



DAFNI NEWSLETTER, AUGUST 2025



Dear {{ contact.FIRSTNAME }}

Welcome to the DAFNI August 2025 newsletter.

It is not long now until we have the pleasure of welcoming you all to Sheffield for the **2025 DAFNI Conference**. There is still time to register. We also have exhibitor space available with tables and space for pop up banners if you would like to showcase your organisation. Please contact us as soon as possible on info@dafni.ac.uk as the spaces will be allocated on a first-come, first-served basis. There is no charge for this opportunity.

For the conference, we have some exciting new additions.

We are exploring our next funding opportunity and our Delivery Manager, **Katie Cartmell**, will be at the Poster Session and Networking Lunch to update the community on our new DAFNI Fellows scheme, if this is something of interest to you, please attend the session to find out more information!

Our colleague **Sarah Byrne** will be giving an update on DAFNI, demoing our latest developments, including our new Front End and basic user accounts, discussing our upcoming features and moving onto the new Science and Technology Facilities Council (STFC) Scientific Computing cloud.

Our **Data Infrastructure for National Infrastructure (DINI)** project was part of an exciting programme of work drive by the Department for Science, Innovation and Technology (DSIT), aimed at better and safer use of data in research, the DINI project focused on opportunities and challenges in data sharing in national infrastructure, specifically focusing on energy, transport and water.

Discussing the DINI project's results and recommendations will be **Catherine Jones**, Energy Data Centre Lead, STFC and **Elizabeth Newbold**, Open Science Lead, STFC. Further details about our new speakers can be found below.

Our poster session will take place after our networking lunch, featuring our fantastic Centre of Excellence projects. The projects were funded from UKRI's Building a Secure and Resilient World and DSIT. More information on the projects can be found on our website [here](#).

In September we look forward to our DAFNI webinar featuring **Dr Raghav Pant**, University of Oxford, presenting his research around building a road transport model for flow allocation and disruption at Great Britain (GB) scale. It is a large model with around 12 million allocations of journeys around the road network of GB and is being stress tested with extreme hazard events. Be sure to book your space!

Dr Brian Matthews, DAFNI Programme Lead

Book now

2025 DAFNI Annual Conference

BRIDGING THE GAP

BETWEEN ACADEMIA, GOVERNMENT AND INDUSTRY



THE EDGE, SHEFFIELD 11 SEPTEMBER 2025

Join us at [The Edge](#) at the University of Sheffield!

Our fantastic line-up of speakers includes our **two keynote speakers**, **Dr Juliet Mian**, Director of Arup's Climate Services and Sustainability portfolio, and **Dr Sarah Hayes**, Chair Data Sharing Working Group, Independent Consultant.

Joining our line-up is our colleague **Sarah Byrne**, who is a Senior Software Engineer and the technical Product Owner of the DAFNI platform. She leads the technical team on product direction, guiding the development of the platform's capabilities to continue to meet the needs of the community.

We are pleased to announce **Catherine Jones** and **Elizabeth Newbold** are joining our conference line up.

Catherine leads the Energy Data Centre within the Energy Research Unit, Technology Department, UKRI/STFC. She has a wide experience in providing information systems and services to the academic community, both within and external to STFC, using her software engineering and information management expertise to deliver effective services to user communities.

Elizabeth is the Open Science Theme Lead at UKRI-STFC. The Open Science Theme includes activities related to data stewardship, open repositories and library services supporting open sciences practices and research at STFC. She has a background in scientific information with a focus on open access, FAIR and open data.

Invited speakers

- **Oliver (Olly) Tones**, DSIT
- **Dr Richard Kirkham**, University of Manchester, on SALIENT
- **Rachael Steller and Karina Rodriguez Villafuerte**, Climate Change Committee
- **Professor Nicholas Vasilakos**, University of East Anglia, on the CROSSEU project
- **Paul Hickey**, Managing Director of RAPID and **Jonny Wilson**, Environment Agency, on National Water Resources Quality

Trusted research panel:

- **Emily Jefferson**, Health Data Research UK
- **Jason Feehily**, University of Nottingham
- **David Batho**, Jisc
- **Tash Buckley**, Cranfield University
- **Kathryn Dally**, UK Research Integrity Office

Prices: £50, student £25.

Book via: <https://web.cvent.com/event/f255b158-1692-49f3-9efd-a68e3c86eba1/summary>.

Timetable:

Morning

- 09:00 Arrival Breakfast networking
- 09:30 Welcome and introduction
- 09:45 Keynote: Making good choices Juliet Mian, Arup
- 10:15 Update on DAFNI Sarah Byrne
- 10:35 Networking break

Invited Speakers Session

- 11:00 SALIENT: Building a Secure and Resilient World: Research and Coordination Hub
Dr Richard Kirkham, The University of Manchester
- 11:20 Assessing the resilience of infrastructure in the UK
Rachael Steller and Karina Rodriguez Villafuerte, Climate Change Committee
- 11:40 Climate Extremes and Income Inequality: First Glimpses of Econometric Evidence and Policy Insights from the CROSSEU Project Professor Nicholas Vasilakos, University of East Anglia
- 12:00 Networking lunch Poster session and demonstrations

Afternoon

- 13:30 Keynote: Do it once and share it many times
Sarah Hayes, Chair Data Sharing Working Group, Independent Consultant
- 14:00 Learning to Fly: Research Data Access Pilots
Oliver (Ollie) Tones, Department for Science, Innovation and Technology
- 14:20 DINI Project Results and recommendations
Catherine Jones and Elizabeth Newbold
- 14:40 Networking Break
- 15:05 Trusted Research Panel:
 - Emily Jefferson, Health Data Research UK
 - Jason Feehily, University of Nottingham
 - David Batho, JISC
 - Kathryn Dally, UK Research Integrity Office
 - Tash Buckley, Cranfield University
- 15:55 From hackathon to legislation - the journey of NUAR
Holger Kessler, AtkinsRéalis
- 16:15 National Water Resources Quality Modelling: From research to delivery
Paul Hickey, RAPID and Jonny Wilson, Environment Agency
- 16:35 Conference closing remarks
Tom Kirkham, Science Lead, DAFNI
- 16:45 Close of Conference

DAFNI WEBINAR SERIES 2025



DAFNI

Data & Analytics Facility for National Infrastructure

DAFNI WEBINAR 24 SEPT 2025

Speaker: Dr Raghav Pant

Senior Research Associate, University of Oxford, ECI Oxford



DAFNI

Data & Analytics Facility
for National Infrastructure

Building systemic resilience

Click to book for our September webinar featuring **Dr Raghav Pant** of University of Oxford.

Raghav will speak on **NIRD National Infrastructure Resilience Demonstrator** – Building systemic resilience of interdependent infrastructure networks at the national scale

[Book now](#)

Watch our past webinars

View recordings of past webinars <https://dafni.ac.uk/past-events/>

Including [Professor Richard Dawson on FIRM Flood Infrastructure Resilience Modelling](#)

News from our central team

DAFNI supporting your research proposals



The summer holiday period is often a quieter time in the research community with fewer events and conferences being arranged. However, more often than not these periods are filled with writing new proposals for future funding opportunities. This is particularly the case this year for European Funding with a number of Horizon Europe deadlines in October.

At DAFNI we are happy to support your research proposals via letters of support and access to the DAFNI platform. If you would like a letter of support, please get in touch. Publishing your research outputs on DAFNI helps your project work live on beyond the funding and find new collaboration opportunities.

Assessors looking at bids always welcome strong sustainability plans beyond projects and we hope that our support for your work can help you succeed.

Contact us on info@dafni.ac.uk

ICE webinar recording now available


In June, our colleagues from the DAFNI technical team, **Kyle Stevenson** and **Teagan Zoldoske**, presented DAFNI to the Institution of Civil Engineers.

They discussed how the platform is being used for various civil engineering applications such as:

- Digital twins
- Flooding hazards
- Infrastructure demands
- Transportation modelling

Attendees saw a demo of the platform and learnt about the importance of data analytics in helping to make infrastructure more efficient, reliable, resilient and affordable.

This webinar is now available to watch at: <https://www.ice.org.uk/events/recorded-lectures/dafni>



Webinar

Using data analytics for national infrastructure

Event organised by ICE

Overview

In this ICE South West Lunch & Learn session, Kyle Stevenson and Teagan Zoldoske will introduce the **Data & Analytics Facility for National Infrastructure (DAFNI)** platform.

The computing platform aims to support advanced research into national infrastructure, including transport, water, and energy and city scale modelling.

The webinar will discuss how the platform is being used for various civil engineering applications such as:

- Digital twins
- Flooding hazards
- Infrastructure demands
- Transportation modelling

Attendees will see a demo of how the platform works in practice and learn about the importance of data analytics in helping to make infrastructure more efficient, reliable, resilient and affordable.

SOFRAMODE: powering flood mitigation measures in the UK and overseas

CASE STUDY
SOFRAMODE: powering flood mitigation measures in the UK and overseas

Dr Vassilis Glenis: Senior Lecturer in Hydroinformatics, School of Engineering, Newcastle University



Introduction
 Town planners, academics and policymakers can now use the CityCat hydrodynamic model to better understand surface water flooding and high-profile storm overflow events and plan detailed mitigation measures related to any town or city, in the UK or overseas.
 The SOFRAMODE (Sewer Overflow Flood Risk Analysis Model DAFNI Enabled) project took the existing CityCat model and developed it.
 Testament to CityCat's success is that it is already being used in a high profile Newcastle City Council project termed 'Blue Green Newcastle'. The programme aims to use "innovative flood and water management techniques that make [the city] more resilient to climate change".



What would you identify as the main impact of this work?
 "The new version of the CityCat model developed in SOFRAMODE is completely refreshed and includes a new optimisation framework. Users can now choose their domain, for example a city, and a range of interventions such as ponds, green roofs and permeable pavements. The model will then find the best solution for you. We are now working towards making it user friendly for non-expert users in industry and local government," Dr Vassilis Glenis.

Key challenges that SOFRAMODE aims to solve
 With climate change and increasing urbanisation comes the promise of higher frequency and greater severity of urban flooding and storm overflow events.
 When mapping a large area such as a UK city, it is extremely difficult for planners to ascertain which techniques should be best utilised, and where.

JULY 2025  **DAFNI** Data & Analytics Facility for National Infrastructure 1/5

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Testament to CityCat's success is that it is already being used in a high profile Newcastle City Council project termed 'Blue Green Newcastle'. The programme aims to use "innovative flood and water management techniques that make [the city] more resilient to climate change".

The team is led by Principal Investigator **Dr Vassilis Glenis**, Senior Lecturer in Hydroinformatics in the School of Engineering at Newcastle University, with Co-Investigators **Dr Claire Walsh**, Professor of Water Security and **Chris Kilsby** (former Professor of Hydrology and Climate Change), plus Researcher, **Dr James McKenna**, Research Associate in Hydrodynamic Modelling, all from Newcastle University.

[Click to read or download the full case study](#)

Improving infrastructure resilience, data opportunities and barriers through DAFNI transport and energy projects

In May 2024, the DAFNI programme announced its funding opportunity which focused on infrastructure resilience and data sharing opportunities and barriers.

We recently held a project closure wrap up session with DAFNI's three energy and three transport projects, who presented their progress and outputs available on DAFNI:

- **BRINES**: Building Risk-Informed Redundancy in Net-zero Energy Systems (Dr Hannah Bloomfield, pictured, top)
- **FORNet**: DAFNI Forecasting services for energy networks
- **D-RES**: Provision of distributed grid resilience using EVs during extreme weather events
- **ClimaTRACKS**: Forecasting resilience of railway networks under propagating uncertainty
- **MARS**: Modelling Aviation Resilience Scenarios
- **IMPACT**: Improving flood-disrupted road networks resilience with dynamic people-centric digital twins (Dr Qiuchen Lu, pictured, bottom)

[Click to read the full blog](#)



Partnership news

DAFNI researchers promoted



Professor Richard Dawson is now working with the IPCC as a Review Editor for the Water chapter on their 7th Assessment Report. He previously worked with IPCC as Lead Author and Coordinating Lead Author. The new role involves oversight of the review process and a responsibility to ensure the content is accurate and comprehensive. We work with Richard on the FIRM project (Flood Infrastructure Resilience Model) which simulates flooding and the human response to flood events. Watch his presentation on FIRM at the 2024 DAFNI Conference: <https://youtu.be/aXNUkzEj-W8?si=uP7e-nwZT3gWkpX9>

Desmond Bala Bisandu has started a new position as Assistant Professor in Digital Technologies at Milton Keynes University! Desmond was previously Postdoctoral Research and Teaching Fellow in AI and Scientific Computing at Cranfield University. DAFNI has been working with Desmond, Dr Fabian Steinmann and Dr Irene Moulitsas on the MARS project (Flight Diversion Modelling for the UK Aviation System). Watch their presentation on MARS at the 2024 DAFNI Conference: <https://youtu.be/w5-OuGuklvk?si=JRU1JQUqoJgn836w>




New RIWS paper in Journal of Hydrology



Journal of Hydrology
Volume 662, Part C, December 2025, 134042



Performance-based resilience assessment in integrated water systems: challenges and opportunities

Leyang Liu , Ana Mijic

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<https://doi.org/10.1016/j.jhydrol.2025.134042>

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Congratulations to **Dr Leyang Liu** and **Dr Ana Mijic** for the new paper in *The Journal of Hydrology* which reviewed performance-based resilience assessment in the context of integrated water systems and proposed a unified framework for dynamic resilience assessment at a systems level.

The paper was part of the DAFNI project "Resilience for Integrated Water Systems (RIWS)" with Ana Mijic, Leyang Liu and Dr Barnaby Dobson from Department of Civil and Environmental Engineering, Imperial College London.

Read the paper at: <https://www.sciencedirect.com/science/article/pii/S0022169425013800>

DAFNI platform features and updates

We are excited to announce that on Monday 15th September, we will be updating the DAFNI platform to introduce a new 'Basic User' account type alongside our current 'Expert User' accounts. With this new option, we will be able to grant those registering on the platform instant read-only access, allowing anyone to view the range of public data and models we have available in our catalogues. As shared with our users last week, this update will require the DAFNI platform to be unavailable for several hours during the day to facilitate the release.

We are also happy to share that following the hard work of the team to improve the security of the platform, we have received a positive report back from the UKRI penetration testing team.

Access our help

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



DAFNI TECHNICAL TRAINING EVENT



DAFNI technical training

A great opportunity to get up to speed quickly on DAFNI and to ask our technical experts your burning questions. **Especially recommended for those developing a research proposal and are thinking of including DAFNI as the platform of choice for the research.**

Our regular technical training events (Wednesdays, 1:30pm-4:30pm) are available to book via Eventbrite (see weblink below) Next training dates:

- 3rd September
- 22nd October
- 17th December 2025

To attend the event you will need experience of entering code through a command line interface, for more information and to book, please visit: <https://www.eventbrite.co.uk/o/dafni-31793198351>



Apply for a DAFNI account

Apply for a DAFNI account

Join our community

If you would like to join the community of DAFNI users, please visit the [DAFNI website](#) for more information.

Current users of DAFNI

Get updated on the latest technical updates and features, visit: <https://www.dafni.ac.uk/dafnilogin/>

Community news

Energy Efficient Computing workshop

The [Computational Mathematics Group](#) from STFC's [Scientific Computing Department](#) is organising a workshop on Energy Efficient Computing at STFC Rutherford Appleton Laboratory on 15-16 September.

The 2-day workshop is primarily aimed at software development teams embedded within CoSeC communities but is also suitable for wider audiences. The sessions will revolve around four key themes: Qualitative Algorithms, Community, Hardware, and Quantitative Practice and will be designed to share knowledge and start conversations around making energy-efficient choices.

More information and registration can be found here... <https://www.numerical.rl.ac.uk/events/workshop-on-green-computing/>

Funding opportunity

The Royal Academy of Engineering's Research Fellowship supports outstanding early-career academics to become future research leaders in engineering, with long-term support and funding of up to £625,000. Applications close on 17 September.

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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