

AUTOMOTIVE CONSULTANCIES
DEVELOPMENT TOOL SUPPLIERS
POWERTRAIN CONSULTANCIES
TEST & CERTIFICATION FACILITIES
**TIER 1 - SYSTEM DEVELOPERS &
INTEGRATORS**
**TIER 2 - COMPONENT DEVELOPERS &
SUPPLIERS**
VEHICLE COMPONENT SUPPLIERS



**SUPPLY
CHAIN
CAPABILITY
DIRECTORY**

2021/22





Working with Customers to create history

Jaltek Systems is a leading AS9100 and ISO 13485 accredited UK contract electronics manufacturer with over 30 years' experience. We offer a comprehensive range of integrated design and manufacturing services adapted to meet our customer's varied requirements.

Focusing on low to medium volume, high mix product profiles for a range of industries, Jaltek uses advanced systems to support products throughout their lifecycle, offering a single service or complete solution.

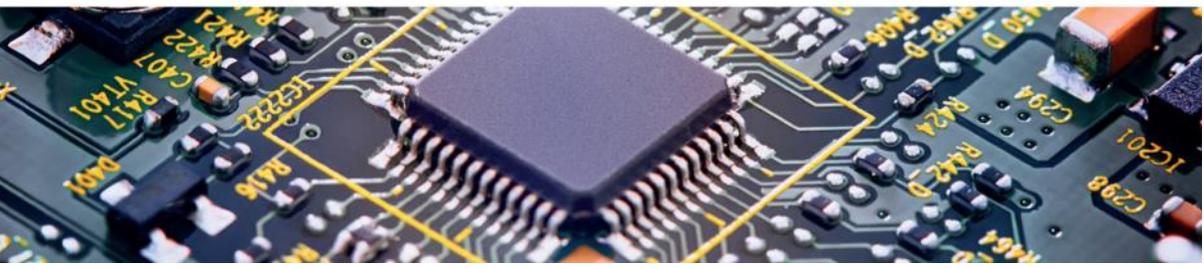
We have a diverse customer base, from global PLCs to start-up ventures, many have worked with us for over 15 years - testament to our customer focus and support in an ever changing marketplace.

- 3 SMT Lines
- Dedicated NPI Line
- PCB Layout
- Selective Solder & Manual Assembly
- IPC-A-610 Class 3 workmanship standard
- Cable Assembly
- Conformal Coating
- Pressfit
- Extensive test suite
- X-ray
- State-of-the-art 3D inspection
- Box-build & High Level Assembly
- System Integration

📍 **Jaltek Systems**
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Key Sectors: Clean Energy • Communication & Broadcasting • Consumer • Defence & Aerospace • Homeland Security
 • IP Development Platforms • Medical • Oil & Gas • Scientific Research • Space





I am proud to present, as Chairman of AESIN, the latest edition of this valuable Automotive Supply Chain Capability Directory which provides a rich resource of UK based organisations offering Automotive Electronics services and solutions.

A core part of our work at AESIN is to help enable rapid innovation and growth in resilient Automotive Electronic Systems. It is therefore vital that we reach out to relevant organisations across the UK supply chain and engage with our core Industry led Workstream activities (More Electric Powertrain, ADAS & HAV, Security, Clean and Connected Mobility, Software and Research) in support of that goal.

Despite the impact of COVID19, our AESIN Community has shown great resilience and flexibility in seeking technology solutions. To assist in this, the Directory has both a searchable on-line and printed version to be distributed at the AESIN 2021 Annual Conference 16th September.

AESIN increasingly works with partner Organisations, Government and external stakeholders to collaborate, partner and enable innovation. We are delighted to include in this version organisations including DER (Driving the Electric Revolution, APC (Advanced Propulsion Centre), CCAV (Centre for Connected and Autonomous Vehicles) and Innovate UK. If you would like to find out more information on these, please [get in touch with our AESIN administration team](#).

I would like to thank all of those involved at AESIN and TECHWORKS for the work in preparing this new revision of the publication and also to those providing Editorial supplements and advertisements.

Finally, I would encourage you to make full use of the directory to help locate and connect with new potential suppliers and partners and I look forward to seeing this valuable resource continue to grow year-on-year as we expand the AESIN Community.

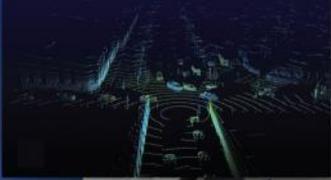


Dr. Stephen Lambert
AESIN Chairman

We would also like to recognise our OEM Manufacturing members



Virtual Testing of ADAS and AV



Proven Turnkey Solutions for Accelerated System Development

- Industry leading solutions for scenario based testing of ADAS and AV
- Full suite of perception sensors to enable full-stack testing
- Comprehensive representation of vehicle systems physics

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INDEX

A+E	13	McLaren Applied	48
Angoka	14	National Instruments	49
Applus+ IDIADA	15	Nordson	50
AptCore Limited	16	North East Automotive Alliance	51
ARM Limited	17	Nova Modus	52
AVL Powertrain UK Ltd	18	NPL	53
BAE Systems	19	NXP UK	54
Bank Top Consulting	20	ON Semiconductor	55
Beep Consulting	21	Paragraf Ltd	56
Cadence	22	Phaedrus Systems	57
Capgemini	23	Qualcomm	58
Caterpillar	24	QuantIC	59
Cenex	25	Quantum Power Transformation	60
CENSIS	26	R4DAR Technologies	61
Census Labs UK Ltd	27	RDM Group	62
Claytex	28	Reed Mobility	63
Compound Semiconductor Centre	29	Ricardo	64
Coventry University	30	Roke	65
CSA Catapult	31	RoodMicrotec	66
Cummins Ltd (R&T UK)	32	SafeTTY Systems	67
DER Industrialisation Centres	33	Siemens	68
dSPACE	34	Siemens EDA	69
Eatron Technologies	35	Synergie CAD Group	70
Exida	36	Synopsys	71
Feabhas	37	SysElek	72
Frazier & Deeter	38	Thales	73
Green Hills Software	39	Thatcham Research	74
Helix Technologies Ltd	40	Tracker	75
Highways England	41	Uniphy	76
HORIBA-MIRA	42	University of Warwick	77
Infineon	43	Visteon	78
Jaltek Systems	44	White Willow	79
Keysight Technologies UK Ltd	45	Williams Advanced Engineering	80
KPIT Technologies	46	WMG	81
LGN	47	Y Mobility	82
		Zuken	83

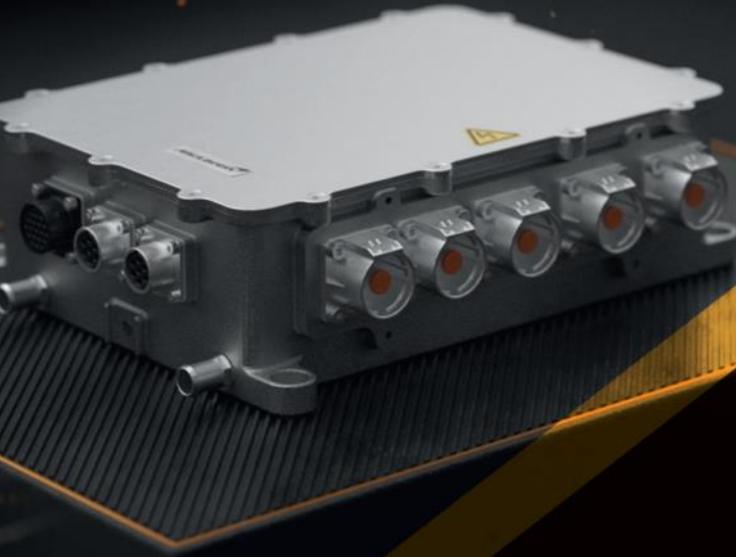
ARTICLES

Simulation tools for the development and testing of autonomous vehicles and advanced driver-assistance systems Mike Dempsey, Claytex	10
--	----

Company Spotlight: Jaltek Should Automotive OEMs outsource their box build?	84
The Automotive industry and component shortage, Jaltek could have the answer	86

ADVERTS

Jaltek Systems	2
Claytex	4
McLaren Applied	6
TechWorks Gala Dinner	8
AESIN Conference	88



Whether accelerating the drive to an electrified future or gathering valuable data-driven insight, as pioneers of meaningful change, we guide industries forward by developing world-class products and holistic, scalable solutions that harness our expertise in Electrification, and Telemetry, Control & Analytics.

CATEGORIES

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TECHWORKS GALA DINNER AND AWARDS CEREMONY

THURSDAY 9TH DECEMBER 2021



We are delighted that our annual TechWorks Summit & Awards Gala Dinner is back on Thursday 9th December 2021, at the Leonardo Tower Bridge Hotel, London.

The event brings together hundreds of executives & professionals from across the industry, providing an excellent opportunity to network with industry leaders, meet new clients or host existing clients and build brand awareness. At the dinner, we announce the winners of the TechWorks Awards – celebrating achievements & behaviours conducive to a healthy & vibrant industry.



The TechWorks awards are open to all organisations active within the tech industry, with award categories to fit a wide range of sectors. They are FREE to enter, with a simple online process.

Industry Summit: Join hundreds of UK tech leaders, ministers, universities and funders & help shape the UK position in the Deep Tech Industry.

Gala Dinner: The prestigious TechWorks Gala Dinner will bring together over 300 executives and professionals from across the industry. Enjoy a meal,, listen to our guest speaker, Piers Linney, and end the evening with music and dancing from our live act, The Hound Dogs.

<https://www.techworksawards.com>

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Innovate UK



ARTICLE

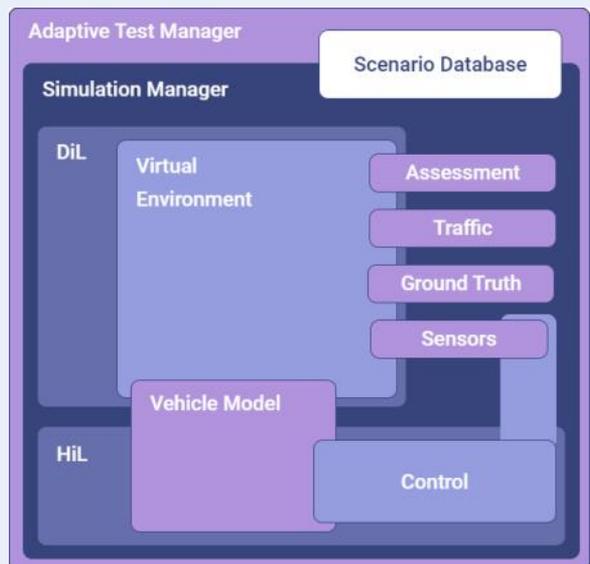
Simulation tools for the development and testing of autonomous vehicles and advanced driver-assistance systems



The development and testing of autonomous vehicles and advanced driver-assistance systems (ADAS) requires a different type of simulation tool. A tool that allows all the vehicle systems to be simulated and can include accurate models of the environment around the vehicle, is necessary. This means a simulation tool that can stimulate the cameras, LiDAR, radar and other sensor models whilst also simulating the dynamic behaviour of the car together with the traffic, pedestrians and weather surrounding it.

There are many different aspects to consider when trying to select the right simulation tools for this task. The first, and most obvious perhaps, is the virtual environment in which you want your vehicle to drive. There are a lot of different options available, some built up from traditional vehicle dynamics simulation tools, others built on gaming engines such as Unity, but we have selected rFpro to provide this core functionality.

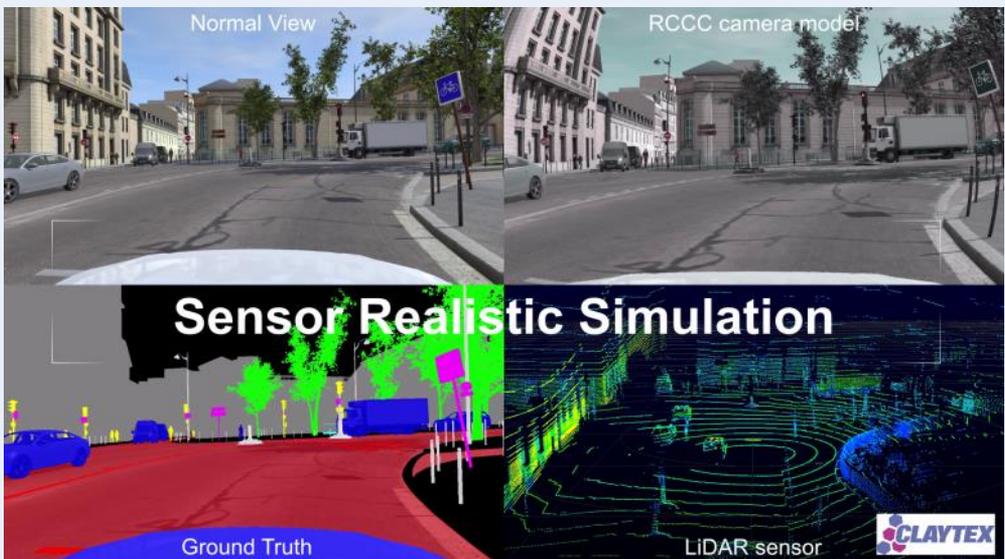
In selecting the platform that provides the virtual environment, we were looking for high quality graphics with an open api that would allow us to build detailed sensor models and take control of the scene and dynamic objects that are needed in our scenarios. Using rFpro has also allowed us to leverage their expertise in creating high quality, accurate, digital twins of real-world locations coupled. rFpro can also run in either real-time or synchro-step mode and the latter enables us to ensure the simulation is deterministic.



The solutions we develop wrap around rFpro to enable it to be used for scenario-based testing. These tools are built on the open standards of OpenSCENARIO and OpenDRIVE and the complete toolchain allows you to load the map, define the routes that all the vehicles and pedestrians will follow and then run the scenario to collect data to analyse the performance of your system.

The next major consideration for an autonomous vehicle or ADAS project is the sensor models. In the early stages, a developer may choose to deploy a generic sensor that, in simulation, functions as though in perfect conditions. This allows the system concept to be explored, including looking at how different sensor configurations, positions and fields of view will affect the overall function of the system. To support this, we provide generic, ideal, sensors for all the perception sensors found on these vehicles, including cameras, radar, LiDAR, ultrasound, and GPS.

As a project progresses you will need more detail in the sensor models to allow you to improve the level of realism that the system is exposed to. From this point on we are aiming at creating virtual reality for the control system so that it can be immersed into the virtual world and cannot tell the difference between VR and the real world.



The next level for a sensor model is a device specific model: a model of a particular LiDAR, for example, which in simulation will produce the same output data stream as the actual device being used. As part of our work on the Streetwise project which ended in 2019, we developed detailed sensor models and associated test methodologies.

This methodology allows us to take a device, go into the field and run a suite of tests to allow us to validate these detailed sensor models. In many cases, the test involves literally standing in a field with a set of sensors pointed at standardised targets to measure their performance in a wide range of weather conditions. Real-world data collection is necessary and not something that can itself be simulated since different sensors display different behaviours across the range of conditions we are interested in.

During Streetwise we tested multiple types of radar and LiDAR from different manufacturers. The LiDAR we tested are similar in principle (16 channel, 360 degree rotating sensors), but the noise effects are different due to the different technologies used. The sensors are affected by rain in different ways and to different degrees. So, when it comes to constructing a detailed correlated model, there is some theory you can put in to introduce the noise effect, but to quantify them correctly, it is necessary to go out and collect real test data and recreate those tests in the simulator to validate the noise models.

We are currently pushing the development of the simulation technology forward thanks to a number of CCAV, Innovate UK and Department for Transport funded projects. These projects have us working on the simulation of edge cases within the D-Risk project, on the simulation of UAVs within the SEER project and on the development of test methodologies within the SAVAir (Safe Autonomous Vehicles at Airports) project.



Whilst a lot of the development is focused on what is needed for fully autonomous vehicle development and simulation, the same technology is also applicable, and necessary, for ADAS feature development. ADAS features are using the same type of perception sensors, so the same simulation technology is necessary to support the development and validation of these systems.

Claytex is already applying this simulation technology on a number of customer projects to enable them to accelerate their ADAS and AV programmes. Can we help you with your project by enhancing the simulation tools you are using?



**Mike
Dempsey**
MD, Claytex



Linking people together is hard

First you need to understand what makes each potential partner tick, then find out what good looks like for them.

Translating these wants and needs is a core skill that allows us to make those linkages that lead to long term partnerships.

We can help you find your way through the maze of research and development support and help you find the right people that will benefit from working with you.

With a background in the automotive industry followed by many years in the government research and development funding environment puts us in a great position to make those connections that help your ideas come to fruition.

Why A + E ?

Automotive + Engineering
Air Quality + Environment
Automated + Electric
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A + E

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AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

ANGOKA is an IoT security company focused on protecting M2M communications for Smart Cities and Mobility. Headquartered in Belfast, with offices in London and The Hague, ANGOKA offers solutions that protect devices' identities. With an increase of inherently insecure networks coming online with the boom of IoT, ANGOKA's solutions safeguard critical machine-to-machine communication integrity and data provenance, creating trusted connections, even in untrustworthy networks.

ANGOKA

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Website	www.angoka.io

ANGOKA is the only cybersecurity company to win a place on Zenic's CAM Scale-Up Programme, delivered in partnership with Plug and Play. ANGOKA was also the first NI start-up to be selected for NCSC's Cyber Accelerator, who reviewed and assessed ANGOKA's technology. ANGOKA is also an alumnus of Seraphim Space Camp, Yes!Delft and TechNation Cyber 2.0. Finally, ANGOKA has been awarded several Innovate UK R&D projects, which focus on securing quantum communications (led by BT) and two drone projects. Most recently, ANGOKA was selected for Plug & Play's Smart Cities programme, with a focus on Mobility, and was named one of the UK's Most Innovative Cyber Security SME by the UK Government.



AUTOMOTIVE CONSULANCY - TIER 2 COMPONENT DEVELOPER & SUPPLIER

[RETURN TO THE INDEX](#)

IDIADA UK provides engineering services for full turnkey or sub-system projects. Specific skills include systems, software, safety engineering (ISO-26262) and ECU design for powertrain, ADAS, connected & automated vehicles and infotainment systems.

Applus⁺ IDIADA

Our IDAPT platform is designed to support CAV R&D projects such as MuCCA. IDAPT provides a compact, robust solution based around an NVIDIA GPU with V2X, cellular, ethernet, cameras, CAN and a variety of analogue and digital I/O.

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Website	www.applusidiada.com



Applus IDIADA is a global partner to the automotive industry providing design, engineering, testing and homologation services. The company has over 2,700 professionals in 24 countries. Our headquarters includes a 360-hectare technical centre and proving ground located near Barcelona, Spain.



AUTOMOTIVE CONSULTANCY - TEST & CERTIFICATION FACILITIES

[RETURN TO THE INDEX](#)

APT CORE

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AptCore – Efficient Processor Cores

AptCore provides optimised processor cores for silicon integrated circuits and FPGAs. AptCore's innovative designs and expertise greatly improve performance whilst lowering cost and power consumption for demanding Digital Signal Processing applications. Our IP cores are efficient and easy to integrate, whilst having full programmability, giving them the flexibility to serve as a common platform.

Silicon IP Cores

AptCore uses low power, parallel processing techniques to provide highly configurable, software programmable cores that achieve the ultimate performance and power efficiency. Utilising extensive experience of many DSP applications and deep knowledge of parallel processing architectures and techniques, AptCore's IP cores and software libraries bring benefits to many applications. By providing libraries, reference designs and validation data to accompany our cores, we provide a complete solution that is straightforward to use, enabling rapid design.

Technology and Applications

Our designs benefit from extensive experience in a number of fields including automotive collision avoidance, security and traffic monitoring. AptCore's technology spans many application areas, and our IP Cores and software can be used effectively in many fields.

Design Services

AptCore provides design services and consultancy for Integrated Circuit and FPGA design projects, enabling us to tailor solutions to your requirements. From specification and design work through to verification, testing and project management, we provide a range of services targeted across a number of application areas.

AUTMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

arm

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Driving into the Future with Automotive Technology

The car is the most complex electronic device many of us will buy. The Arm architecture is a key enabler of automotive technology,

with more than 85 percent of infotainment systems and many under-the-hood applications powered by Arm-based chips. Autonomous driving is the next frontier for car manufacturers; it will be a revolution that changes the concept of mobility as we know it. Arm is playing a role in this transformation by providing high-performance compute platforms, meeting the power-efficient energy requirements that allow manufacturers to deploy autonomous vehicles at scale, and turn concept into reality.

New Era of Automotive Innovation

The automotive industry is currently looking at the technology innovation needed to move from today's prototype autonomous vehicles to deployable safe, self-driving solutions. Arm is working with key OEMs, Tier 1s and the broader ecosystem to help simplify and accelerate the path to real deployment of safe autonomous vehicles which will redefine our concept of mobility and enable a new era of automotive innovation for the entire vehicle.



Scalability
From parking sensor to cockpit



Energy Efficiency
Minimum heat, maximum range



Trust
Electronic counter measures thwart attacks



Safety
Safe, reliable electronics

TIER 2 COMPONENT DEVELOPER AND SUPPLIER

[RETURN TO THE INDEX](#)

AVL



AVL is the world's largest independent company for the development, simulation and testing of powertrain systems (hybrid, combustion engine, transmission, electric drive, batteries, fuel cell and control technology) for passenger cars, commercial vehicles, construction, large engines and their integration into the vehicle.

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Website	www.avl.com
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The company has decades of experience in the development and optimization of powertrain systems for all industries. As a global technology leader, AVL provides complete and integrated development environments, measurement and test systems as well as state-of-the-art simulation methods.

As a pioneer in the field of innovative solutions, such as diverse electrification strategies for powertrains, AVL is increasingly taking on new tasks in the field of autonomous driving, especially on the basis of subjective human sensations (driveability, connectivity, ADAS, etc.). In the competition of technologies – ICE-based engine, battery and fuel cell electric drive – and their combinations, AVL is working intensively and with the same priorities.



AVL has digitized the vehicle development process with state-of-the-art and highly scalable IT, software and technology platforms, and creates new customer solutions in the areas of big data, artificial intelligence, simulation and embedded systems in an agile and integrated development environment.

**AUTOMOTIVE CONSULTANCY - POWERTRAIN CONSULTANCY - TEST & CERTIFICATION
FACILITY - TIER 1 SYSTEMS DEVELOPER & INTEGRATOR**

[RETURN TO THE INDEX](#)

BAE SYSTEMS

At BAE Systems, our advanced defence technology protects people and national security, and keeps critical information and infrastructure secure.

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Via The Website

Website

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We search for new ways to provide our customers with a competitive edge across the air, maritime, land and cyber domains. We employ a skilled workforce of 89,600 people in more than 40 countries, and work closely with local partners to support economic development by transferring knowledge, skills and technology.

Our markets

BAE Systems has leading positions in its principal markets – in the US, UK, the Kingdom of Saudi Arabia and Australia – as well as established positions in a number of other international markets. We are one of the largest global defence companies.

Sustainability

We are a business that operates responsibly and sustainably, supporting performance by managing both current and future risks and opportunities.

Sustainability is important to us and to all of our stakeholders. At BAE Systems we serve, supply and protect those who serve and protect us, in a corporate culture that is performance driven and values led. Our sustainability agenda supports this purpose and our important role in society by reducing the environmental impacts of our operations and products, valuing and developing our people, making a positive social and economic contribution to our communities, developing innovative technologies and collaborating with our supply chains.



TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)



Bank Top Consulting

Bank Top Consulting provides collaborative advisory services and innovative connected

mobility, transport technology, and highway infrastructure solutions to organisations in the Automotive and Traffic Management markets.

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Our expertise and in-depth experience in the development, execution and operational deployment of technology programmes includes:

- **Smart Highway Solutions**
- **Electric Vehicle Infrastructure**
- **Connected & Cooperative ITS**
- **Autonomous Mobility**

The services we offer are transformational and include:

- **Technology Solutions & Business Development**
- **Project & Programme Management**
- **Interim Management & Collaborative Delivery**
- **Domain & Market Relationships**

Our customer relationships and domain network includes Government & Public Sector Organisations, Automotive Sector, Traffic Technology Integrators, Service Providers and Network Operators.

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)



We are a specialist connected and autonomous vehicles consultancy and our mission is to make driving safer, cleaner and more convenient..

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If you're a business wondering how to harness the opportunities presented by the connected and autonomous vehicles market, we can help you understand the industry, identify relevant opportunities and will work with you to define your strategy. Ask us about, v2x connectivity, telematics, insurance, monetising data, engine prognostics, LiDar, driver safety, optimising customer experience, autonomous vehicle testing and key startups in this space.

If you are already an established part of the CAV

industry, an OEM, a Telco, Software or Hardware House but need to fine tune your strategy, drive performance faster and programmes leaner – we can help with that. We are specialists in product delivery, digital transformation and can lead you on the journey from waterfall to agile, without the risk. If you are trying to navigate through the noise of start ups, we have done the hard work for you and if you are a startup struggling to engage, we have relationships across the market.

If you are one of the billion drivers on the road wondering how connected and autonomous vehicles will impact you, then Beep Consulting will try to answer your questions. From not being able to find a parking space and having to scrape ice off your windscreen, to queuing for petrol, having no real connectivity and dealing with road rage, driving just could and should be better. Connected and Autonomous vehicles have the opportunity to make driving feel smarter, more convenient, safer and less damaging for the environment. Please email us your questions and we will do our best to answer.

[VISIT THE WEBSITE FOR MORE INFORMATION](#)

[RETURN TO THE INDEX](#)



The automotive industry is working toward autonomous driving vehicles.

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As a result, future cars will be equipped with sensor clusters, more computing power, car-to-car and in-vehicle communication technology, high-bandwidth Ethernet networks, and multiple high-definition displays. These changes create new design challenges for automotive suppliers, such as more complex electronic systems, functional safety, lack of space, reduction of power and weight (emissions), and cost constraints.

These additional challenges will push suppliers to integrate much more functionality on a chip, rather than on a PCB. As a result, suppliers will need:

- High-performance processors for advanced driver assistance system (ADAS) solutions
- Complete automotive Ethernet IP portfolio
- Extensive software ecosystem for infotainment, such as via Cadence® Tensilica® HiFi cores
- A new class of SoCs and SiPs enabled by Cadence Design IP and packaging technology
- Automated functional safety solution

Cadence's automotive design and verification solutions can help you deliver applications that can make cars safer and more reliable. We also provide an automated requirements management flow that helps you deliver silicon that complies with ISO 26262.

AUTOMOTIVE CONSULTANCY - POWERTRAIN CONSULTANCY - TEST & CERTIFICATION FACILITY - TIER 1 SYSTEMS DEVELOPER & INTEGRATOR

[RETURN TO THE INDEX](#)



Capgemini Engineering combines, under one brand, a unique set of strengths from across the Capgemini Group: the world leading engineering and R&D services of Altran – acquired by Capgemini in 2020 – and Capgemini’s digital manufacturing expertise.

With broad industry knowledge and cutting-edge technologies in digital and software, Capgemini Engineering supports the convergence of the physical and digital worlds.

Combined with the capabilities of the rest of the Group, it helps clients to accelerate their journey towards Intelligent Industry. Capgemini Engineering has more than 52,000 engineer and scientist team members in over 30 countries across sectors including aeronautics, automotive, railways, communications, energy, life sciences, semiconductors, software & internet, space & defence, and consumer products.

Automotive

A new future is being written for the automotive industry. Companies which have spent decades perfecting the production of vehicles are now reinventing themselves as mobility services providers in favor of environmental sustainability. At Capgemini we believe we have a role to play in inventing the future of the mobility industry.

Whether your focus is to drive efficiencies through Smart Automation or drive growth through Smart Mobility, we partner with you as:

- Digital platform provider
- Agile transformation partner
- Agile innovation partner

FIND OUT MORE BY VISITING THE WEBSITE

<https://capgemini-engineering.com/uk/en/>

**AUTOMOTIVE CONSULTANCY - DEVELOPMENT TOOL SUPPLIER - POWERTRAIN
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[RETURN TO THE INDEX](#)

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With 2020 sales and revenues of \$41.7 billion, Caterpillar Inc. is the world's leading manufacturer of construction and

mining equipment, diesel and natural gas engines, industrial gas turbines, and diesel-electric locomotives.

Since 1925, we've been driving sustainable progress and helping customers build a better world through innovative products and services. Throughout the product life cycle, we offer services built on cutting-edge technology and decades of product expertise. These products and services, backed by our global dealer network, provide exceptional value to help our customers succeed.

We do business on every continent, principally operating through three primary segments – Construction Industries, Resource Industries, and Energy & Transportation – and providing financing and related services through our Financial Products segment.



TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)



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Cenex was established as the UK's first Centre of Excellence for Low Carbon and Fuel Cell technologies in 2005.

Today, Cenex focuses on low emission transport & associated energy infrastructure and operates as an independent, not-for-profit research technology organisation (RTO) and consultancy, specialising in project delivery, innovation support and market development.

We also organise Cenex-LCV, the UK's premier low carbon vehicle event, to showcase the latest technology and innovation in the industry.

Our independence ensures impartial, trustworthy advice, and, as a not-for-profit, we are driven by the outcomes that are right for you, your industry and your environment, not by the work which pays the most or favours one technology.

Finally, as trusted advisors with expert knowledge, we are the go-to source of guidance and support for public and private sector organisations along their transition to a zero-carbon future and will always provide you with the insights and solutions that reduce pollution, increase efficiency and lower costs.

Together, we can lower your emissions through innovation in transport and energy infrastructure.



AUTOMOTIVE CONSULTANCY - TEST & CERTIFICATION FACILITIES

[RETURN TO THE INDEX](#)



Telephone	+44 (0)141 330 3876
Email	sian.williams@censis.org.uk
Website	www.censis.org.uk

CENSIS is the centre of excellence for sensor and imaging systems and Internet of Things (IoT) technologies.

We help organisations explore innovation and overcome technology barriers to achieve business transformation.

As one of Scotland’s Innovation Centres, our focus is not only creating sustainable economic value in the Scottish economy, but also generating social benefit. Our industry-experienced engineering and project management teams work with companies or in collaborative teams with university research experts.

We act as independent trusted advisers, allowing organisations to implement quality, efficiency and performance improvements and fast-track the development of new products and services for global markets.



TIER 1 – SYSTEM DEVELOPERS & INTEGRATORS

CENSUS is an independent, privately funded company dedicated to providing highly specialized and professional IT security services.



It was founded in 2008 by computer security experts with distinguished credentials and extensive prior experience. CENSUS is motivated by passion for IT security research and focused determination to help clients achieve the highest possible returns from their IT security investment. The company's independent status allows the team to dynamically approach the needs of clients without compromising the company's original vision.

OUR ADVANTAGE

The services provided by CENSUS are different from the traditional approach to IT security. CENSUS recognises that information security threats are constantly evolving. Its specialisation and experience in the field enables the team to go beyond the publicly known attack vectors, thus giving clients the opportunity to be protected from possible future threats to their infrastructure and products.

VULNERABILITY DISCLOSURE POLICY

CENSUS practices responsible disclosure of security vulnerability details. The team works closely with affected vendors to ensure that the discovered vulnerabilities have been properly addressed before disclosing any details to the public. The security of clients is of primary concern to the team. For any vulnerabilities discovered on client infrastructure, CENSUS provides assistance so that countermeasures are properly deployed. CENSUS treats all client information as highly confidential.

WORKING WITH CENSUS

We are always on the look-out for new partners! Our specialised services can help your business keep up with the diverse security needs of customers, thus enabling you to deliver better services and to a wider audience. CENSUS can provide you with contracted laboratory services for the analysis of software vulnerabilities, malware or forensic evidence. Our lab experts are also available for specialised staff training courses, so that your business keeps up to date with the latest changes in the field of ICT security.

Telephone	+44 1293 324 069
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Website	census-labs.com

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

Modelling and simulation solutions for systems engineering

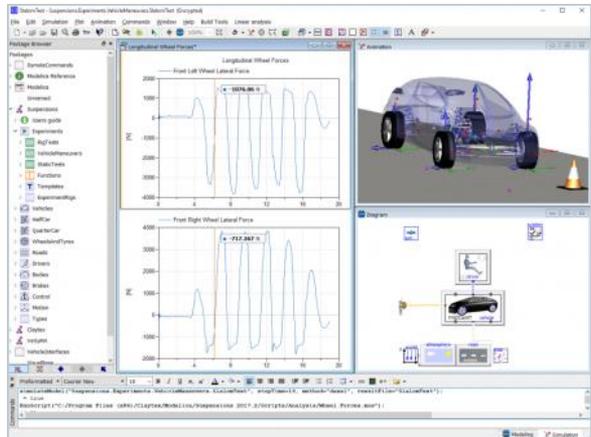
Everything we do at Claytex is about modelling and simulation, in particular the simulation of the dynamics and behaviour of the complete system. This covers multiple domains such as vehicle dynamics, powertrain, energy management, thermal management and extends into the virtual testing of ADAS and autonomous vehicles.

Claytex is a software distributor, solution developer, consultancy and training provider. We develop simulation solutions using the open standards of Modelica and FMI and distribute systems engineering solutions from Dassault Systemes, rFpro and specialist Modelica library developers.

Our portfolio of tools includes Dymola, Reqtify, ControlBuild, rFpro as well as our own software products.



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Find out more about our products and services

<https://www.claytex.com/products/rfpro/>

<https://www.claytex.com/products/dymola/>

<https://www.claytex.com/products/reqtify/>

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

The Compound Semiconductor Centre (CSC) was formed in August 2015 as a joint venture between IQE plc, the world leading supplier of advanced compound semiconductor wafer products, and Cardiff University, one of the Britain's leading research universities.



The CSC will build on research undertaken at Cardiff University's Institute for Compound Semiconductor to develop innovative new materials technologies that will enable a wide range of new and emerging applications.

The aim is to provide a complete capability value chain from high-end, World-class research and development through product and process innovation to high value, large-scale manufacturing.

The CSC provides an essential pillar to span the so-called "valley of death" on the Technology Readiness Level (TRL) scale.



CSC will be Europe's first prototyping facility allowing businesses and academics to demonstrate new technologies based on compound semiconductor materials that will be production ready - allowing rapid routes to market for entrepreneurs and technology leaders.



The Centre will also facilitate a wide range of training and skills development to support a growing infrastructure around compound semiconductor based technologies.



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TIER 2 - COMPONENT DEVELOPERS & SUPPLIERS

[RETURN TO THE INDEX](#)



Our Future Mobility research is at the forefront of mobility innovation in a rapidly changing technology-enabled world. We see major disruption in the transport sector due to the imminent arrival of future technology such as connected and automated mobility. As a result of this, the way in which people, goods and services moves is changing dramatically and we are guiding that change.

Telephone	+44 24 7765 7688
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Website	www.coventry.ac.uk

Our truly multi-disciplinary teams develop knowledge through frontline, cutting-edge applied research enabled by strong internal and external networks. We use robust scientific methods coupled with innovative modelling and simulation techniques, to guide and develop solutions and inform policy on the next generation of transport, mobility and the environments in which they take place.

Everyone in society will benefit from this innovation in future mobility that will lead to safer roads, secure systems, cleaner cities and transform how people and goods move around in the UK and the wider world. We are proud to be part of that future.

<https://www.coventry.ac.uk/research/areas-of-research/institute-for-future-transport-and-cities/our-research/future-mobility/>



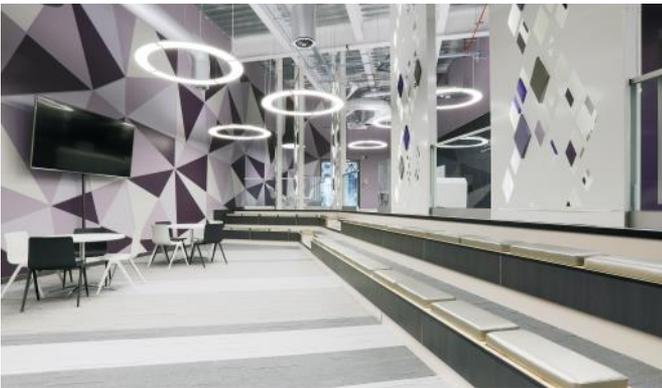
[VISIT THE WEBSITE FOR MORE INFORMATION](http://www.coventry.ac.uk/research/areas-of-research/institute-for-future-transport-and-cities/our-research/future-mobility/)

[RETURN TO THE INDEX](#)

CATAPULT

Compound Semiconductor Applications

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TEST & CERTIFICATION FACILITIES

Compound Semiconductor Applications (CSA) Catapult is focused on bringing compound semiconductor applications to life in three key areas: the road to Net Zero, future telecoms and intelligent sensing.

CSA Catapult is a Not for Profit organisation headquartered in South Wales. It is focused on three technology areas: Power Electronics, RF & Microwave and Photonics. As well as the three technology areas, CSA Catapult is also working in Advanced Packaging for these high-power innovations.

The next wave of emerging applications will have an enormous impact on our lives. Compound semiconductors will enable a host of new and exciting applications in the electrification of transport, clean energy, defence and security and digital communications markets.

CSA Catapult exists to help the UK compound semiconductor industry grow and collaborates across the UK and internationally.

[RETURN TO THE INDEX](#)



Telephone	00 8000 286 6467)
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Website	www.cumminseurope.com

Cummins Inc

Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service a broad portfolio of power solutions. The company's products range from diesel and natural gas engines to hybrid and electric platforms, as well as related technologies, including battery systems, fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems.

Headquartered in Columbus, Indiana (U.S.A.), since its founding in 1919, Cummins employs approximately 62,600 people and serves customers in approximately 190 countries and territories through a network of approximately 600 company-owned and independent distributor locations and over 7,600 dealer locations.

Cummins Distribution Europe

Cummins has strong distribution across Europe, providing new equipment sales and full aftermarket support across its product range of engines and generator sets for a wide range of applications and market segments. This includes the provision of service, repairs and maintenance, and the supply of parts and engine consumables.

Cummins delivers specialist support expertise for all Cummins powered applications across each market segment through an extensive distribution network covering all European countries.

- Engines and Generator Sets
- Genuine Cummins parts and engine consumables
- European sales and service network
- Engineering and technical support
- Maintenance and repairs
- Workshop and field-based support



TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)



**Driving the
Electric Revolution**
Industrialisation Centres

The Driving the Electric Revolution Industrialisation Centres is a UK-wide project to accelerate delivery of Power Electronics, Machines and Drives (PEMD) solutions for the global market.

The centres form a network of Power Electronics, Machines and Drives (PEMD) expertise across the UK. They connect industry with researchers to develop and scale up PEMD technologies and manufacturing processes.

The centres were set up by UK Research and Innovation, as part of the Driving the Electric Revolution Challenge. The centres have access to over £300m of PEMD equipment for developing, testing and manufacturing products.

In addition, the centres are investing £28M in new state-of-the-art open-access equipment to help grow the UK supply chain and fill gaps in the UK's current capability. The centres will make the UK globally recognised as the centre of excellence in the PEMD manufacturing process.



<https://www.der-ic.org.uk>

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South West & Wales	0744 3987463	amar.abid-ali@csa.catapult.org.uk

VISIT THE WEBSITE FOR MORE INFORMATION

[RETURN TO THE INDEX](#)

Embedded Success



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Website	www.dspace.co.uk

Accelerating Your Success

All over the world, wherever engineers are working on cars and planes, dSPACE is involved. Why? Because our hardware and software solutions accelerate the development and testing of mechatronic control systems. And because efficiency and productivity are more important than ever before.



dSPACE is the world's leading provider of technology for the development and test of electronic control systems. Used by every OEM and Tier One supplier worldwide, we have a significant range of products. They cover the areas of:



- Hardware in the Loop Testing
- System Architecture
- Controller Design
- Rapid Control Prototyping
- Automatic Production Code Generation
- Virtual Validation
- Data Management
- Engineering
- Test Benches

DEVELOPMENT TOOL SUPPLIER - TEST & CERTIFICATION FACILITY

[RETURN TO THE INDEX](#)



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Eatron Technologies is an Intelligent Software products and solutions company specializing in Electric and Autonomous vehicles. With an HQ in Warwick and R&D Centre in Istanbul, our global engineering team brings together a unique combination of skills from automotive, controls, software, electronics, AI and machine learning.

Who We Are

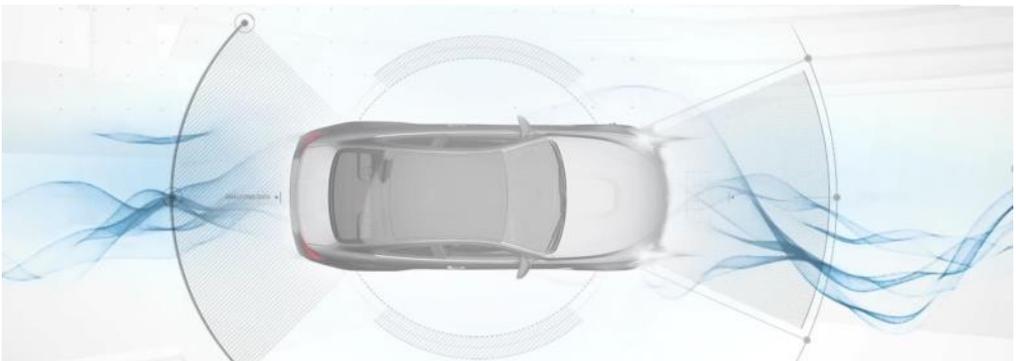
We are an international team of automotive software and controls engineers who are passionate about developing cutting edge technologies.

What We Do

We develop intelligent software products and solutions for electric and autonomous vehicles. Our solutions include Battery Management Systems (BMS) and Automated Driving Assistance Systems (ADAS).

Why Work With Us

Our global engineering team brings together a unique combination of skills from automotive, controls, software, electronics and machine learning. We have delivered over 20 projects in Electric Vehicle Controls, Battery Management Systems and ADAS to automotive companies and OEMs.



AUTOMOTIVE CONSULTANCY - TIER 2 - COMPONENT DEVELOPERS & SUPPLIERS

[RETURN TO THE INDEX](#)



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Founded in 1999 by several of the world's top reliability and safety experts, exida is the world's leading product certification and knowledge company specializing in automation system safety, alarm management, cybersecurity, and availability.

With over 20 locations worldwide, exida's global presence ensures there is always someone close by ready to help your team be successful.

Companies around the world turn to exida for help and guidance related to functional safety, alarm management, and control system cybersecurity standards implementation.

Our team of industry leading engineers have over 500 years of combined knowledge, with extensive experience in Chemical, Petro-Chemical, Oil & Gas, Subsea, Metals and Mining, Pharmaceutical, Pulp & Paper, Power Utilities, Automotive, Robotics, and Machinery applications. This unique combination of technical depth and hands on experience enables exida to provide practical solutions to address your most difficult challenges.

exida is the choice of leading companies when it comes to implementing and achieving compliance to the global standards relating to the IEC 61508 and IEC 61511 standards for functional safety for the process industry; IEC 62443 for industrial control system cybersecurity; ISA-18.2 for alarm management; ISO 26262 for functional safety of automotive, IEC 62061 and ISO 13849 for safety of machinery, and ANSI/RIA 1506 for robot safety.

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)



Telephone	+44 (0) 1672 541546
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Website	www.feabhas.com

We can help you improve your embedded software development skills.

Feabhas already improves the embedded software development skills within the world's leading electronic companies, such as Samsung, Arm, HP and Intel.

They rely on Feabhas competency assessments, face-to-face training, and consultancy, to help their embedded software developers and engineers to:

- Increase product quality and speed to market
- Reduce product failures caused by bugs
- Stay at the forefront of best practice for embedded systems development and testing.

As a result, these organisations are better placed to:

- Recruit talented software developers and identify skills gaps
- Provide practical ongoing learning and development from industry experts
- Measure the impact of the training received.

Choosing Feabhas as your partner for embedded software development improvement gives you access to:

- On-site team training, around the globe
- Public training for individual engineers in the UK
- Pre and post course assessments
- Graduate training programs
- Re-skilling from other software development and engineering disciplines

The range of embedded software training includes courses for:

- Programming languages (C, C++, and Python)
- Operating systems
- Infrastructure technologies
- Quality
- Agile for Embedded

Feabhas Ltd
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AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)



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Who we are

Frazier & Deeter was established in Atlanta, Georgia and is now one of the largest accounting and advisory firms in the United States. We are an award-winning firm with deep technical expertise and an even deeper devotion to our clients.

In 2019 we opened our London office with the same values and the same approach to client service that has underpinned our success in the US. We offer a full range of tax, audit, accountancy and advisory services to businesses in the UK backed by our brand promise of Investing in Relationships to Make a Difference™.

A Different Approach to Global Accounting

Frazier & Deeter brings a new business model to the global

accounting profession. Even though traditional firms operate as one global brand they are each independently owned and operated firms within their respective countries. This creates challenges for middle market companies doing business across borders. Our common ownership structure and single firm approach means we are uniquely positioned to support businesses with activities in both the UK and the US. We've eliminated competition for resources and communication challenges that are typical within traditional accounting firms.

What we do

Frazier & Deeter's experienced advisers help our clients achieve success around the globe. We are specialists with deep expertise in tax, audit, accountancy and advisory services.

Who we serve

Frazier & Deeter UK serves companies of all sizes and industries. We are particularly experienced at helping entrepreneurial companies and growth companies seeking to expand in the UK and the US.

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

Green Hills Software is the world's leading supplier of safety and security certified software products and services for the embedded and IoT marketplaces.

For over 39 years Green Hills Software has helped clients solve the most difficult design challenges by delivering unmatched knowledge, cross-industry expertise, a proven portfolio of ISO 26262 ASIL qualified products and unequalled cybersecurity solutions and expertise to the automotive market.

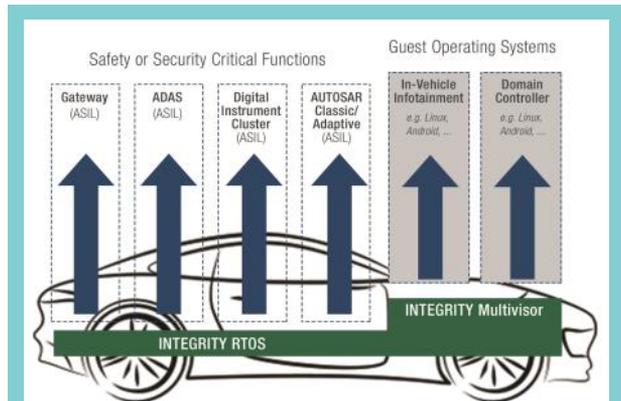
Green Hills Software and its subsidiary INTEGRITY Security Services (ISS) provide secure software platforms to address the Connected Car (C2X), Instrument Clusters, ADAS/AD, Secure Gateways, Infotainment and Powertrain.

The INTEGRITY operating system and INTEGRITY Multivisor virtualization (running guest Linux, Android and other operating systems) enable the consolidation of applications at differing levels of safety and security (e.g. Cluster + AUTOSAR + Infotainment).

In combination with the MULTI Integrated Development Environment, these platforms are ISO 26262 ASIL D compliant. Also, with the ISS cryptographic toolkits, secure OTA updates and key management infrastructure these secure software platforms provide end-to-end security in the increasingly connected and threatened automotive market.



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Email	mktg-europe@ghs.com
Website	www.ghs.com



The combination of safety-certified INTEGRITY RTOS and its Multivisor secure virtualization provide the trusted foundation for a single scalable platform to consolidate multiple cockpit domains concurrently utilizing Linux, Android and RTOS applications, all on the same processors.

AUTOMOTIVE CONSULTANCY - DEVELOPMENT TOOL SUPPLIER - TIER 2 COMPONENT DEVELOPER & SUPPLIER

[RETURN TO THE INDEX](#)



Helix Technologies is developing a range of compact, high-performance, dielectric-loaded ceramic antennas for use in a wide range of demanding telecommunications and navigation applications.

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Email	info@helixtechnologies.co.uk
Website	helixtechnologies.co.uk

The use of the ceramic core enables the fabrication of antennas that are physically smaller than conventional antennas, behave much more effectively and predictably in a wide range of challenging user

scenarios and have many compelling technical advantages which include:-

- Maintaining radiation efficiency near absorbing objects (e.g. such as the human body)
- Improving the accuracy of GNSS systems in multi-path environments (e.g. in cities)
- Operation in sub-optimal orientations towards the sky
- Are able to be placed into very tightly integrated systems
- Operation in slim-devices without a ground plane
- Unsurpassed gain/efficiency per unit of volume
- Simple and robust design and construction for durability and reliability
- Un-rivalled beam-width (omni-directionality)
- Multi-frequency, tailored frequency response

These characteristics make the dielectric-loaded, multi-filar helix antenna a compelling choice for a wide range of demanding telecommunications and navigation applications including Internet of Things (IoT), GNSS, autonomous vehicles/driverless cars (GNSS/V2X/DSRC), drone delivery platforms, LEO satellite communications, personal body-worn devices and Machine-to-Machine (M2M) and any other scenarios where there is downward pressure on device size, weight and power (SWAP).

TIER 2 COMPONENT DEVELOPER & SUPPLIER

[RETURN TO THE INDEX](#)



What we do

We're the government company which plans, designs, builds, operates and maintains England's motorways and major A-roads, known as the strategic road network (SRN).

We manage and improve the strategic road network to make journeys safer, smoother and more reliable. Our priorities are safety, customers and delivery.

Telephone	0300 123 5000
Email	info@highwaysengland.co.uk
Website	www.highwaysengland.co.uk

Safety

We want everyone who uses and works on our roads to get home safe and well. By planning and designing roads that meet the highest levels of safety, we can reduce the number of fatal or serious injuries. Our roads are some of the safest in the world. Our traffic officers, who patrol them 24/7, are at the frontline of keeping you safe. They're supported by control room operators through activities such as setting signs and signals to alert you to hazards in the road.

We also run regular safety campaigns to inform and educate people how to drive safely on our roads.

Customers

With more than four million journeys taking place daily, our roads play a vital part in many people's lives. We recognise that you may have concerns and expectations related to our work and we want to hear your views.

We work closely with Transport Focus, the UK's independent consumer watchdog, to share information and collaborate on research. Their Strategic Roads User Survey provides us with a wealth of insight – from journey time, surface quality and roadworks management to roadside information and safety. We use this information to help meet your needs and expectations.

We also run our own customer panel, and offer other ways for you to share your views with us such as events and exhibitions, roadwork drive-throughs, social media and community insight apps. You may also have seen our customer 'chatty van' at your local retail park or community centre.

[VISIT THE WEBSITE FOR MORE INFORMATION](#)

[RETURN TO THE INDEX](#)



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HORIBA MIRA is a global provider of pioneering engineering, research and test services to the automotive, defence, aerospace and rail sectors. We work in close

collaboration with vehicle manufacturers and suppliers around the world, providing comprehensive support ranging from individual product tests to turnkey multi-vehicle design, development and build programmes.

With over 70 years' experience in developing some of the world's most iconic vehicles, our engineers utilise the latest test facilities and simulation tools to improve lives by making journeys safer, cleaner and smarter. Our suite of 40 major test facilities, 100km of specialised proving ground and wealth of engineering experience, combined with our expanding international presence, means we are confident that we can achieve our vision – that every journey in the world will be positively influenced by us.

Progress towards achieving our vision has been significantly accelerated through the creation of MIRA Technology Park, Europe's largest transport technology R&D cluster, where a purpose-designed campus with proximity to world-class facilities and engineers allows companies to develop competitive products quickly and cost-effectively.



AUTOMOTIVE CONSULTANCY - POWERTRAIN CONSULTANCY - TEST & CERTIFICATION FACILITY

[RETURN TO THE INDEX](#)



Infineon Technologies AG is a world leader in semiconductor solutions that make life easier, safer and greener.

Microelectronics from Infineon are the key to a better future. In the 2020 fiscal year (ending 30 September), Infineon reported revenue of more than €8.5 billion with a workforce of some 46,700 people worldwide. Following the acquisition of the US company Cypress Semiconductor Corporation in April 2020, Infineon is now a global top 10 semiconductor company.

Infineon is listed on the Frankfurt Stock Exchange

(ticker symbol: IFX) and in the USA on the over-the-counter market OTCQX International Premier (ticker symbol: IFNNY).

The world's swelling population, more and more megacities and the rising demand for energy is prompting us to rethink many aspects of our modern lifestyle. Here at Infineon, we combine entrepreneurial success with responsible action to make life easier, safer and greener.

Barely visible, semiconductors have become an indispensable part of everyday life. Ranked one of the global top 10 semiconductor companies, we play a key role in shaping a better future – with microelectronics that link the real and the digital world. Our semiconductors enable efficient energy management, smart mobility, as well as secure, seamless communications in an increasingly

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TIER 2 - COMPONENT DEVELOPERS & SUPPLIERS



Delivering Solutions through technology and partnership

Jaltek is a leading electronics technology solutions provider, based in the UK, offering a comprehensive range of vertically integrated design and manufacturing services tailored to meet our customer's highly diversified business requirements.

We offer a tool box of solutions which can either be utilised as a fully integrated solution or a single service. From conceptual design, PCB Layout and NPI, through manufacturing and test of PCBA's, to final product realisation, Jaltek supports products through-out their complete lifecycle.

- 3 SMT lines with 1 dedicated to NPI & Prototyping
- PCB Layout
- Selective Solder and Manual Assembly workmanship standards up to IPC-A-610 C Class 3
- Conformal Coating
- Cable Assembly
- Pressfit
- Extensive test suite
- X-ray
- State-of-the-art 3D inspection
- Box-build & High Level Assembly
- System Integration

Telephone

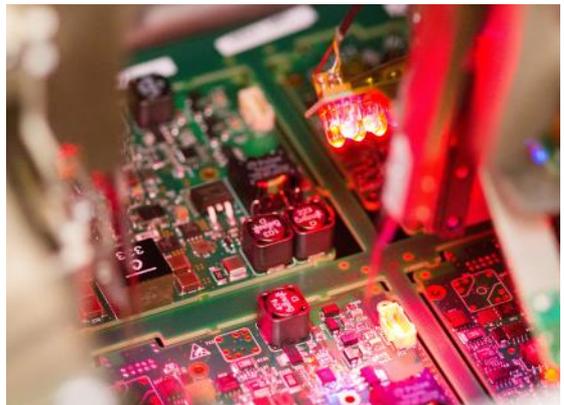
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**TEST & CERTIFICATION FACILITY -
TIER 2 COMPONENT DEVELOPER & SUPPLIER - VEHICLE COMPONENT SUPPLIER**

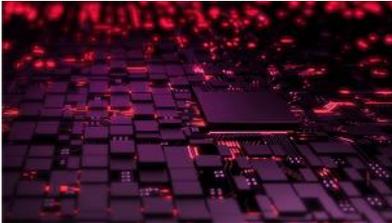
[RETURN TO THE INDEX](#)



Telephone

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www.keysight.comcontactcentre_uk@keysight.com

Design.

Changing the world starts with having the right tools. Speed through the development cycle with PathWave design and simulation software. Then, confidently validate your prototypes with Keysight instruments and application software.



Build.

Bring your innovations to life with early-market solutions born out of Keysight's ongoing leadership in standards bodies, industry-focused technology research, and deep measurement expertise.



Deliver.

Shift from manual to machine-led QA when you apply AI and machine learning. Deliver DevOps at scale and optimize your UX. Enabled by Eggplant.



Engage.

Staying at the forefront of fast-paced technology industries requires continuous learning. Keysight's events around the world help you keep up with the ever-evolving landscape, wherever you are.

TEST & CERTIFICATION FACILITIES

[RETURN TO THE INDEX](#)

KPIT

Reimagining mobility with you for creation of a cleaner, smarter & safer world

KPIT is a global technology company with software solutions that will help mobility leapfrog towards autonomous, clean, smart and connected future. With 6000+ Automobelievers across the globe, specializing in embedded software, AI & Digital solutions, KPIT enables customers accelerate implementation of next generation mobility technologies. With development centers in Europe, Americas, Japan, China, Thailand and India – KPIT works with leaders in mobility and is present where the ecosystem is transforming.

An Independent Software Integration Partner to Global Automotive Leaders

- Focused on Automotive & Mobility
- Worldwide footprint with Direct presence in Germany, Americas, Japan, India, Korea, China
- Only embedded software company with deep domain expertise across CASE (Connected, Autonomous, Shared, Electrified) domains
- Key Strategic clients and alliances in the Mobility ecosystem



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TIER 2 - COMPONENT DEVELOPERS & SUPPLIERS

LGN is an edge AI software vendor, founded by leading MIT and Oxbridge academics, backed by the world's top mobility investors, with commercial operations in the UK, US and Europe.

Unique, patent pending technology

LGN views the world through a unique latent space "lens". A compact yet powerful description of space and temporal observations that's optimised for AI-to-AI communications.

This core latent space technology allows us to efficiently detect interesting and surprising elements of a scene, optimally compress data for AI and increase the resiliency of AI systems.

Inspired by the human perception system

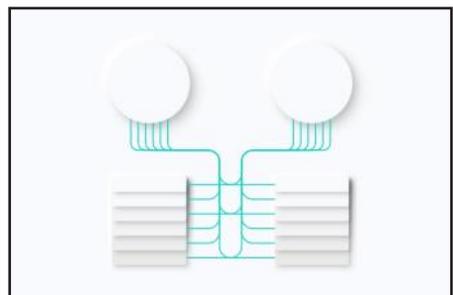
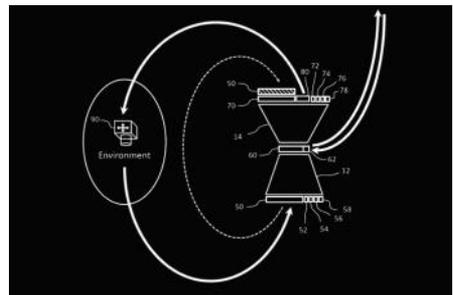
The name LGN is a compressed representation of INTELLIGENCE. It was inspired by the Lateral Geniculate Nucleus, a relay that sits in between the retina and visual cortex in our brains, filtering information and directing our attention.

As sensor deployments and data volumes grow exponentially, the need to filter and direct attention on the important information is accelerating.

LGN's core technology can be understood as an artificial Lateral Geniculate Nucleus for artificial intelligence.



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DEVELOPMENT TOOL SUPPLIERS

[RETURN TO THE INDEX](#)



For over 30 years McLaren Applied has led the digital transformation of motorsport through electronics and data systems, and now also develops innovative technologies that drive positive, sustainable change in automotive, transport, and beyond.

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Website	www.mclaren.com/applied

We guide industries forward by developing world-class products and holistic, scalable solutions that harness our expertise in telemetry, control and analytics and electrification.

We are accelerating the drive to an electrified and sustainable future. By developing scalable electrification products for all mobility solutions, as well as safety-critical systems in energy storage and power delivery, we empower you with hybrid and electric systems that push the boundaries of performance.

Our sensing, connectivity, and highly customised real-time control and compute systems, enable us to derive clear and robust insights, so you can understand complex environments, improve decision making and reduce development time.

We're at the cutting edge of innovation creating solutions that drive efficiency and cost-effectiveness. We want to help to reduce the carbon footprint and become more sustainable.

By applying our expertise, we deliver real benefits and pioneer a better future.

To find out more about how we can meet your automotive needs and exceed your expectations, email applied_enquiries@mclaren.com or telephone +44 (0) 1483 261400 for the UK and worldwide.



TIER 1 SYSTEMS DEVELOPER AND INTEGRATOR - TIER 2 COMPONENT DEVELOPER AND SUPPLIER

[RETURN TO THE INDEX](#)



POWERTRAIN TEST



ADAS TEST



END-OF-LINE TEST



INFOTAINMENT TEST AND V2X SYSTEMS



HARDWARE IN THE LOOP



DATA MANAGEMENT AND ANALYSIS

DEVELOPMENT TOOLS
SUPPLIER - TEST &
CERTIFICATION
FACILITY



A new era of mobility is upon us. Overcome the pressure of rapidly changing test requirements by using an open and easily upgradable platform that is designed for test system flexibility.

POWERTRAIN TEST: Automotive engineers testing EV, ICE, and Hybrid powertrains can use NI solutions to test earlier in the design cycle, increasing test coverage and decreasing test cost.

ADAS TEST: Perform automotive testing that can natively integrate all the I/O types you need to properly test advanced driver assistance systems (ADAS) technology.

END-OF-LINE TEST: Test vehicle components to ensure a high-quality product while maximizing the speed of your production line.

INFOTAINMENT TEST & V2X SYSTEMS: NI offers a single, software-defined, platform-based approach to automotive testing that can natively integrate all the I/O types you need to test today's and tomorrow's technology.

HARDWARE IN THE LOOP: Test engine control units (ECUs) in a virtual environment to ensure maximum test coverage for minimum cost.

DATA MANAGEMENT & ANALYSIS: Intelligently standardize, analyze, and report on large amounts of data with NI data management software.

Telephone	01635 523545
Email	info.uk@ni.com
Website	www.ni.com/en-gb/

[RETURN TO THE INDEX](#)



Nordson Corporation delivers precision technology solutions to help customers succeed worldwide

We engineer, manufacture and market differentiated products used for dispensing adhesives, coatings, sealants, biomaterials and other materials; for fluid management; for test and inspection; and for UV curing and plasma surface treatment. We support our products with application expertise and direct global sales and service. The Nordson company serves numerous consumer non-durable, durable and technology end markets including packaging, nonwovens, electronics, medical, appliances, energy, transportation, construction, and general product assembly and finishing. Founded in 1954 and headquartered in Westlake, Ohio, USA, we have operations and support offices in more than 35 countries.

Nordson Corporation is organized into two global operating segments.

ADVANCED TECHNOLOGY SOLUTIONS

Integrates proprietary product technologies found in customer production processes, such as surface treatment, precisely controlled dispensing of material and post-dispense test and inspection. Components include single-use plastic moulded syringes, cartridges, tips, fluid connection components, tubing, balloons and catheters.

INDUSTRIAL PRECISION SOLUTIONS

Delivers proprietary dispensing and processing technology to diverse end markets. Product lines commonly reduce material consumption, increase line efficiency, and enhance product brand and appearance. Components are used for dispensing adhesives, coatings, paint, finishes, sealants and other materials.

Telephone	Via the Website
Email	Via the Website
Website	www.nordson.com

TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)



The North East is renowned for automotive manufacturing region accounting for 1/3rd of UK passenger vehicles, 20% of Europe's electric passenger vehicles, 10% of all UK non-highway vehicles and produce 325,000 engines.

It is home to a globally competitive supply chain has 28 Tier1 suppliers and a wealth of specialist SMEs and numerous R&D centres. These total over 240 companies and account for 26% of the regions manufacturing jobs; and generate over £11bn of sales.

The North East Automotive Alliance (NEAA) was established in March 2015 to support the sustainable economic growth and competitiveness of the North East automotive sector.

The NEAA is the largest automotive cluster in the UK and is widely recognised as the exemplar cluster. The NEAA provides a unparalleled collaborative network where companies find benefit from leadership and co-ordination of activities of mutual benefit. Today, over 160 industrialists provide over £500,000 of in-kind support to NEAA activities through 13 industry working groups covering 5 key thematic areas of Network & Connectivity, Business Competitiveness, Skills, Innovation & Technology and Trade & Investment. These groups have provided the catalyst for a level of collaborative working that drive the sector forward.

Our vision is for the North East to be to be recognised as a true automotive powerhouse which encompasses a very dynamic, forward looking and competitive supply chain; and incorporates strengths in research, development and innovation in new automotive technologies and manufacturing processes.

Telephone	+44 191 516 4400
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Website	www.northeastautomotivealliance.com

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

NOVA MODUS

Nova Modus developed the consortia and bid submissions for 4 of the UK's multi-million pound collaborative research and development projects in Connected & Autonomous Vehicles.

With a background in electronics, and in bringing new technologies to market, NVM is supporting partners throughout the projects with advice on markets and the CAV industry, exploitation and commercialisation of R&D outcomes.

Telephone

+44 7968 160453

Email

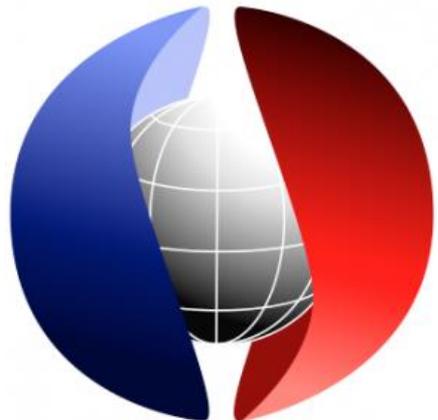
john.mcnicol@nova-modus.com

VENTURER – Testing Driverless Cars in Bristol and the West of England
www.venturer-cars.com

INSIGHT – Demonstrating autonomous shuttles in pedestrian environments, and for the visually impaired www.insight-cav.com

CAPRI – Developing a 'market ready' mobility service based on autonomous shuttles, with operational and legal recommendations

ROBOPILOT – An all-electric light commercial vehicle demonstrating Level 4 autonomous driving on all types of urban roads



AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

NPL



Telephone	+44 20 8977 3222
Email	andre.burgess@npl.co.uk
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NPL is the UK's National Metrology Institute, providing the measurement capability that underpins the UK's prosperity and quality of life. NPL's work on Connected and

Automated Mobility has focused on building collaborations across the UK's CAV sector to establish an integrated digital measurement infrastructure and technical framework to support the development, testing, certification and operational assurance of CAVs.

This includes projects funded by CCAV on Sensor performance: identifying the requirements, infrastructure and facilities needed to enable reliable CAV sensor testing and validation, which can also support a safety evaluation and assurance programme. This includes new methodologies, standards, performance criteria and physical facilities – in particular, the key steps needed to be undertaken to characterise the performance of a typical sensor system (under a wide range of environmental conditions).



TEST & CERTIFICATION FACILITIES

[RETURN TO THE INDEX](#)

Leading the transformation towards safe and securely connected mobility

NXP's domain-based architecture intelligently groups together the functions that let cars sense, think, and act-to manage complexity and separate concerns related to security, upgradability, and functional safety.

ADAS and highly automated driving: Enabling the capabilities of sensing and thinking, while ensuring the safe and secure operation of the vehicle.

Infotainment & In-Vehicle Experience: Delivering high-performance next-generation infotainment systems for a safer, more convenient, and enjoyable user experience.

Connectivity: Enabling vehicles to interact with each other and with the infrastructure- for safer, greener, and more efficient roads.

Body and comfort Versatile and adaptive vehicle features that ensure the safety and comfort of everyone on board.

Powertrain and vehicle dynamics Improving fuel economy and enhancing performance with robust and safe automotive qualified solutions.

Vehicle networking: Securely connecting and upgrading everything in the vehicle for an improved user experience.

Functional safety and automotive security: At the heart of automotive innovation, our functional safety and security programs are essential to make self-driving cars a reality.

Find out more at www.nxp.com



Telephone	Contact via the website
Email	Contact via the website
Website	www.nxp.com



TIER 2 COMPONENT DEVELOPER AND SUPPLIER

ON Semiconductor®



Telephone	00421 33 790 2910
Email	Contact via the website
Website	www.onsemi.com

ON Semiconductor (Nasdaq: ON) is driving energy efficient innovations, empowering customers to reduce global energy use.

The company is a leading supplier of semiconductor-based solutions, offering a comprehensive portfolio of energy efficient power management, analog, sensors, logic, timing, connectivity, discrete, SoC and custom devices. The company's products help engineers solve their unique design challenges in automotive, communications, computing, consumer, industrial, medical, aerospace and defense applications. ON Semiconductor operates a responsive, reliable, world-class supply chain and quality program, a robust compliance and ethics program, and a network of manufacturing facilities, sales offices and design centers in key markets throughout North America, Europe and the Asia Pacific regions.

What We Do

- Provide a comprehensive portfolio of energy efficient solutions
- Help customers solve their unique design challenges
- Empower design engineers to reduce global energy use
- Operate a responsive, reliable world-class supply chain and quality program
- Maintain global environmental sustainability and social responsibility programs



**Automotive
Solutions**



**Internet of Things
Solutions**



**Industrial & Cloud
Power Solutions**

TIER 2 - COMPONENT DEVELOPERS & SUPPLIERS

[RETURN TO THE INDEX](#)



Telephone	+44 (0)1223 739782
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Paragraf has perfected a proprietary process for depositing single-atom thick, two-dimensional materials, including graphene, directly onto silicon, silicon-carbide, sapphire, gallium-nitride and other semiconductor-compatible substrates. The contamination-free technology is scalable, and compatible with existing electronic device manufacturing processes.

Serving the sensor, energy harvesting and semiconductor markets, Paragraf has developed its own Hall-Effect Sensors for measuring magnetic fields in demanding environments. It is now partnering with electronic device makers to enable them to take advantage of the unique properties of graphene.

Based near Cambridge, U.K., Paragraf was a spin-out from the Department of Materials Science at Cambridge University. At our custom R&D and production facility we produce the highest-quality large-area graphene, and develop step-change graphene-based technologies utilising our expertise in:

- Thin film materials production
- Solid state structure and device processing
- Novel material product application

Working in partnership with others, we are using our materials in the development of devices and processes driving revolutionary technological advances in commercial applications.

Telephone	0808 1800 358
Email	info@phaedrus.com
Website	www.phaedrus.com

As the Internet of Things begins to explode, it is clear that system security is becoming a priority. As the UK's leading specialist in supporting engineers at all stages of embedded safety critical and

high-integrity projects, Phaedrus Systems is uniquely positioned to work with companies to create the development process best matched to their needs.

Consultants have experience working on automotive, rail and aerospace applications, meeting standards such as IEC 61508 SIL4, and D0178B.

When it is appropriate Phaedrus will recommend other tools than those it represents. The website also holds an expanding library of documents covering the issues in developing secure systems.

Backing this are tools for all stages of a project

- Requirement definition
- Capture
- Modelling and tracking
- Estimation software
- SIL3 RTOS and run-time RTOS analysis tools
- Hi-rel embedded database
- Software and compiler analysis
- Middleware including SSL stack
- Test, verification and debugging tools



When it is appropriate Phaedrus will recommend other tools than those it represents. The website also holds an expanding library of documents covering the issues in developing secure systems.

DEVELOPMENT TOOLS SUPPLIER - VEHICLE COMPONENT SUPPLIER

[RETURN TO THE INDEX](#)



Billions, maybe trillions of times a day...

That’s how often people around the world touch something made better by Qualcomm. It could be the smartphone in your pocket, the tablet on your coffee table, that wireless modem in your briefcase... it could even be that navigation system in your car or that action camera strapped to your chest.

Telephone	+44 (0)1223 478900
Email	Email via the website
Website	www.qualcomm.com

Who is Qualcomm, and what do we do? We are engineers, scientists and business strategists. We are from many different countries and speak many different languages. We come from diverse cultures and have unique perspectives. Together, we focus on a single goal—we invent breakthrough technologies that transform how the world connects, computes, and communicates.

While many of our breakthroughs reside “under the hood” of technology familiar to us today, our inventions have transformed the world in a big way. They have helped propel mobile to the forefront of the technology world and brought wireless innovations into new industries. They have created new opportunities for ecosystem players—the wireless device makers, the operators, the developers and the content creators of the world. And more recently, our inventions and breakthroughs have inspired fresh, new ideas from those companies—large and small.

We’ve been called dreamers, inventors, rebels, risk takers, pioneers and geeks. We embrace those labels because in many ways, they’re true. We dream big. We invent bigger. And most importantly, we often do what many thought was impossible.



DEVELOPMENT TOOLS SUPPLIER - VEHICLE COMPONENT SUPPLIER

[RETURN TO THE INDEX](#)



Telephone	0141 330 2338
Email	info@quantic.ac.uk
Website	www.quantic.ac.uk

QuantIC is the UK Quantum Technology Hub in Quantum Enhanced Imaging. We bring together industry and academia in a collaborative venture to revolutionise

imaging across industrial, scientific and consumer markets.

Established in 2014, we are one of four Hubs that are part of the Government's National Quantum Technology Programme set up to exploit the potential of quantum science and develop a range of emerging technologies.

We do this through:

- Facilitating collaborations. Our Partnership Resource Fund supports industry-led projects and two-way staff secondments.
- Industrial PhD Studentships. We have a pipeline of talented individuals working on research projects designed to develop both academic and technical excellence in the next generation of quantum engineers.
- Providing a dedicated innovation space. Companies can work alongside our researchers to develop new technology prototypes.



[VISIT THE WEBSITE FOR MORE INFORMATION](http://www.quantic.ac.uk)

[RETURN TO THE INDEX](#)



Quantum Power Transformation is a revolutionary start-up with a vision to help the world consume energy more efficiently through the development of unique IP that focusses on advanced, more efficient “power conversion” solutions.

Our initial focus is to to develop and patent power conversion solutions that significantly increase the efficiency of power consumption, reliability and performance of servers, laptops and mobile devices. However our patented technologies created to realise this vision make up our “Advanced Power Solutions”

portfolio which would additionally benefit almost any consumer or industrial based electronic system; reducing power consumption, increasing efficiency and the reliability of power systems.

Advanced Power Solutions

Our unique IP will become the building blocks of next-generation power systems. Our devices are faster, more efficient, intelligent, smaller and durable than anything on the market.



Next-Gen Power Development Solution

Our Next-Gen Power Development Solution enables the development of power solutions with a time to market that is between 10 and 100 times faster and more cost effective than any system available on the market today.



Telephone	Via the website
Email	info@qptransformation.com
Website	www.q-p-t.com

[VISIT THE WEBSITE FOR MORE INFORMATION](#)

[RETURN TO THE INDEX](#)



Telephone

Via the Website

Email

Via the Website

Website

www.r4dartech.com

R4DAR is a disruptive player in the autonomy landscape. With advanced technology beyond the usual tech start up, R4DAR is currently planning the next stage in business development.

GROUNDBREAKING TECHNOLOGY

Would you entrust your life in an autonomous vehicle? We have a Globally resilient, safer solution to enable autonomy with less risk and less infrastructure cost than current technology propositions.

CUTTING EDGE IMAGING & IDENTIFICATION FEATURES



Innovative Radar Design

Imaging radar that directly reads tags



Unique Tag Solution

Tech that enables easy market adoption



Disruptive Combined Solution

Safety solution ripe for exploitation

TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)

RDM GROUP

RDM Group, formed in 1993, supplies world class products and engineering services to the automotive industry.

Telephone	02476635818
Email	dkeene@rdmgroup.co.uk
Website	www.rdmgroup.co.uk

We have developed an excellent reputation and track record as a tier 1 supplier for high quality, innovative engineering solutions. RDM supplies some of the world’s best known vehicle OEM’s and their suppliers. We are IATF16949 accredited and operate to ISO 26262 automotive safety standards.

RDM Group has offices in the UK, Australia, USA and Canada. We offer clients ground up vehicle design, development and manufacturing services, product design and engineering consultancy services.

Specialist services include – Electronics design, Software engineering, EV systems development, EDS services, Safety critical systems development, Autonomous vehicles and systems, Specialist vehicle build services, Styling and model development, Wiring harness manufacture, Trim manufacture, Carbon fibre parts manufacture, Aluminium machining, Mechanical engineering etc.

AUTOMOTIVE CONSULTANCY - TIER 1 – SYSTEM DEVELOPERS & INTEGRATORS - TIER 2 – COMPONENT DEVELOPERS & SUPPLIERS - VEHICLE COMPONENT SUPPLIER

[RETURN TO THE INDEX](#)



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Reed Mobility is an independent research consultancy founded and run by Prof. Nick Reed. Nick was formerly Academy Director at TRL (the UK's Transport Research Laboratory), responsible for research and innovation across the business.

In 2017, he was recruited by Bosch (the world's largest automotive supplier) to lead global R&D activities in urban mobility, working with cities worldwide to develop new transportation products and services. Having led a portfolio of connected and automated vehicle projects worth over £50m, Nick established Reed Mobility in 2019, working locally, nationally and internationally to support organisations in the public, private and academic sectors in delivering safer, cleaner, more efficient, more ethical and more equitable transport systems.

Customers to date include the Department for Transport, European Commission, Transport for London, BSI (British Standards Institution) and RSSB (Rail Safety and Standards Board).

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)



Telephone	+44 (0) 1273 455611
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Ricardo plc is a world-class environmental, engineering and strategic consulting company listed on the London Stock Exchange. With over 100 years of engineering excellence, we provide exceptional levels of expertise in delivering leading edge and innovative cross sector sustainable products and solutions, helping our global customers increase efficiencies, achieve growth and create a cleaner and safer future. Our mission is clear – to create a world fit for the future.

Our work extends across a range of market sectors – including passenger cars, commercial vehicles, rail, marine, aerospace, defence, motorsport, energy and environment – and we are proud to possess a client list that includes transport operators, manufacturers, energy companies, financial institutions and government agencies.

We are the trusted global engineering services partner in clean, efficient, integrated propulsion and energy solutions for a sustainable zero carbon future. Taking a whole lifecycle carbon neutral approach to minimise environmental impact, systems-led thinking, and cutting-edge digital tools we deliver the best possible technology solutions for performance, efficiency, safety and quality with an agility that provides a competitive advantage to our customers.

In addition to our technical consultancy services, we have in-house engineering capabilities that enable us to design and deliver high-quality prototypes and low volume manufacturing of complex products and assemblies, including engines, transmissions, electric motors and generators, battery packs and fuel cell systems.

And, across everything we do, in every assignment we undertake, we remain committed to the ethos of our founder, Sir Harry Ricardo, one of the most innovative engineers of his time, who in 1915 set out on a mission to ‘maximise efficiency and eliminate waste’.



AUTOMOTIVE CONSULTANCY - POWERTRAIN CONSULTANCY

[RETURN TO THE INDEX](#)

ROKE

Telephone	+44 1794 833000
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Roke is recognised as a worldwide centre of R&D excellence.

Roke Manor Research is a world-class electronics engineering consultancy. We enable our clients to maximise their investments in science and technology. Trusted by government and industrial partners worldwide, we deliver technology-based R&D services, provide independent advice, and solve technically challenging problems.

Roke make it our business to understand their clients' key issues to provide end-to-end tailored solutions. With extensive experience in communications systems, electronic sensors, and information assurance and in both the civil and military domains, we understand the technical complexities of modern and future systems. Our team of over 350 engineering consultants develop new concepts, capabilities and systems to protect what matters most to our clients.

Established in 1956, Roke remains a British centre of excellence for world-class innovation and engineering, and was recently awarded a Queen's Award for Enterprise and Innovation. Since October 2010 Roke has been a wholly owned subsidiary of the Chemring Group plc.



AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)



RoodMicrotec has 50 years' experience as an independent value-added microelectronics and optoelectronics service provider. We offer a one-stop shop proposition to fabless companies, OEMs and other business partners.

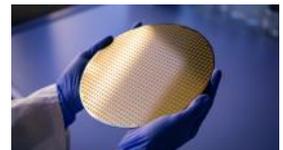
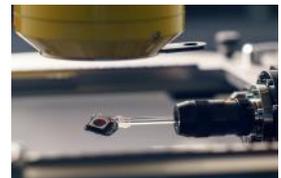
Telephone	+44 7968 948683
Email	Malkit.jhitta@roodmicrotec.com
Website	www.roodmicrotec.com

We have built up a strong position in Europe. Our services comply with the highest industrial and quality

requirements as demanded by the high reliability aerospace & military, automotive, telecommunications, medical, IT and electronics sectors.

Value-added services include:

- Supply Chain Management which includes ASIC design services (working with specialist design partners), silicon manufacture, wafer probe, package, final test and qualification resulting in fully tested parts ready for product manufacture
- Reliability Competence Centre - dedicated support for supply to the automotive market
- Failure & Technology Analysis
- Qualification & Monitoring Burn-In
- Test & Product engineering
- Production Test (including device programming and end-of-line service)
- ESD/ESDFOS assessment & training
- Quality & Reliability
- Consulting



RoodMicrotec has an accredited laboratory for testing and calibration activities in accordance with the ISO/IEC 17025 standard and ISO 9001.

RoodMicrotec has locations in Germany (Noerdlingen and Stuttgart), the Netherlands (Zwolle) and UK (Bath).

AUTOMOTIVE CONSULTANCY - POWERTRAIN CONSULTANCY - TEST & CERTIFICATION FACILITY - TIER 1 SYSTEMS DEVELOPER & INTEGRATOR - TIER 2 COMPONENT DEVELOPER AND SUPPLIER - VEHICLE COMPONENT SUPPLIER



Telephone	+44 (0)333 0115 501
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Website	www.safetty.net

The designs that we support are typically based on low-cost, off-the-shelf microcontrollers, provided by a range of different semiconductor manufacturers (our technology is not tied to any particular hardware platform).

Where required, we help our customers to achieve compliance with one or more international safety standards: ISO 26262, IEC 61508, ISO 13849, IEC 62304, IEC 60730 ...

We offer:

- [SafeTTY Solutions™ packages](#), where we work with our customer's development team to deliver the product software;
- [SafeTTY Outsource™ packages](#), where we perform some or all of the software development activity for our customer;
- Various books and training courses on TT software architectures – and a related staff certification programme;
- Comprehensive design support at all project stages through our flexible consultancy service.

We are a UK company with a worldwide customer base.

At SafeTTY Systems, we help our customers to develop software for reliable space-based systems, automotive systems (including autonomous vehicles), industrial control systems, medical systems, railway systems, sports equipment ...

We do this using an industry-proven engineering process that integrates 'Time-Triggered' (TT) software architectures with patented run-time monitoring techniques.



AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

SIEMENS

Intelligent Traffic Systems (ITS). Smart systems. Smart traffic.

Telephone	+44(0)1202 782000
Email	Email via the Website
Website	www.siemens.co.uk/traffic/en/

On the threshold to the next mobility revolution, which is truly starting to gather momentum now with the rapid progress in the area of self-driving cars, old approaches are coming up against their limits. This is not the only reason, however, why the field of road transport keeps generating new questions that require new answers: smart answers that will help master increasingly complex tasks and simplify ever more complicated issues and open up new opportunities for municipal and regional authorities to actively shape the mobility world for the next generation instead of simply responding to changing conditions.

Re-thinking mobility

The comprehensive consulting expertise of Siemens ITS remains unmatched in the industry. No other company specializing in mobility can rely on such a wealth of experience and in-depth knowledge in all areas related to transport. In addition to a complete range of cutting-edge products for road infrastructure, including intelligent traffic control, management and information systems, the ITS experts working at Siemens bring a multi-modal approach into play. This ability to think outside the box arises from the continuous exchange of ideas with their colleagues from the Siemens Rail Systems units and makes it much easier for them to develop holistic mobility concepts.

To find out more, visit the website: www.siemens.co.uk/traffic/en/



AUTOMOTIVE CONSULTANCY - TIER 1 SYSTEMS DEVELOPER & INTEGRATOR

[RETURN TO THE INDEX](#)

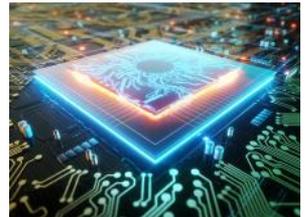
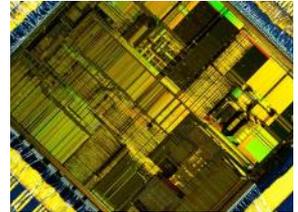
SIEMENS

Siemens EDA

The pace of innovation in electronics is constantly accelerating. To enable our customers to deliver life-changing innovations to the world faster and to become market leaders, we are committed to delivering the world's most comprehensive portfolio of electronic design automation (EDA) software, hardware, and services.

Siemens EDA became the first tech company to tear down the barriers between engineering disciplines to facilitate the design of entire digital ecosystems. Siemens recognized that to develop tomorrow's digital innovations more rapidly, the most successful companies and their suppliers either have adopted or are in the process of adopting a system of systems mindset, in which "the system" is no longer just the IP core your team is developing, or the IC, PCB, the embedded software, the ECU, or even automobile your team is developing. Rather it is all those electrical, software and mechanical systems and the network connecting all those systems integrated into smart business environments, smart factories, smart infrastructure and smart cities – it is the whole ecosystem your enterprise or your customers' enterprises are building.

To find out more, visit the website: <https://eda.sw.siemens.com/en-US/>



Telephone	See the Website
Email	Email via the Website
Website	https://eda.sw.siemens.com/en-US/

[VISIT THE WEBSITE FOR MORE INFORMATION](https://eda.sw.siemens.com/en-US/)

[RETURN TO THE INDEX](#)



SYNERGIE CAD GROUP

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Email	sales@synergie-cad.co.uk
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We are the preferred partner of large and small semiconductor industry players since 1986.

With over 30 years of experience, our **high-performance** solutions maximize **yield improvements** while

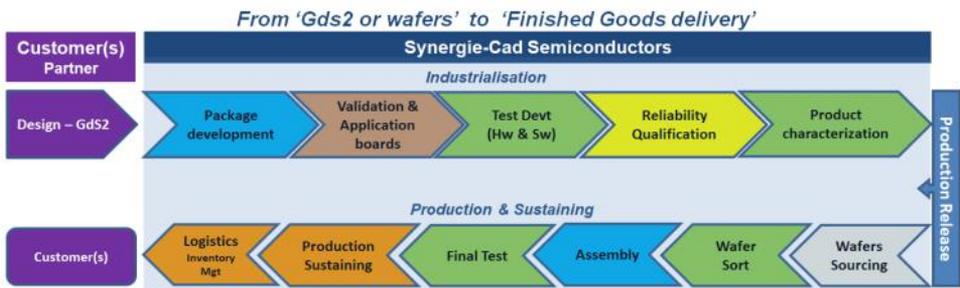
ensuring the most **competitive cost of test** over our product lifetime.

Our **world class engineering expertise** and support teams serve the most **demanding clients** as they bring new technologies to market.

We offer **full turn-key solutions** with global support as a manufacturer of reliability testing equipment and services for your project journey from R&D into production and beyond.

With **exceptional multi-disciplinary team talent**, we offer **innovative and reliable solutions** for your most demanding **next generation technology challenges**.

We employ the latest industry simulation tools to achieve **optimized solutions** that meet the needs of the fast-moving semiconductor industry with **excellence**.



TEST & CERTIFICATION FACILITIES—TIER 1 – SYSTEM DEVELOPERS & SUPPLIERS - TIER 2 – COMPONENT DEVELOPERS & SUPPLIERS

SYNOPSYS®

Fueling the New Era of Smart Everything

Telephone	See the Website
Email	See the Website
Website	www.synopsys.co.uk

Synopsys technology is at the heart of innovations that are changing the way we work and play. Autonomous vehicles. Artificial intelligence. The cloud. 5G. These breakthroughs are ushering in the era of Smart

Everything—where devices are getting smarter, everything's connected, and everything must be secure. Powering this new era of digital innovation are advanced silicon chips and exponentially growing amounts of software content—all working together, smartly and securely. Synopsys is at the forefront of Smart Everything with the world's most advanced technologies for chip design and verification, IP integration, and software security and quality testing. We help our customers innovate from silicon to software so they can deliver Smart Everything.

It's All Powered by Silicon and Software

Emerging and rapidly evolving trends like autonomous vehicles, artificial intelligence (AI), the cloud, and 5G are transforming everything we know about mobility, connectivity, and security—from the way we consume and experience information to how we view data privacy and ensure our personal safety. These innovations are all possible because of complex silicon chips and powerful software code.



DEVELOPMENT TOOL SUPPLIERS

[RETURN TO THE INDEX](#)



Telephone	+44 (0) 1926 675 467
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Website	www.syselek.com

SysElek is a technology innovation company

We think of technology innovation not as a single discipline, but as an intertwining array of physical and virtual factors.

Technologies should co-exist in and with our world, where there are no clear-cut boundaries, and enhancing the impact on people's lives is the ultimate goal. Our technologies and applications are diverse, but these are our principles that link them.

As innovators, we strive for the unknown. Our primary task is to understand and appreciate the challenges of our world and the needs of our society, not reformulate our old ideas. We value open, thoughtful, communication and sharing. We value intelligence, timeliness, and evidence over presentations.

We are fortunate to collaborate with some of the world's leading thinkers in academia and business on some wonderful projects. But innovations should exist for lifetimes, and their effectiveness is only measurable by how well they continue to perform.

Our team is international and diverse, of which we are immensely proud.

Our Work

Our technologies span from development tools to advanced robotics, from digital connected solutions to energy analysis and economics. While our applications are diverse, our technologies are linked by our focus on enhancing the impact on people's lives.

AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

THALES

Building a future we can all trust

Driving the UK's success

The people we all rely on to keep our nation moving – they rely on Thales in the UK. In a world that is increasingly fast paced, unpredictable and full of opportunities, they come to us with big ambitions: to make the UK better and to keep its people safer.

Telephone

+33 (0) 1 57 77 80 00

Email

Via the Website

Website

www.thalesgroup.com

Combining a unique diversity of expertise, talents and cultures, our architects design and deliver extraordinary high technology solutions. Solutions that make tomorrow possible, today. From the bottom of the oceans to the depth of space and cyberspace, we help our customers think smarter and act faster - mastering ever greater complexity and every decisive moment along the way.

Each day brings brand new challenges and bold new opportunities to the UK. We have the resources, knowledge and appetite to take them on. With a heritage dating back to the late 1800s, we know the UK inside out – and we're determined to achieve the very best for it.

About Thales in the UK

We're a 6,500 strong team of experts, located across the UK. We have unrivalled experience across every major industry we serve - working around the clock to make life better and keep us safer.



AUTOMOTIVE CONSULTANCY - TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)

Thattham Research

Telephone	+44 (0) 1635 868 855
Email	enquiries@thattham.org
Website	www.thattham.org

Thattham Research was established by the motor insurance industry in 1969, with the specific aim of containing or reducing the cost of motor insurance claims while maintaining safety standards.

We remain the UK's only 'not for profit' insurer funded research centre, and hold a unique position thanks to our involvement and engagement with vehicle manufacturers,

regulators, law enforcement organisations, automotive bodies and insurers to provide a holistic view of the benefits or shortcomings of vehicle technologies. Our research is at the forefront of vehicle safety, security and repair.

What we do

Most of our work is funded by a levy on our 25 member insurers.

We also generate our own revenue providing a unique range of products and services primarily to the motor repair industry, contributing to an annual turnover of around £15 million.

We are also a founder member of the International Council for Automobile Repairs (RCAR) and have been a member of the European New Car Assessment Programme (Euro NCAP) since 2004.



AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)



The most robust tracking technology on the market

Protect your vehicle with Tracker, the UK leading stolen vehicle recovery specialist. Our vehicle tracking solutions are the most effective way to protect your vehicle in the event of theft.

With 27 years experience of reuniting car lovers with their stolen vehicles and helping Police catch criminals; we have the perfect combination of unique technology and tracking partner, making our products the perfect solution.

Tracker Network (UK) Limited

Tracker has been leading the way in the field of vehicle tracking and telematics since 1993. With over a million market leading security systems fitted to vehicles including passenger cars, motorcycles, HGVs, LCVs and plant and construction equipment, Tracker is still leading the way.

Why Tracker?

Unlike other devices, Tracker's unique technology can locate stolen vehicles anywhere, even when they are hidden in underground, in a garage or shipping container and this is because it is the only tracking solution to combine GSM, VHF and GPS.

Tracker systems work like an electronic homing device, with a covert transmitter hidden in one of several dozen places around the vehicle. There is no visible aerial, so the thief won't even know it's there. As an added benefit, those who fit a Tracker system could also benefit from a possible discount on their insurance premiums.

The Tracker Mesh Network takes advantage of other vehicles on the road that are already fitted with a Tracker to relay information about a stolen vehicle that is equipped with the same technology. This brings drivers together to create a UK wide network of 'listening vehicles' which can help pinpoint the location of a stolen vehicle.



Telephone	0333 207 4121
Email	Via the Website
Website	www.tracker.co.uk

TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS

[RETURN TO THE INDEX](#)



The enabler of intuitive freeform Touch Interfaces that are beautiful, robust and economic.

Through continuous innovation in hardware, software, opto-mechanical design and material engineering, Uniphy delivers solutions and support for intuitive freeform touch Interfaces that are differentiated in terms of beauty, robustness, time to market and affordability.

Uniphy enables beautiful, intuitive and safe designs

A key and emerging trend in the modern and next generation car designs is adoption of larger colour displays and touch screen that bring design aesthetic and functional flexibility to the car dashboard. Compared to the traditional mechanical buttons and knobs, there is however a big problem in the car with such standard display and touch screens in that you cannot operate them without looking at them. Diverting driver attention, even for a fraction of a

second, whilst driving a 2 tonne steel car at 70mph is a major safety concerns which must be avoided. Using Uniphy's "beyond touch" technology, the car designer can deliver design beauty and flexibility as well as ensuring safe operation by combining latest display technologies with Uniphy's curved and contoured touch surfaces, on-display buttons and integrated mechanical control dials.

This allows the driver to benefit from and operate the graphics display without having to look at the screen whilst driving. Instead he or she can use the contoured touch surfaces or integrated dials to guide accurate control without the need for visual interaction. The revolutionary Uniphy technology delivers the benefits of the modern colour displays to the driver without compromising safety and whilst delivering design freedom and beauty.

Telephone	+44 (0) 1793 967315
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TIER 2 - COMPONENT DEVELOPERS & SUPPLIERS

[RETURN TO THE INDEX](#)



Electrical and Electronic Engineering

Power, sustainability and improved communications are at the heart of our Electrical and Electronic stream. Key areas of research include: artificial olfaction (or 'electronic nose'); electrical energy conversion; grid-scale energy storage; nanoscale communications; and quantum devices, design freedom and beauty.

Connected Systems

The Connected Systems Group brings together radio and optical communications and networks, nanoscale communications, embedded computation, and the tight interplay between computation and communication to explore technologies for transforming how we live and interact with modern infrastructure and services, from online processing and autonomous adaptive systems, to secure networks and wireless systems.

Electrical Power

The Electrical Power Research Group at Warwick is set up to conduct internationally leading research and drive for cutting edge technology development in tackling the great challenges in power generation, energy conversion, distribution, transmission and efficient use of energy.

Sensors and Devices

The work in sensors takes place within four main laboratories, and consists of cutting-edge research for use in many application areas, ranging from biomedical imaging and diagnosis through to gas sensing and materials inspection.

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[VISIT THE WEBSITE FOR MORE INFORMATION](#)

[RETURN TO THE INDEX](#)



Setting the pace in the fastest-growing segment

As the only Tier 1 supplier devoted exclusively to cockpit electronics, and with the broadest product portfolio in this segment, Visteon is uniquely positioned to meet automakers' needs

for smart, digital cockpits for electric and automated vehicles. Our technology ensures drivers and passengers can interact easily, efficiently and more safely with features in the cockpit – and with the ecosystem around the vehicle.

Telephone	01245 395000
Email	mail via the website
Website	www.visteon.com

In the autonomous driving era, it will be the apps, the connectivity and ease of interaction with displays that will define the new user experience. We apply our software-driven expertise to excel in these areas – melding new technology with the best of the consumer electronics experience, while capitalizing on the automotive intellect and passion of our people. We also embrace collaboration, making it easy for the brightest app and algorithm developers to create game-changing applications for our platforms, from infotainment to autonomous driving.

Visteon helped the industry move beyond hard buttons and knobs to touch screens and haptic controllers. Today, we're the first in the industry to address the proliferation of electronic control units (ECUs) through our SmartCore™ cockpit domain controller solution. Now, another transformation is underway, driven by requirements for autonomous vehicles. This new phase will be characterized by technology such as artificial intelligence, augmented reality, driver monitoring and interior sensing. We're participating in this new era of technology in the same place we've always been – the fast lane.

Find out more at www.visteon.com

TIER 1 SYSTEMS DEVELOPER & INTEGRATOR

[RETURN TO THE INDEX](#)

WHITE WILLOW

TRANSPORT INTELLIGENCE

White Willow are an SME specialising in connecting the roads and automotive business worlds.

We provide niche specialist advice on connecting vehicles and infrastructure, ranging from the technology selection through to the business case, and the state of the art on in vehicle data and its use by the roads world. Working with both OEMs and retro fit suppliers, UK Central and Local Government and roads/parking operators, and hence a wide range of AESIN members, we are now breaking down siloes and make connectivity between roads and vehicles more than the 4 rubber patches we have up to now.

We work on a variety of projects from maximising use of eCall to in vehicle messaging and have the UK's oldest connected car – a 1914 Model T Ford – demonstrating services and data collection from a vehicle without OBDII.

Our recent work has included the DfT's Connected Vehicle Data Research, reporting for the RAC Foundation on quick wins for in vehicle services, automated valet parking strategies for a major supplier and working with other AESIN members a review of in vehicle parking technology. We are currently working on guidance for UK Local Highway Authorities on connecting up data, on digital traffic signals and 5G bases parking services.

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AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

WILLIAMS | ADVANCED ENGINEERING

Williams Advanced Engineering Limited is a world-leading technology and engineering business, born out of Williams F1 in 2010.

Based on the Williams technical campus in Grove, Oxfordshire, UK we successfully deliver projects for a global customer base. With over 300 employees, we pride ourselves in solving the most difficult applied engineering challenges for clients across a wide range of sectors, combining cutting edge technology and the industry's best engineers with precision and speed to market.

Our unique knowledge of high performance lightweight batteries has been honed in the highly-competitive and demanding motorsport arena and the company now provides battery systems for the majority of the global electric racing series including Extreme E and ETCR.

WAE actively supports sustainability with innovative through transformational technologies and capabilities such as advanced simulation, digital and stress modelling, aerodynamic and thermodynamic optimisation, systems / full vehicle testing, integration, and low volume production.

EMK Capital acquired a majority equity stake in WAE in December 2019, unlocking the potential for further growth.

A multi-award-winning business, the company was accorded the RAC Simms Medal in 2015 and Queens Award for Enterprise, in 2018.

Telephone	Via the Website
Email	Via the Website
Website	www.wae.com



AUTOMOTIVE CONSULTANCY - POWERTRAIN CONSULTANCIES - TIER 1 - SYSTEM DEVELOPERS & INTEGRATORS



We're an international leader in successful collaboration between academia and the private and public sectors, driving innovation in applied science, technology and engineering.

Creating a better tomorrow through innovation and learning today, we develop the brightest ideas and talent that will shape our future, and improve the competitiveness of organisations through the application of value adding innovation and new technologies.

Leading research, education and business

Our research has helped redefine how societies respond to real world problems. Our education seeks to give everybody a fair chance of succeeding, encouraging excellence and resourcefulness in our students wherever they are on the career ladder. And our collaborations have seen us build relationships of consequence with the smallest of local businesses, through to the most powerful global multinational corporations.

Public engagement and Outreach

We're passionate about engineering, science, and technology, and actively seek to encourage that interest in others, and to build links with the local community. Through workshops, demonstrations, talks, and competitions, we show these subjects and their impact in an engaging and accessible way to audiences of all ages and walks of life.

Intelligent Vehicles

Intelligent vehicles are set to transform the UK economy and we are considered the centre of excellence for connected and autonomous vehicle research. Our multidisciplinary approach to collaborative research, including cooperative driving systems, connectivity, human factors, cyber security and verification and validation, enables a full understanding of the practical applications that will help shape the future of transport mobility.

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[VISIT THE WEBSITE FOR MORE INFORMATION](#)

[RETURN TO THE INDEX](#)

Y mobility

We are a Strategic consultancy of mobility innovation and technology

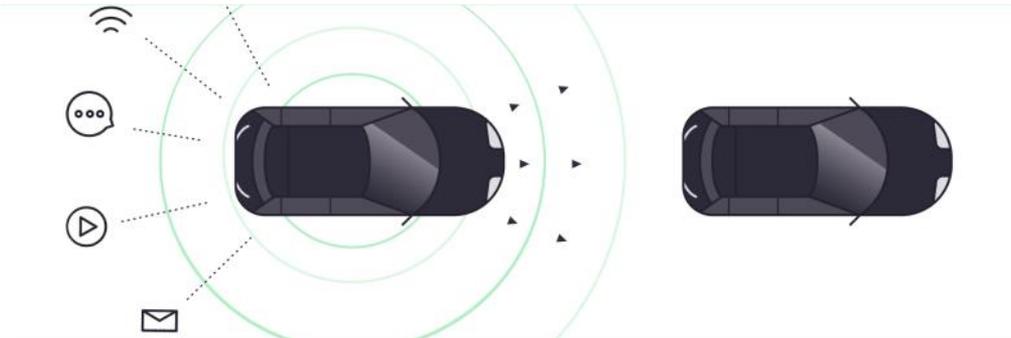
We undertake a variety of technical and consultancy projects for a range of clients in the mobility and tech industry worldwide. Our work is focused on the opportunities offered by CAV, Mobility and other latest technologies in our operating industries of:

Telephone	+44 (0) 1926698699
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Website	www.y-mobility.co.uk

Connected vehicles: which enable vehicles and infrastructure to communicate with each other and the cloud.

Automated vehicles: including technologies that enable the simplest of driver assistance features all the way to fully-automated “Level 5” – driverless vehicles.

Our work has helped to deliver complex transformation programmes of great significance globally in the mobility and tech industry.



AUTOMOTIVE CONSULTANCY

[RETURN TO THE INDEX](#)

ZUKEN®

When your engineering teams need design solutions from a company that speaks the language of IT, talk to Zuken.

Telephone

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Email

sales-uk@gb.zuken.com

Website

zuken.com/automotive

Zuken's *Automotive Engineering Solutions* seamlessly integrate into the engineering lifecycle and link to the business IT datastores.

Unravelling the digital thread

The complexity of electronic systems designed for automotive and special vehicles is increasingly benefiting from the digital twin methodology. Today the approach also demands digital threads woven between engineering and IT infrastructure to guarantee successful product delivery.



Solving digital twin complexity



With its acquisition of Vitech Corporation, Zuken is at the forefront of Model Based System Engineering (MBSE). And this technology uniquely complements our long-established implementation solutions for PCB, cabling and wire harness design.

Enabling the creation of sophisticated conceptual models with an MBSE approach all but eliminates the traditional downstream errors incurred in a non-MBSE methodology. At the same time Zuken enables an "engineering" digital thread which weaves connections between the design infrastructure and business IT datastores to eliminate discontinuities in the journey to product delivery.



THE PARTNER FOR SUCCESS

[RETURN TO THE INDEX](#)

Should Automotive OEMs outsource their box build?



COMPANY SPOTLIGHT

From BoM management to continuous investment in people, equipment and systems, CEMs offer a compelling box build solution.

Box build ranges from a single PCB in an enclosure to complex integrated systems. If OEMs require the manufacture and assembly of a complete unit, there are things to consider when approaching a CEM. Firstly how much of the build is to be outsourced?

Some CEMs, like Jaltek, provide an integrated solution including conceptual design, NPI, volume production, test, order fulfilment and aftercare. Essentially, they provide complete product lifecycle support. The more complete an offering the more value the CEM can add.

It is beneficial to select a CEM with experience in your industry. Jaltek has over 17 years' experience designing and manufacturing for the automotive industry, including for electric and autonomous vehicles, and the related charging infrastructure, ranging from prototyping and NPI through to production and box build.

Some products may require the CEM to have certain accreditations such as Cyber Essentials, ATEX or AS9100 and ISO13485 for the defence



and medical industries. Even if your product does not require these accreditations and related controls it can be good to have them in place as it reinforces the high standard and importance of quality to the CEM.

Design is just as important as manufacturing. Engaging a CEM early ensures the design is optimised for manufacture. Linking this part of the process to the supply chain also ensures selected components can be sourced, preventing significant problems later.

An integrated box build service simplifies supply chains. The subcontractor can add value through synergies and economies of scale. Purchasing through approved and preferred vendors gives flexibility and value to customers by reducing costs using local and offshore supply chains.

For example, Jaltek uses management software to identify potential component supply issues related to a customer's BoM. The software helps manage BoM health, lifecycle, alternative components, counterfeit components, ITAR controlled parts and conflict minerals. Products have a faster time to market, lower costs, higher reliability and longevity.

A CEM will have an investment plan to maintain and upgrade skills, equipment, software, systems and capabilities, providing up-to-date, efficient and cost-effective solutions. Equally if an OEM is short of space the CEM may be able to offer storage facilities, ship to site options and packaging and shipping product directly to a location, client or distributor.

Most CEMs offering a box build service will also have a level of aftercare which can include, service, warranty, repairs, upgrades and re- shipping all within agreed commercial terms.

If you are looking to engage a CEM for your box build that fulfils all of the above criteria and has experience in the electric vehicle industry, please contact us for more information by email at info@jaltek.com or telephone on 01582 578170.

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The Automotive industry and component shortage, Jaltek could have the answer



COMPANY SPOTLIGHT

We are witnessing critical electronic component shortages at a Global scale with the potential to significantly threaten production of electronic equipment.

The global electronic component shortage is the result of several factors. Problems at production facilities, increased demand from emerging market sectors such as the automotive industry, the effects of COVID, and increased customs and transportation costs as well as long delays due to clearance checks .

The effects of the shortages are wide ranging. As the automotive industry shifts toward electric and autonomous vehicles, and the related charging infrastructure, the reliance on electronic components increases which in turn can cause significant supply and availability issues.

Jaltek has over 17 years' experience designing and manufacturing for electric Vehicle charging, grid to vehicle, vehicle to grid, power electronics, and sensors, from prototyping and NPi through to Production and Box Build. As a result we have built strong links with key suppliers in the industry.



Component shortage is not a new phenomenon. If you're struggling to find solutions to a long lead time part or an obsolete item Jaltek's dedicated procurement team will use their established relationships with industry contacts to track down any hard to find components. Don't panic buy from unapproved



sources, instead let us work with key distributors on your behalf.

As well as our people Jaltek have also invested in material management and traceability software tools. We subscribe to a Bill of Materials (BOM) Management software programme which provides electronic component data & parts management software to the electronics industry. The software allows us to manage our customer's BOM in one centralised location and has the most precise data on the market. Digital manufacturing tools also allow material management and traceability to the highest levels. These are integrated with enterprise supply-chain tools to help to safeguard against material shortages.

If it has still not been possible to source a component, Jaltek will help you find an alternative solution. Our experienced team of engineers have a breadth of skill and knowledge when it comes to procurement and adapting designs to suit market conditions. The solution could be anywhere from a direct 'form, fit & functional equivalent' to re-engineering a section of circuitry. Whatever the issue, if an answer exists, Jaltek will be able to find it for you.

Whatever the circumstances we work together with our customers to streamline your design and build so that it is as seamless as possible. If you would like us to help you with your product please contact us by email at info@jaltek.com or telephone on 01582 578170, for more information.

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AESIN CONFERENCE

NATIONAL MOTORCYCLE MUSEUM, SOLIHULL

16th SEPTEMBER 2021

Join the leading minds driving Innovation in Vehicle Electronics at AESIN 2021 – The UK's Premier Automotive Electronics Conference

The Government has committed to achieving net-zero emissions by 2050 and banned vehicles wholly powered by petrol and diesel by 2030. AESIN is working with Industry and Government partners to support organisations developing the enabling technologies that will help us to achieve these goals.

In addition to new electrification technologies we will also focus on the ways in which ADAS & Highly Automated Vehicles, More Electric Powertrain, Clean & Connected Mobility, Software, Skills and Security all play a key role in achieving the overall net zero goals.

Once again, we are pleased to be hosting the conference from the National Motorcycle Museum in Solihull.

WWW.AESINCONFERENCE.COM



AESIN is a collaborative, non-profit, response to the Automotive Sector Revolution in complex Electronic Systems enabling technology for the more Electric Connected and Automated vehicles of tomorrow.

With roots in the Electronics Deep Tech sector AESIN aims to be the home for OEMs, Tier 1 Systems integrators, Component and Software companies, infrastructure providers, insurers, local authorities, government agencies and anyone seeking to embrace next generation Automotive Electronics innovation.

Our aim is to help create an environment where the best innovators in the world can meet to develop and deliver world class Automotive Electronic enabling technologies of the vehicles of the future.

AESIN facilitates collaborative innovation, expert knowledge and best practice sharing with endorsement of the Automotive Council UK and Government. In addition to supporting the Automotive Council UK consensus roadmapping we drive collaborative activity through our core Workstreams...

www.aesin.org.uk



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