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DAFNI NEWSLETTER, OCTOBER 2026



Dear {{ contact.FIRSTNAME }}

Welcome to the DAFNI October 2026 newsletter!

Thank you again to all of you who were able to attend the DAFNI conference last month. If you were unable to join us, you can catch-up by reading our post-conference blog. Talks, interviews and photos will be shared on our new website and on LinkedIn over the coming weeks, so keep an eye out!
We are already working on our next conference, and to make it even better we'd love to hear about your experience this year.

If you joined us in Oxford, please take a moment to complete our feedback form.

Please save the date for our 2027 conference, which will be held on 9th September at the Science and Industry Museum, Manchester. We would be delighted to welcome you again next year.

Read on for news about our work in the pan-European UrbanAIR project, STORMS-DINI progressing data sharing for buried infrastructure, the latest DAFNI platform updates and news from our researchers.

Dr Brian Matthews, DAFNI Programme Lead

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News from our central team



Reflecting on the 2026 DAFNI Conference

Read our blog for highlights of the conference, our speakers and key themes: ‘Climate and Security Resilience’ and in the afternoon, ‘Government Industrial Strategy, with a focus on Clean Energy.’

Read the blog at:
https://www.dafni.ac.uk/resources/highlights/reflecting-on-the-2026-dafni-conference/

STORMS DINI: Data sharing to enhance buried infrastructure with DAFNI-DINI

The STORMS project (Strategies and Tools for Resilience of Buried Infrastructure to Meteorological Shocks), funded through the DAFNI Centre of Excellence for Resilient Infrastructure Analysis, set out to develop the first comprehensive weather-related risk assessment framework for buried infrastructure.

Buried infrastructure, particularly pipelines, plays a critical role in national energy and utility systems. Understanding climate-related risks to these assets is essential for maintaining resilience.

Through the DAFNI-DINI initiative, an extended project addressed key data-sharing hurdles by bringing together diverse environmental, weather, geological, and physical asset information scattered across a range of partner institutions. It focused on identifying practical strategies to overcome data sharing barriers in the buried infrastructure sector, drawing on insights gained from the pilot project.

STORMS-DINI used DAFNI to create visualisations that clearly demonstrate how shared datasets can generate actionable insights, such as identifying climate adaptation strategies. Stakeholders can trial the model using their own datasets within a secure environment. Open datasets, including those from National Gas, were used as a starting point to showcase the platform’s capabilities and establish early engagement.

A key outcome of the project was demonstrating the value of an end-to-end workflow for engaging stakeholders and building trust. The STORMS demonstrator allows users to run the model using open, proxy, or proprietary data, offering flexibility while showcasing the benefits of collaboration.

DAFNI provided the technical infrastructure and institutional credibility needed to progress the project.

“*The DAFNI platform has been essential for us to implement the end-to-end demonstrator which presents the entire process — from data input to insights. It enhances transparency and helps to build confidence among stakeholders*,” explains Dr Xilin Xia.

Click to read the full case study



CASE STUDY

STORMS: data sharing to enhance buried infrastructure with DAFNI-DINI

Dr Xilin Xia, Associate Professor in Resilience Engineering, University of Birmingham

Introduction

The STORMS project (Strategies and Tools for Resilience of Buried Infrastructure to Meteorological Shocks), funded through the DAFNI Centre of Excellence for Resilient Infrastructure Analysis, set out to develop the first comprehensive weather-related risk assessment framework for buried infrastructure. The project sought to quantify the impacts of climate scenarios under current and future conditions.

Through DAFNI funding, the multi-disciplinary project combined experts from the University of Birmingham, the UK Centre for Ecology & Hydrology (UKCEH), and the British Geological Survey (BGS). The project combined environmental modelling with infrastructure risk analysis to better understand how climate-driven hazards affect buried assets such as pipelines.

A project extension through DAFNI-DINI (Data Infrastructure for National Infrastructure) focused on the critical challenge of integrating climate, hydrological, geological and infrastructure asset datasets that are held across multiple organisations.

To explore this, the STORMS team organised online workshops. In the first, a prototype climate risk assessment model was demonstrated to Line Search Before You Dig (LSBUD) and Cadent Gas. The second presented model outputs to LSBUD, Cadent Gas and National Grid. These sessions enabled stakeholders to identify practical routes for sharing private datasets and helped the team understand key barriers to data sharing and collaboration.

The STORMS-DINI team:
University of Birmingham
Dr Xilin Xia, Associate Professor in Resilience Engineering.
Nikolaos Reppas, Research Fellow (now Assistant Professor at the University of Warwick); **Ali Mashhadi**, PhD researcher; **Phatharaphong Yensri**, Researcher; **Dr Qian Li**, Research Fellow (Civil Engineering).
Soroosh Sharifi, Associate Professor in Water Engineering; **Professor Asaad Faramarzi**, Professor of Civil and Geotechnical Engineering; **Nicole Metje**, Professor of Infrastructure Monitoring; **David Hannah**, Professor of Hydrology.

UK Centre for Ecology & Hydrology
Steven Cole, Head of Hydrological Forecasting & Digital Systems; **Robert Moore**, Principal Hydrologist; **Adam Rich-Griffin**, Flood Estimation Team Leader; **Alison Kay**; **Steven Wells**, Hydrological Modeller.

British Geological Survey
Dr Andrew Hughes, Principal Groundwater Modeller; **Javid Yousaf**, Spatial Application Developer

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User liaison news



This October DAFNI attended Highways 2026 at the NEC in Birmingham

The event is one of the foremost road infrastructure events in the UK, with over 10,000 attendees and over 300 exhibitors in the main hall.

Keynote speakers at Highways 2026 included the Minister for Roads - Justin Madders - the CEOs of National Highways and the Office of Road of Rail and Road, as well as the CEO of Transport Scotland and the Deputy Roads Secretary for Northern Ireland. In addition there were a wide variety of speakers covering infrastructure projects, detailing both technical aspects and policy. The breadth of speakers present gave useful insights into developments in road transportation and the general direction and status of transport policy and strategy.

DAFNI has a longstanding interest in transportation infrastructure research and hopes to continue and build on our previous work in this sector. For example, the recent **IMPACT project** led by Qiuchen Li from UCL (now a DAFNI Fellow) investigated the dynamic risks to road networks in the event of severe flooding in busy urban areas. DAFNI is also currently working with the **TransiT Project** (Digital Twins for Transport Decarbonation) to explore how our computing infrastructure can provide a secure area for storing project data and to provide resources for data processing.

Partnership news



UrbanAIR - DAFNI and VITO develop a digital twin for Antwerp

UrbanAIR (Urban simulation for air quality and heat resilience strategies) is a flagship project of the EU. This pan-European project is funded by Horizon Europe, developing a decision support tool that will allow urban planners to model, pre-empt and respond to the effects of air pollution and heat stress in cities.

The project combines data from the European Space Agency (ESA) and European Centre for Medium Range Weather Forecasting (ECMWF) through Destination Earth (DestinE), an initiative aimed at creating a digital twin of our planet.

The DAFNI team has developed a digital twin for the city of Antwerp with European research centre VITO. At the recent UrbanAir Consortium meeting in Antwerp, they demonstrated greening potential, wind and heat stress.

Representatives from Antwerp's municipality were present and offered feedback. The next stage is to integrate the digital twin on the Destination Earth platform. Progress was also made towards developing a digital twin for the city of Barcelona, concentrating on heat stress and air quality.

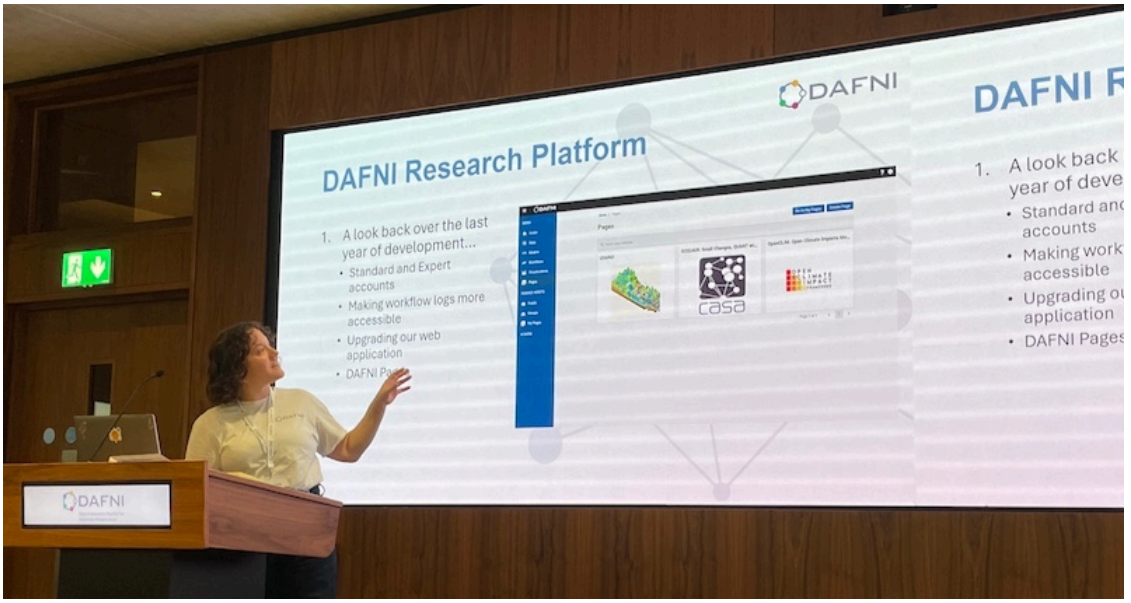
DAFNI and VITO have supported the creation of an interactive dashboard providing initial demonstrators showing wind flow around Antwerp with colour-coded visualisations in a dashboard, based on DAFNI's models, workflow and data management. They are working on an urban air quality demonstrator, and a green potential demonstrator for blue green infrastructure initiatives.

By bringing together climate, environmental and urban data, UrbanAIR empowers policymakers and planners to make informed decisions that enhance resilience, improve public health and quality of life, ultimately creating healthier and more sustainable cities for current and future generations.
Within the project, DAFNI is providing the data integration, modelling and decision-support expertise needed to help cities make use of complex climate and urban data.

Dr Femke Vossepoel (Professor of Earth System Simulation at Delft University of Technology) is the scientific coordinator and lead for the UrbanAIR consortium. She spoke on UrbanAIR at the 2026 DAFNI Conference and her talk will soon be available to watch on the DAFNI website.

https://www.urbanair-project.eu/

DAFNI platform features and updates



This month the DAFNI development team has made great progress on the web application upgrade, which is on track to be fully released before the end of the year. This final block of work is looking to provide an updated workflow building experience to DAFNI's expert users, along with key usability updates that will align with other updates we've made as part of the upgrade.

As mentioned last month, we have also now finished our investigation into bringing parts of the platform outside the login wall and have begun development to support this. Next month you can expect to hear more about these plans and learn when you'll be able to access key areas of the platform without an account!

📸 Sarah Byrne, Software Engineer

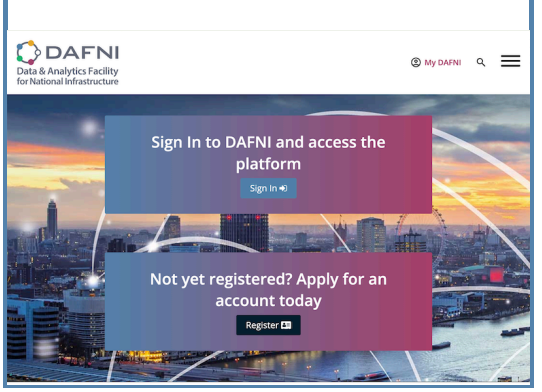
Looking to the future
Looking ahead towards 2027, we are keen to ensure that as we change and update the DAFNI platform it continues to meet the needs of our community.

If you love an area of the platform and want to let us know, think we are missing a key feature that would help you achieve the results you want, or have any other thoughts or feedback, we would love to hear from you.

Contact us at info@dafni.ac.uk and let us know!

Access our help
If you are a user of the platform and have any feedback or platform requests, please contact support@dafni.ac.uk

Standard and expert user accounts are available - find out more at the foot of this email.



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DAFNI researchers' news



DAFNI Fellow's workshop on: Trustworthy and explainable AI-for-science framework for climate-resilient geoinfrastructure

On 25 November, researchers and professionals from academia and industry will come together at the University of Leeds and online for a workshop exploring a Trustworthy and Explainable AI-for-Science Framework for Climate-Resilient Geoinfrastructure.

Workshop leaders: **DAFNI Fellow Dr Xiaohui Chen** of University of Leeds with co-chair **Dr Tom Kirkham**, DAFNI Science Lead

Xiaohui's Fellowship focuses on advancing next-generation AI-for-Science frameworks that combine physical modelling with data-driven approaches to support resilient national infrastructure systems.

PhD students, postdoctoral researchers and early-career researchers are invited to submit posters, with up to 10 selected for presentation. Contact Mr Jiaxian Li j.li.rpg@leeds@ac.uk

Researchers and professionals from academia and industry are also invited to express an interest in giving a presentation, with six presentation slots available. Contact Dr Xiaohui Chen x.chen@leeds.ac.uk

Submission deadline: 11 November 2026

Find out more at: https://xchen7.wixsite.com/gaic/collaborations

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How federated data architectures can support improved environmental data management across offshore energy programmes

DAFNI Fellow Tom Mansfield, Data Systems Architect at Plymouth Marine Laboratory (PML), ran a project meeting at the **VALMAS Valuing Marine Artificial Structures WS4 meeting at** University of Strathclyde, Glasgow on 12-14th October 2026. Tom's research as a DAFNI Fellows focuses on exploring federated data-architecture approaches to support collaboration and data sharing across UK offshore wind programmes.

One key activity was the delivery of a Digital Twin workshop. Using a "Fantasy Digital Twin" concept inspired by fantasy sports games and implementing Multi-Criteria Decision Analysis methodologies, participants were challenged to design their ideal digital twin platform by making trade-offs between different capabilities, data sources, governance approaches and technical features. The exercise proved highly effective in engaging a diverse audience of scientists, modellers and non-technical stakeholders, helping participants to better understand both the structure and value proposition of digital twins and virtual research environments while generating extensive feedback on user needs, priorities and barriers.

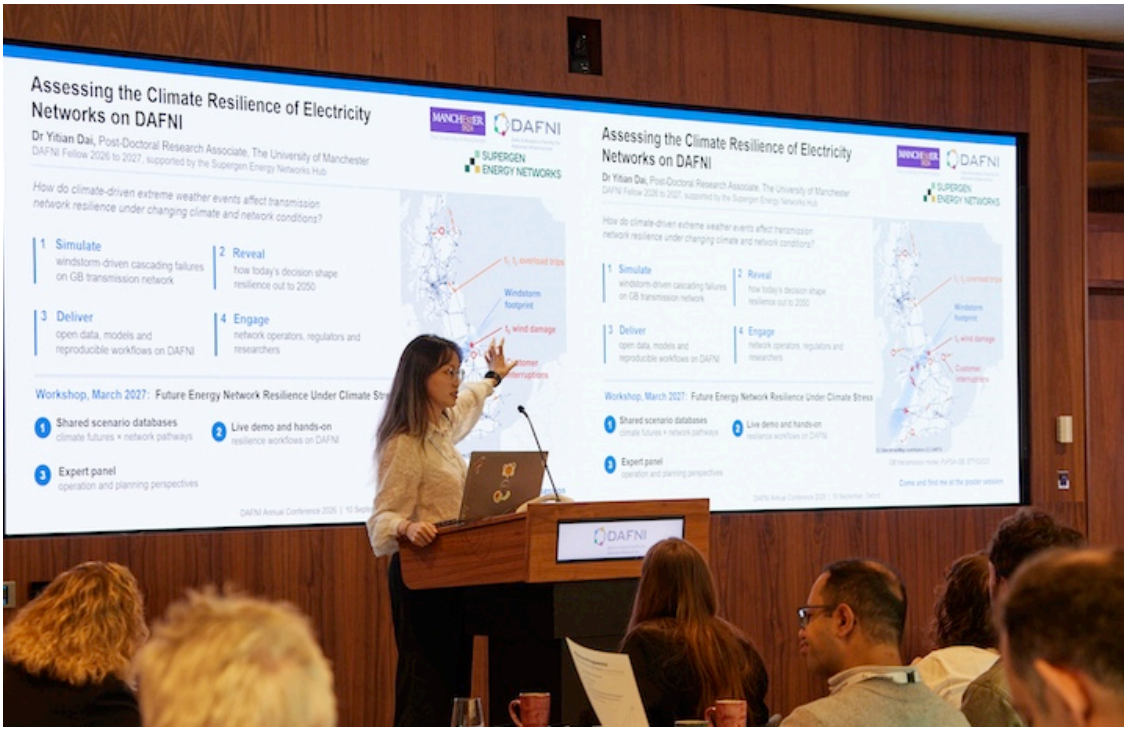
Read more at: https://www.linkedin.com/feed/update/urn:li:activity:7517877375943114752/

Building on the VALMAS presentation, Tom is giving an oral presentation at the International Digital Twins of the Ocean Summit (DITTO), taking place in Yokohama, from 11-13 November 2026

Tom will draw on experiences from the EQUIFy (Establishing a Framework for Quantifiable Evidence and Impact of Ecosystem Change Throughout the Lifecycle of UK Floating Offshore Wind Farms), VALMAS (Valuing Marine Artificial Structures) and AtlantiS projects Atlantic Climate and Environment Strategic Science, to examine technical, organisational and workflow-related barriers to interoperability, with a particular focus on metadata practices, data onboarding, and cross-community collaboration.

He will also draw on the results of the recent VALMAS Valuing Marine Artificial Structures WS4 meeting mentioned above, where he led a workshop on digital twins and implementing Multi-Criteria Decision Analysis methodologies.

Find out more at: https://www.jamstec.go.jp/j/pr-event/ditto_summit2026/



Find out about the research of DAFNI Fellow Dr Yitian Dai - energy networks under climate stress

Yitian is a Post-Doctoral Research Associate in the Department of Electrical and Electronic Engineering at the University of Manchester. Her Fellowship will explore the resilience of electricity networks under climate stress, enabling climate-driven vulnerabilities in electricity networks to be better understood and shared across the UK infrastructure research community.

Her Fellowship page encompasses the focus of her fellowship, the model and how it will be used by councils, policymakers and researchers.

She says, “Storms are now the main cause of large power cuts in Great Britain. When wind brings down one line, the power it carried has to flow elsewhere, and other lines can overload and trip in turn. As more generation moves to wind farms at the edges of the network, the way these failures spread is changing. The Fellowship builds a model of this on the real GB transmission network, runs it with real and future storms, and asks the people who plan and operate the network whether the results are useful.”

Save the date for her half-day stakeholder workshop
“Future Energy Network Resilience Under Climate Stress”
⏰ 22 March 2027 📌 Bristol

Visit her Fellowship page at: https://yitiandai.github.io/dafni-fellowship/#top

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Community news



How increasing temperatures are exposing critical weaknesses in UK infrastructure: UKCRIC's latest article for Politics Home magazine

Members of the UK Collaboratorium for Research in Infrastructure and Cities (UKCRIC) co-authored an article for *Politics Home* which discusses how rising temperatures and more frequent heatwaves have moved from being a future risk for the UK to a risk affecting our current day.

The effects of climate change are already exposing vulnerabilities across transport, utilities and construction, highlighting the need to move from reactive repairs to proactive climate adaptation. Roads, bridges, rail infrastructure are all at risk from the effects of heat as well as maintenance and construction personnel striving to work through heatwaves.

Read the full article at:
https://www.politicshome.com/members/article/increasing-temperatures-exposing-critical-weaknesses-uk-infrastructure

Visit our publications page



Watch our past webinars

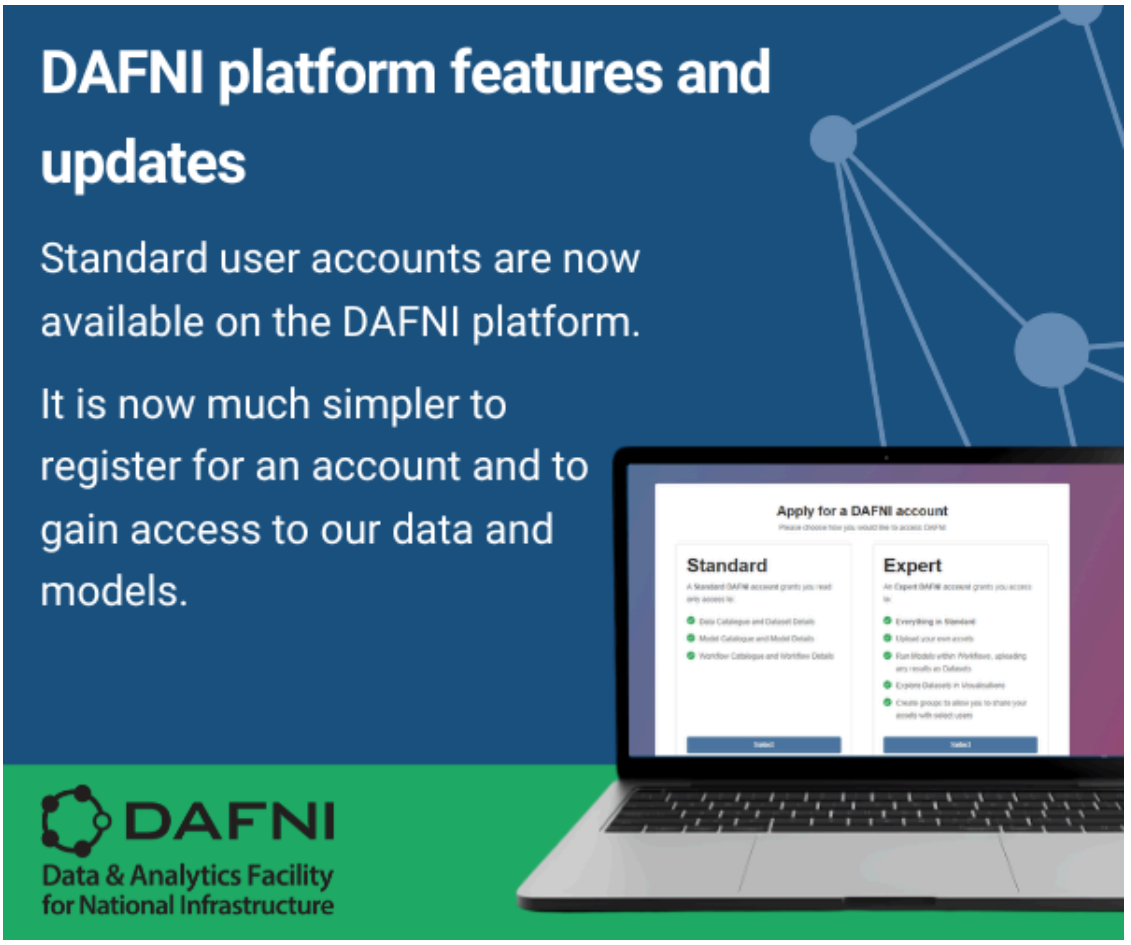
View recordings of past webinars at https://www.dafni.ac.uk/news-events/events/webinars/

DAFNI YouTube channel: catch up on conferences and interviews

Visit https://www.youtube.com/@dafnifacility118

Access our help

Please contact us directly for any assistance on info@dafni.ac.uk



Apply for a DAFNI account: interested in working with infrastructure data, models and analytics? Creating an account on the Data & Analytics Facility for National Infrastructure (DAFNI) is the first step.

DAFNI offers two account options depending on how you want to use the platform:

🔎 Standard account
Provides instant read-only access to explore:
• Data catalogue and dataset details
• Model catalogue and model details
• Workflow catalogue and workflow details

⚙️ Expert account
Includes everything in the Standard account, plus the ability to:
• Upload your own assets
• Run models within workflows and upload results as datasets
• Explore datasets through visualisations
• Create groups to share assets with selected collaborators

Whether you want to explore infrastructure datasets or actively run models and collaborate, DAFNI provides the tools to support research and innovation in national infrastructure.

Visit: https://www.dafni.ac.uk/my-dafni/

About DAFNI

The DAFNI platform supports research that aims to provide the UK with a world-leading infrastructure system that is more integrated, efficient, powerful, reliable, resilient and affordable. It is enabling the community to conduct research that is able to generate new insights at a higher level of detail and accuracy than ever before.

DAFNI was originally funded by an £8 million EPSRC investment in the UK Collaboratorium for Research in Infrastructure and Cities (UKCRIC) and a £1.2m grant under EPSRC's Resource Only Strategic Equipment. Its aim has been to become the national platform to satisfy the computational needs in support of data analysis, infrastructure modelling and visualisation, and encourage whole-system thinking for the UK's infrastructure research needs.

In March 2023 UKRI awarded £4m to STFC Scientific Computing to establish a national Centre of Excellence for Resilient Infrastructure Analysis, and move the Data & Analytics Facility for National Infrastructure (DAFNI) into its new phase.

To find out more about DAFNI, visit: www.dafni.ac.uk

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