Smart Infrastructure and Systems Programme

Our Smart Infrastructure and Systems Programme is the champion for smart infrastructure deployment and governance in the UK, and the economic and societal benefits that smart technologies can deliver. We focus on the innovative application of emerging technologies to traditional forms of infrastructure (such as mobility, energy, water, and the connected home), bringing expert communities together to consider how to reduce costs, increase efficiency and resilience, and deliver better performance.

Visit the Smart Infrastructure and Systems hub on our website.

2021 Achievements

Smart Energy and Utilities

Championed digital technology adoption and innovation in utilities

techUK represented members at the advisory board for the Energy Digitalisation Taskforce, publishing recommendations for a digitalised net zero energy system.

We also published white papers on AI For Energy and Digital Twins for Energy and hosted member insights on the application of emerging tech in the energy and water sectors.

Supported market development in utilities

We continued our work with the Government's Smart Systems Forum to unlock the value of energy flexibility through reform of energy wholesale market regulations.

We also held a collaborative event with Arup - *Getting ready for mass EV roll out: how to build the data and physical infrastructure in time?*

Provided strategic leadership for data strategies

We delivered a conference on data for intelligent infrastructure (energy, water and transport) to support sharing of best practice and interoperability. We also chaired the Electric Vehicle Energy Taskforce working group on Data Accessibility and Privacy.

2021 Achievements

Smart Cities

Championed the adoption of smart city technologies

We convened roundtables with stakeholders on AI-based services to ensure all new innovative services for citizens are fair and unbiased.

We delivered a techUK webinar on emerging urban applications of artificial intelligence, focused on providing decision-makers with user cases and examples that can be leveraged in the real-world. Supported the secure adoption of smart city technologies

We worked with DCMS, its Smart Cities External Advisory Board, and the National Cyber Security Centre to feed in member views on issues of security standardisation, regulation, and policy.

Supported the implementation of the UK's National Infrastructure Strategy (NIS)

We worked with our members to further define the potential for smart technologies within the Government's National Infrastructure Strategy, which puts innovation and technology at the heart of infrastructure transformation.

2021 Achievements

Digital Twins

Championing the role of digital twins

We published our landmark report on the future of the UK's digital twin ecosystem - Unlocking the value of digital twins in the UK.

We worked extensively with the CDBB to develop the case for digital twins of the UK's social housing assets.

Drive public investment in digital twins

We delivered a pre-consultation briefing with BEIS on cyber-physical infrastructure for digital twins.

Champion the role of digital twins at the heart of the net zero transition

We collaborated with partners to bring a digital twin to COP26, and we collaborated with the European Commission as it develops a digital twin of the earth: Destination Earth.

We engaged with government and innovation bodies to highlight the role that digital twins could play in accelerating R&D commercialisation in green technologies and support 'systems thinking'.

2021 Achievements

Intelligent Mobility and Transport

Championed the role of technology and the digital transformation of the mobility and transport sector

We worked closely with the government in 2021 to shape the technology elements of the Future of Transport Regulatory Review, a landmark piece of policy which set out how transport will be governed and regulated until 2050.

We also strengthened our relationship with the Office of Zero Emission Vehicles (OZEV), providing input into high profile consultations concerning electric vehicle (EV) roll-out.

Helped the transport market grow

We held events throughout 2021 to support the sharing of best practice across the intelligent infrastructure landscape, including how to achieve greater interoperability between transport, energy and water.

In addition, we held a successful event with Arup, the global built environment consultancy, examining what we need to prepare for mass EV roll out and how different sector players can coalesce to deliver the infrastructure needed.

Emphasised transport's contribution to net zero

At COP26, in partnership with our member Hitachi and BEIS, we held an event which unpacked how we can deliver greener cities using low carbon and connected transport solutions.

2022 Objectives

Smart Energy and Utilities

Champion digital technology adoption and innovation in utilities

The group will hold a series of roundtables throughout the year to provide an opportunity for members to participate in the execution of the [Energy Digitalisation Taskforce](#), which published recommendations for a digitalised net zero energy system.

We have identified this year as a crucial time to strengthen the digital technology application evidence base on our sector. We are working with members to provide government departments with knowledge on the opportunities and barriers to adoption for digital technologies through position papers, lobbying activities, and market access opportunities.

Support market development in utilities

We will publish a whitepaper on commercialisation and scaling challenges in utilities.

We will support members in advance of the shut-off of BT's ISDB and PSTN services through intelligence, events, and research.

We will work closely with UKRI and InnovateUK to provide guidance to the Strategic Innovation Fund and Prospering to the Energy Revolution for members.

We will be working closely with Ofwat to help structure the next round of innovation funding.

Drive the market towards net-zero energy and water systems

techUK will work with members and stakeholder to address digitalisation for net-zero energy and water networks, including hosting roundtables on the digitalisation for net-zero electricity, and digitalisation for net-zero for water.

2022 Objectives

Smart Cities

Building trust and shifting perceptions

The smart cities working group (SCWG) will identify key use cases which show how smart cities solutions are citizen-centric by design, collaborative, and secure. Planned activities include a white paper and webinar to discuss findings

Generating social value for local areas

The SCWG will examine the role of smart cities in fostering social value for local communities. Planned activities include a report outlining the case for updated guidance for social value reporting for smart cities, and a webinar in conjunction with techUK's Local Public Services Programme, convening providers and local authorities.

Building local digital capital

Through integrating with techUK's Local Digital Capital Index 2022, members will have an opportunity to express the importance of being able to clearly understand the digital capabilities, skills base and adoption rates of an area when embarking on projects to design the right solutions to local challenges.

2022 Objectives

Digital Twins

Elevating the adoption of digital twins

We will continue to promote the opportunities for digital twin technology. We will work with members to address the challenges of implementation, address technology trust issues in the deployment of digital twins, and publish a white paper on best practice applications for digital twins.

Support the conditions that help digital twins to thrive

techUK will hold a series of roundtables with BEIS on the Cyber-Physical Infrastructure for digital twins in response to their call for evidence.

We will also continue to provide guidance to techUK's work on the National Data Strategy and National Innovation Strategy, and we'll publish the Apollo Protocol Report – addressing the language barriers of digital twins between manufacturing and built environment. In collaboration with AMRC, IET, CDBB, CLC, and the Alan Turing Institute.

2022 Objectives

Intelligent Mobility and Transport

Our focus in 2022 will be to emphasise the importance of a systematic view of the transport network that considers every mode, from road and rail to air and sea. Using this cross-cutting view, we will be able to clearly demonstrate the power of technology in helping achieve key outcomes for all transport modes simultaneously with a specific focus on:

The drive to net zero

From digital technologies including AI and IoT to physical technologies including hydrogen and electrification, we will show how innovation is helping transport reduce its impact on the planet. Critically, we will take a holistic view, with an understanding that we must consider every mode of transport in tandem if we are to achieve net zero.

Delivering better customer experiences

Technology is playing a vital role in delivering enhanced customer experiences, which includes those who use transport for personal mobility, and for freight and logistics.

From improved mobile connectivity, to delivering more reliable and integrated services, we will explore the opportunities and challenges of integrating new technologies to improve the experience at every stage of the customer value chain.

Generating greater efficiency

With operational costs rising, increases to the cost of living and the lasting impact of the pandemic on mobility patterns, we will explore how technology can be used to drive greater efficiencies for transport businesses and their customers.

Shaping the Government agenda

The transition to Great British Rail (GBR), the nationalisation of the Energy Future System Operator and legislation for automated vehicles are generationally important moments for transport in 2022. techUK will be central to these conversations to achieve the best possible results for the industry.