

Advancing Digitalisation

Expression of Interest

Guidance Notes

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Overview

The Institute of Digital Engineering

The Institute of Digital Engineering UK (IDE) is the Digital spoke of the Advanced Propulsion Centre (APC) and funded by the UK Government Department for Business, Energy and Industrial Strategy (BEIS). We have a clear mandate from the Automotive Council to lead the delivery of the Advancing Digitalisation Mission and supporting structures.

Acting as a bridge between leading digital technology innovators, UK industry and academia we establish and nurture partnerships to maximise delivery effectiveness

We leverage the existing UK lead in Fintech, Pharma & Gaming sectors to unlock a unique UK opportunity in Product Engineering

Our goal is to transform the discipline of engineering to improve agility, fidelity and efficiency, and result in improvements in productivity and global competitiveness for the UK

For further information go to www.ideuk.org

Expression of Interest - Objective

The Expression of Interest (EOI) is an open invitation for ideas and proposals for potential grant funded fast start projects to support the UK Automotive Council Automotive Digitalisation Mission. The EOI is being co-ordinated and managed by the Institute of Digital Engineering (IDE)

The exponential rise of product complexity and increasing customer, environmental and legislative demands requires the adoption of new, advanced digital technologies and best-in class engineering capabilities to deliver automotive products to market better, faster and cheaper.

We are seeking ideas and proposals for innovative and collaborative Proof of Concept projects that help to demonstrate the clear value and benefit of digitalisation to the automotive industry and provide a legacy for future exploitation

Scope

Digital Themes

Project proposals should address key challenges in the following areas:

- **New Digital Engineering capabilities.** Drive the development, integration and use of models and simulation to inform product, program and enterprise decision making
- **Revolutionised Product & Service Creation Processes** Drive the fundamental process re-design to unlock creativity and deliver better products, faster and cheaper
- **Progressive Assurance, Regulation & Standards.** Holistic methods of product certification and regulation. The generation and leadership of new global-leading standards
- **Co-creative Infrastructure and Environments.** Enable infrastructure and environments that unlock co-creation activities and synchronous communication across stakeholders
- **Transformed Enterprise Cultures and Workforces** that support and adopt Digital Engineering across the lifecycle. Ensure the availability of future skills

Core Technologies

Proposals should involve at least one of the following core technologies:

- **Insight and Intelligence** - Artificial Intelligence, Robotic Process Automation/AutoML, Advanced Data Analytics
- **Modelling and Simulation** - Digital Modelling, Behaviour and Performance
- **Communication** - Internet of Things, Interconnectivity, 5G, Field Communication
- **Immersion** - Virtual Reality, Augmented Reality, Mixed Reality, Visualisation

Strategic Capabilities

Project proposals will be assessed on how well they align with strategic capabilities which will be the foundation of the forthcoming Digitalisation roadmap. These include:

- **Enterprise Architecture** – Agile, smart approaches to programme delivery; intelligent architecture and product definition optimisation; integrated and interfaced design and manufacturing processes; the use of modelling and simulation to drive smarter, real-time decision making
- **Secure Collaborative Co-Design** – Enhanced and more resilient supply chain through enhanced co-creative product design; fully connected and co-creative ecosystems across the value chain; secure environments for the sharing of data and value; standardised frameworks to connect and integrate digital models
- **Closed Loop Design** – Future proofing the design process; high fidelity evolutionary models; accelerating the product creation process through aligned through-life testing; product design for zero maintenance
- **Simulation Environments** – Digital design for manufacturing quality or quality by design; simulation of real product performance; Artificial or Augmented Intelligence to resolve complex problems
- **Risk Management** – Anti-fragile design through epistemic uncertainty reduction; digital failure mode avoidance and risk management using Artificial and Augmented Intelligence tools; cyber secure anti-hack systems
- **Assurance and Certification** – High-fidelity super system test beds; intelligent requirements management; product assurance and certification through virtual modelling and simulation
- **Life Cycle Management** – High fidelity simulation of environmental impact during the product creation process; design for net-zero; experimentation in the virtual world and adaption of the design process to societal requirements and legislation

Participation

Project Size

Appropriate methods of funding attractive proposals will be reviewed by IDE, APC and BEIS after the closing date.

As a guide proposal should be aimed at projects that will be 50% match funded and up to £10 million eligible cost

Projected project duration should be 12-18 months

Consortiums

Proposals may be submitted by any UK organisation, academic institution or RTO.

Any projects that subsequently receive funding should meet the following requirements:

- Involve at least 2 partners seeking grant funding
- Involve at least one micro, small or medium-sized enterprise (SME)
- Involve a vehicle manufacturer or tier 1 supplier who supplies parts or digital services directly to an original equipment manufacturer

Participants are strongly recommended to include academic institutions with specific digital capabilities in the project consortium. Consideration should also be given to organisations from other industry sectors such as Fin Tech, Pharmaceutical, Aeronautical or Energy to leverage additional digital skills and capabilities.

Any UK registered business registering an Expression of Interest must be eligible to receive state aid at the time grant funding is awarded, should this be the case.

Support

During the submission phase IDE will be offering an interactive consultancy service on a 1:1 basis to assist participants develop their proposal. We will also help to identify potential project partners through our extensive existing network, which expands well beyond the automotive sector.

If you would like to engage with us and take advantage of this support please do so by contacting: peter.scanes@ideuk.org or via the dedicated Slack channel: [Advancing Digitalisation EOI](#)

Further information including a narrated video can be found on the [Advancing Digitalisation page](#) on the IDE website.

Technology Maturity Level

Any digital tools or platforms either developed or applied within a project should be within the Technology Readiness Level range of 4-7

Submissions

Project proposals should be submitted using the Submission Form which can be downloaded from the [Advancing Digitalisation page](#) on the IDE website.

The form is split into the following categories:

1. Organisation background, size and type of current activity, level of current digital capability and aspirations for development

Please provide information about your organisation; number of employees, type of activity engaged in and market sector, your current level of digital capability and any aspirations you may have to develop your organisation through digital technology, and in which areas.

2. Outline scope of project

Background to your project idea or proposal, the specific challenges or issues addressed, the type of activity that will be conducted and the desired outcomes. This is also an opportunity to describe the type of partners that might be required to deliver the project and new skills needed.

3. Outline description of digital technologies or methodologies utilised or developed and level of innovation within the project

Description of the digital technologies or tools, their main area of focus, level of commercialisation and technology maturity. Where the project could involve the development of any pre-commercialised digital tools provide potential maturity level that could be achieved and why the technology is innovative.

4. Relevant digital themes targeted and the impact the project could have on addressing existing challenges and meet the desired outcomes

Explain specific challenges which are addressed in your proposal and which of the Digital Themes they are relevant to. Please also provide details of Strategic Capabilities that will be developed and how they might help to achieve the project outcomes.

All completed forms should be returned to peter.scanes@ideuk.org together with any supporting information such as presentation or video material.

Frequently Asked Questions

How are projects being funded?

Appropriate methods of funding attractive proposals will be reviewed by IDE, APC and BEIS after the closing date.

When might subsequent funding start?

This will be dependent on the potential funding mechanism however the intention would be to scale up fast start project proposals in an accelerated timescale.

How will I be notified if and when funding is available?

IDE will continue to engage with all parties, who have submitted an EOI proposal, after the submission phase. It is possible that some proposals might be better suited to an existing grant funding mechanism. If such proposals are identified during the review phase IDE will also support the development of subsequent grant funded applications.

What is the likely project funding structure of successful proposals?

This will be dependent on the potential funding mechanism.

Do EOI submissions have to come from within the automotive sector?

IDE will accept proposals from organisations outside of the automotive sector however the overall scope, objectives and activity carried out within a project should be to the benefit of the UK automotive sector.

If I submit an EOI submission do I have to be the project lead partner?

EOI proposals can be submitted by organisations who do not have a desire to lead the resulting project.

Do I need to specify who the other partners are at the EOI stage?

No, the purpose of the EOI stage is to development attractive proposals that might have the potential to be developed into funded consortium projects. The EOI phase should be used as an opportunity to start assembling the consortium and IDE will provide support in partner engagement.

Can non-UK companies submit an EOI proposal?

No, IDE will only accept submissions from UK based organisations. Overseas companies can only submit an EOI proposal if they have UK registered subsidiary and can guarantee that the R&D in a resulting funded project will be carried out in the UK.

What is the likely maximum size of project?

It is not intended that the maximum size of project be restricted however it is anticipated that the maximum grant funding will be £5m per project.

What is the likely minimum size of project?

There is no minimum project size.

How will EOI submissions be assessed?

IDE will apply a simple grading structure to assess proposals and provide feedback on how the proposal can be developed and improved. It is important to note that the level of future funding available could be dependent on the quality and number of Expression of Interest proposals received.