

**Digital Twin: a model of an infrastructure asset or system of infrastructure - such as energy, water, transport, digital, waste and flood defence - which can be used to simulate likely use and maintenance, and predict future demand**



## **THE DIGITAL TWIN DATA CHALLENGE**

*How do we address congestion, drought and the need for resilience? What will be the impact of electric vehicles on pollution by 2050? Are Digital Twins the future of infrastructure planning, maintenance and operation? Could a Digital Twin reduce leakage in the water network or increase efficiency of energy supply? Could we use a Digital Twin to manage the impact of a flood? Should a Digital Twin operate across a city, a region, or the whole country?*

These are just some of the questions we at the National Infrastructure Commission are asking, as we look at how digital technology can improve our infrastructure – and we want **YOUR** help.

We've teamed up with the UK Collaboratorium for Research in Infrastructure and Cities (UKCRIC), Venture Fest and the Bristol Festival of the Future City to create the **Digital Twin Data Challenge**. It offers the opportunity for you to use your knowledge and expertise to see how this new technology can be used to maximum effect.

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We're inviting multi-disciplinary teams to form and take part, with the chance to present their findings to a panel of experts drawn from Innovate UK, the Alan Turing Institute, Ordnance Survey, the UKCRIC network and the National Infrastructure Commission at Europe's only Data Dome in Bristol, and to share their innovative ideas as part of the Bristol Festival of the Future City. Could YOU build a Digital Twin? And what could it do?

**The Challenge:** To create a Digital Twin of Bristol, to help plan for the city's future infrastructure needs. The twin can be based on any data from the city – for example local bus routes, lamppost locations or energy use.

Judges will be looking for:

- Teams that show the value of their Digital Twin and how it could be expanded with more time, resource and data
- Evidence of potential if your Digital Twin could be coordinated in a network of other Digital Twins
- Digital Twins that demonstrate interdependencies between systems and infrastructure sectors, eg the effect of a flood on the operation of transport and communications systems

**Chairman of the National Infrastructure Commission, Lord Adonis, will announce the winner as part of the Bristol Festival of the Future City on 19 October.**

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## To Enter:

1. Submit details of your team, and the data you plan to use, by **22 September** to [digitaltwinchallenge@nic.gsi.gov.uk](mailto:digitaltwinchallenge@nic.gsi.gov.uk) – an application form can be found [here](#)
2. Submit your final entry by **6 October** to [digitaltwinchallenge@nic.gsi.gov.uk](mailto:digitaltwinchallenge@nic.gsi.gov.uk) – it needs to include:
  - A Digital Twin model (including reference to data sets)
  - A one page summary setting out the Digital Twin's benefits – what can it do? How would you like to develop it further?
  - A 3D presentation of the Digital Twin in YouTube 360 format to be projected at the Data Dome in Bristol
  - A three-minute video of your Digital Twin to go with the 3D presentation and to be shared via YouTube
3. Teams must be available to present their findings in the Bristol Data Dome on 11 October for the preliminary round of judging. Finalists will then be invited to present their findings to a panel of experts on 17 October in the Bristol Data Dome, and participate in a 'policy thinkathon' to discuss the wider implications of their Digital Twins. Remote link-ups to universities will also be arranged to enable participation across the UK.

### **Further Information:**

1. The panel of judges are drawn from the Alan Turing Institute, Innovate UK, Future Cities Catapult, Ordnance Survey, UKCRIC and the National Infrastructure Commission.
2. Data sources available include those related to transport, water, energy use, digital technology, waste and flood defence sectors in the Bristol area – however, we are encouraging teams to submit ideas for approval of other data sources related to these sectors they would like to use. A full list of the available data sources can be found [here](#).
3. Although the event will be focused on Bristol and using data from that city, we will be welcoming teams from across the country – as well as inviting teams to attend at the Bristol Data Dome on 11 and 17 October, we will also set up video links so teams can participate remotely.
4. While we are not offering prize money, we can offer a platform to show your ideas, ingenuity and insight. A panel of experienced, successful and influential judges will see your work first-hand and we will put winning teams in contact with Innovate UK and the network of Catapults. In short, impress us and we'll connect you to those who can make your ideas happen.

For further information please contact Sean Shiels at UKCRIC on 07748 180664.