

With this framework, transport technology and automotive professionals and industries will better understand the potential for connectivity and thus be able to optimise the development and deployment of connected and highly automated vehicles. Therefore, through this MOU, the parties set down the following principles:

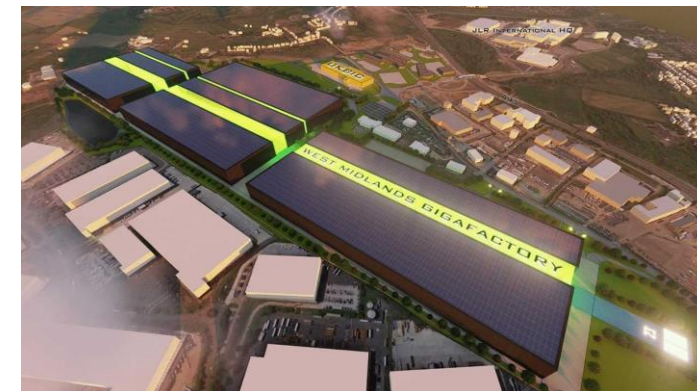
- Exchange of technological information and knowledge, including technical publications between the TTF and AESIN for their respective use and, as appropriate, for the purpose of sharing it with their members, the wider transport technology community of professionals and industry and the public at large.
- To facilitate professionals and organizations from both private and public sectors who wish to cooperate.
- Interface on policy issues.
- Cooperative promotion of each other's principal events.

AESIN shall invite TTF to be a permanent member of the AESIN Executive Steering Board. TTF shall invite AESIN to be a permanent member of the TTF Board.

Terms / termination

This MOU does not preclude any of the parties from participating in relationships with other entities. Expectations for the future are that the co-operation among the parties will be highly beneficial for both organisations and that this agreement may lead to more effective

- Shortage of semiconductor supply
 - Up to 30% increase in piece price, Up to 70 weeks lead times
- Connectivity
 - OTA updates and Cyber Security UNECE 155 and 156 validation and compliance
 - The need for industry driven implementation frameworks
- The road to electrification
 - Raw materials supply, including lithium, nickel, and cobalt
 - 200+ gigafactories needed to meet expected demand
 - Public charging infrastructures keep pace with EV take-up

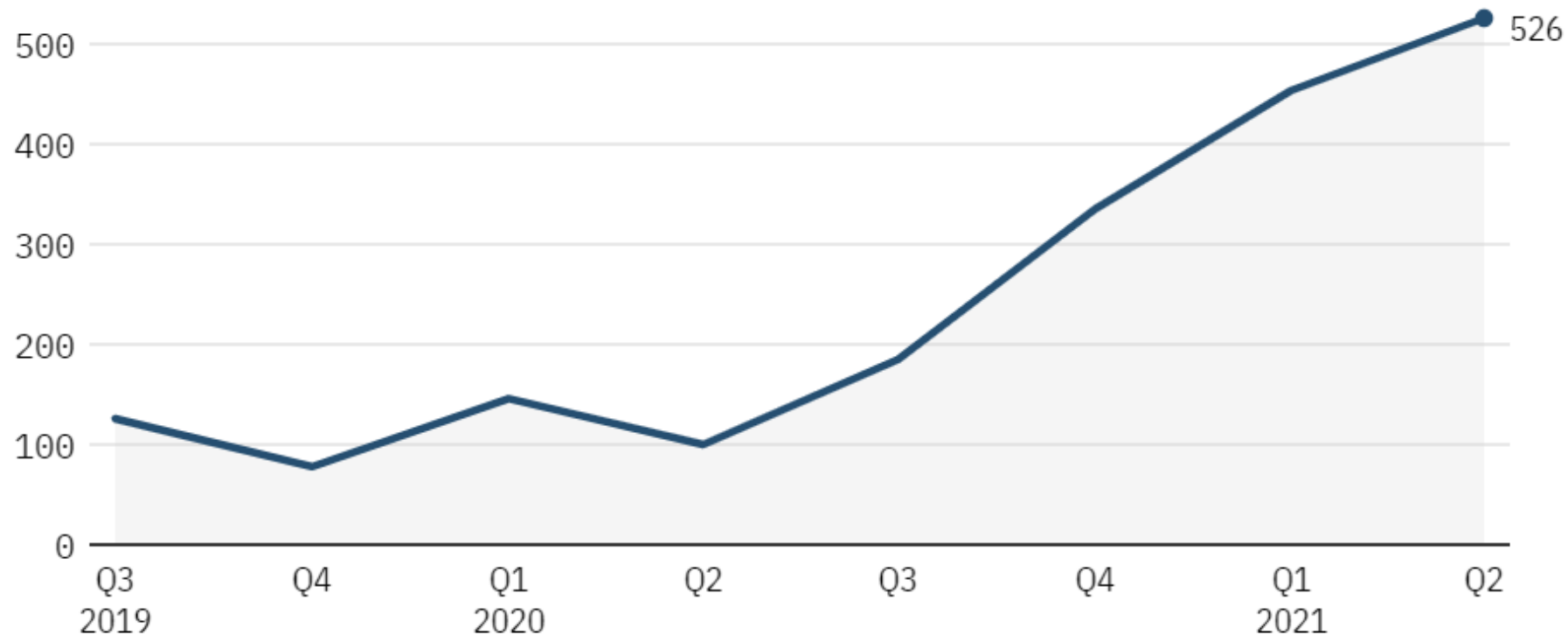


- Public: Traffic management and road safety supports ITS-G5
- Private vehicle: Customer experience, piece costs, data ownership, on-board / off-board architectures support 5G
- 5G vs ITS-G5 – what's the answer?
 - Multiple / redundant vehicle technology costs
 - How ready are we for 5G in vehicles? Latency claims, theory versus reality
 - Functional safety argument for ITS-G5
 - ITS-G5 for Day 1 and Day 1.5 C-ITS applications only or C-V2X solutions harnessing both (Qualcomm)
 - Hedge betting technologies in different markets (VW)
 - Coverage: Highway, urban, interurban, rural



Companies in the automotive sector are hiring for connected car roles

Number of quarterly active job adverts



- 3G/4G Telematics solutions already exists
- Driver behaviour affects bottom line
 - Cost of downtime: reduction in incidents
 - Fuel economy
- Driver behaviour monitoring using driver-facing cameras
 - Real-time and journey feedback
- Large data transfer, machine learning analytics open up 5G use cases
- Harnessing aftermarket industry an opportunity, given fleet operators are data owners and beneficiaries



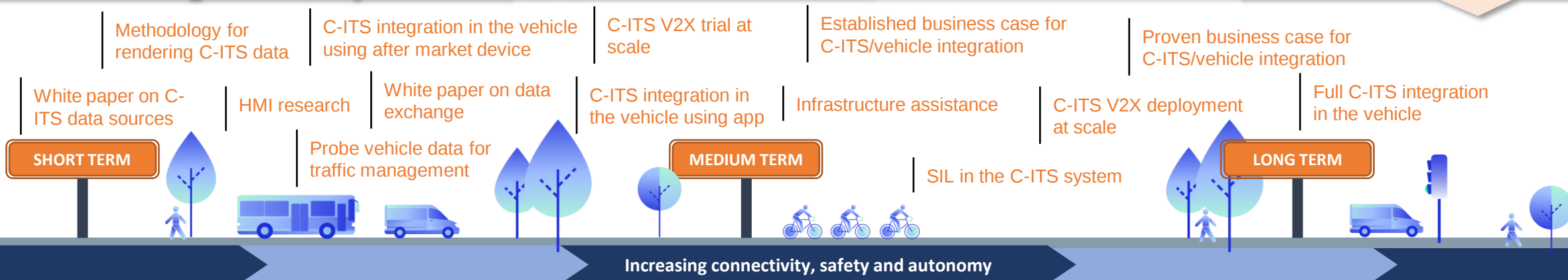
Driver monitoring technology such as Seeing Machines' Guardian system tracks head and eye movements for signs of drowsiness or distraction. (Seeing Machines)

Source: <https://www.ttnews.com/articles/cab-monitoring-uses-machine-vision-detect-fatigued-distracted-driving>

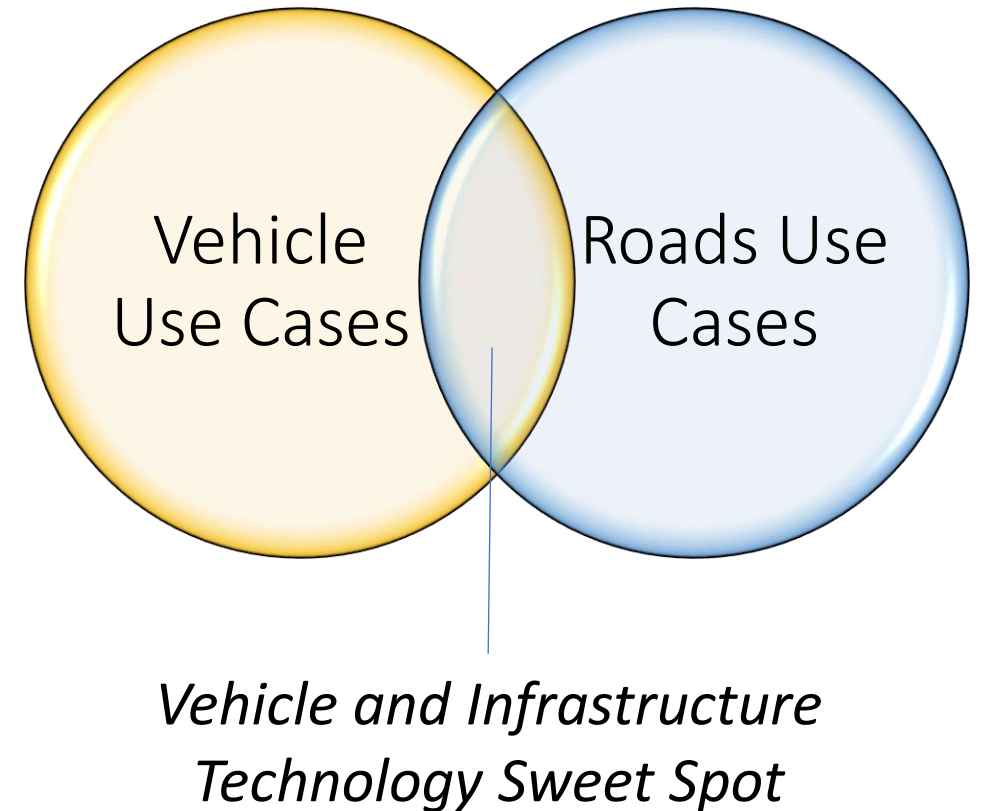
Work Stream Purpose	Strategic Aims	What: Data			How: Technology		Why: Business Model	
		C-ITS	With Infrastructure partners, create new value for, and access to existing C-ITS data.			Help members understand what C-ITS data is accessible. Where metadata or access is restricted, propose enhancements.		Confirm the business case for the public sector.
		Vehicle	With OEMs, create new value for and facilitate access to existing vehicle data.			Help members understand how vehicle data may be accessed. Describe a methodology for infrastructure data rendering in a vehicle		Confirm the business case for the private sector.
		MaaS	For MaaS, identify data to encourage the use of more sustainable transport.			Explore whether members have the capability to connect disparate systems to unlock MaaS potential.		Confirm the environmental business case.
		Standards	What data should be exchanged openly, what has commercial potential? Contribute to the development of appropriate standards.			Work with relevant bodies to ensure interoperability of systems and efficient interfaces. How is data exchanged?		Confirm the safety business case.

Confirm the business case for the consumer (freight/fleet/individuals).

Confirm the business case for multi-modal travel.



- **AESIN Clean & Connected workstream** led by Yunex Traffic engaging with TTF and DfT
- **Create forums to tease out the UK strategy** and technology and system opportunity
- **Identify** overlap and who wants to play in creating mutually beneficial engagements
- **Collaboration opportunities** to develop innovation and solutions



Thank you.

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