



## **NERC's Digital Solutions Programme**

creating innovative digital services that deliver economic, societal and environmental benefits across the UK

DAFNNI CONFERENCE 5<sup>TH</sup> JULY 2022

**Richard Kingston**

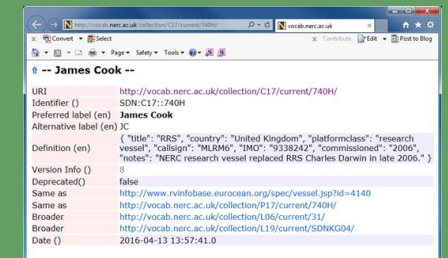
**Prof of Urban Planning & GISc**

@gisplanner @NERCdsh #NERCdsh

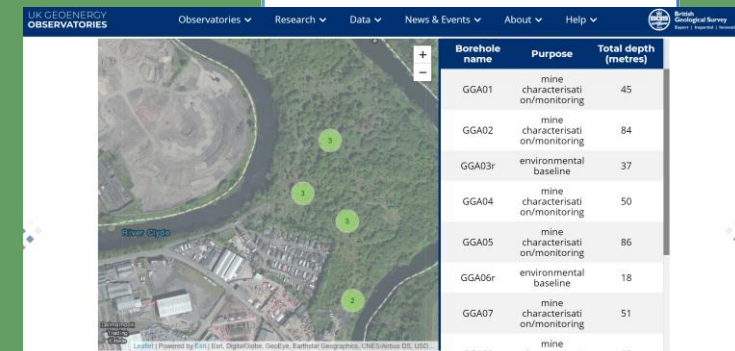
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# Outline

- Rationale for the NERC Digital Solutions Programme
- Why are we building a digital solutions hub?
- What can the NERC Digital Solutions Hub do for you?
  - supporting your policy making
  - housing demonstrator pilot
- How can you help us build the hub?
  - user needs
  - your data and integration with the Hub
- Next steps – getting you involved
- Questions



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Alternative label (en)	JC
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Borehole name	Purpose	Total depth (metres)
GGA01	mine characterisation/monitoring	45
GGA02	mine characterisation/monitoring	84
GGA03r	environmental baseline	37
GGA04	mine characterisation/monitoring	50
GGA05	mine characterisation/monitoring	86
GGA06r	environmental baseline	18
GGA07	mine characterisation/monitoring	51
	mine	

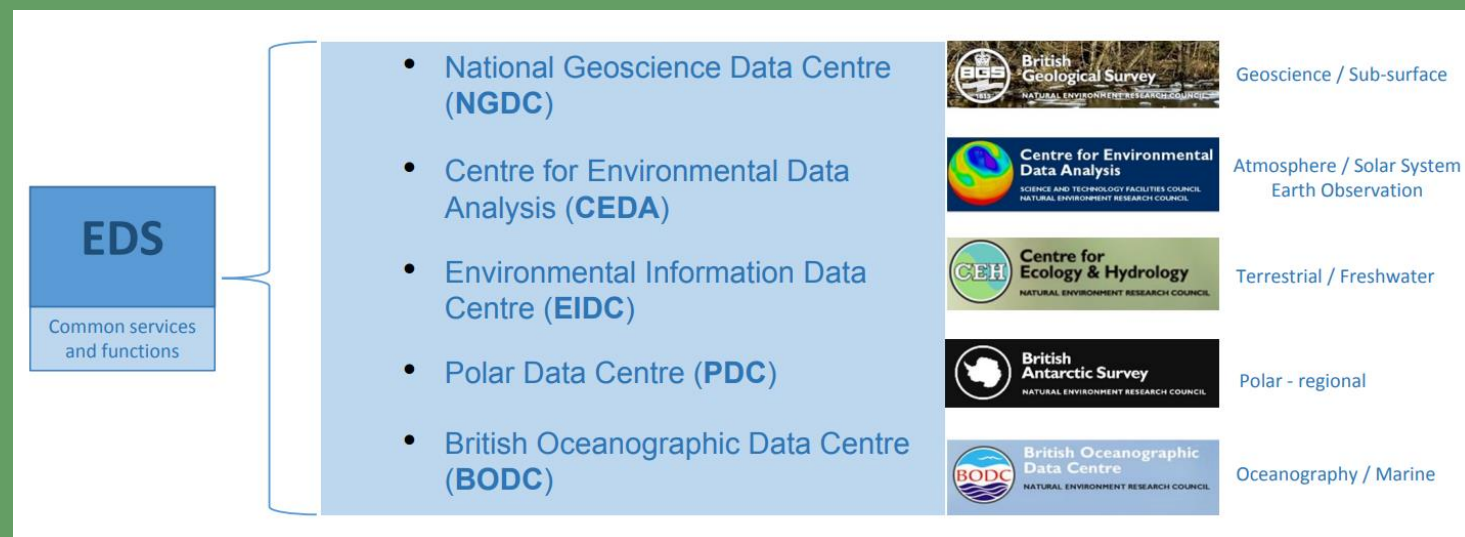
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# Why are we building a DSH?



- The primary objective of the Digital Solutions programme is to support ‘service innovation’.
- £7m investment over 4 ¼ years
- NERC’s Environmental Data Service (EDS) demonstrates through its ‘Data Policy’ a strong commitment to professionally **manage for the longer-term** the data generated by its funded research, making it accessible as both **evidence of existing scientific work but also for future re-use**.



- NERC and the EDS do an excellent job at curating and maintaining peta-bytes of data.
- Provide a high-quality service to enable access, use and analytical tools (e.g. DataLabs) to use this data for high quality research.

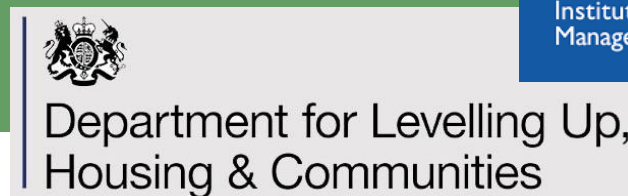


# Digital Solutions has a core focus to work closely with stakeholders across the non-academic community

- NERC realise that their data and expertise within the EDS have huge potential value to a much wider community of potential users
- National government
- Devolved nations
- Local (regional) government
- QUANGOS and agencies (EA, HSE, NRA, SEPA etc.)
- Health agencies
- Civil contingencies
- Third sector – FoE, Greenpeace, local environment organisations (citizen science)
- Private sector – from SMEs to international



Health & Safety Executive



# Our approach

## 1. Making better use of data

- Putting NERC's data at the heart of our work
- Connecting with **social, economic, health** and other **environmental** data across the **whole of the UK**
- Making NERC's data more discoverable to non-academic users
  - plus those of you who are not environmental scientists within academia

## 2. Connecting with users

- A **gateway** to user-friendly digital toolkits
- **Data discovery** – most users are not aware of what NERC data is available to them
- **New tools** – co-created to meet user needs
  - how can we support your decision making?
  - what do you want the hub to do?
  - how can it help you do your job?



# User-centric digital solution

- This is not just a data portal
- Will utilise JASMIN – NERC's super-computer
- We realise we can't do everything initially, so focus on two main 'use cases'
- Putting users at the centre of the Hubs development
- Working with and connecting a range of partners and their data with users
- Embedding our software engineers in partner orgs and their/your technical people working in Manchester
  - including Defra, EA, NHS, HSE, NI, Scottish and Welsh government agency partners and NERC's Data Centre staff

## A Climate Ready Nation

[www.climatejust.org.uk](http://www.climatejust.org.uk)

[urbanobservatory.manchester.ac.uk](http://urbanobservatory.manchester.ac.uk)



## A Connected Health Nation

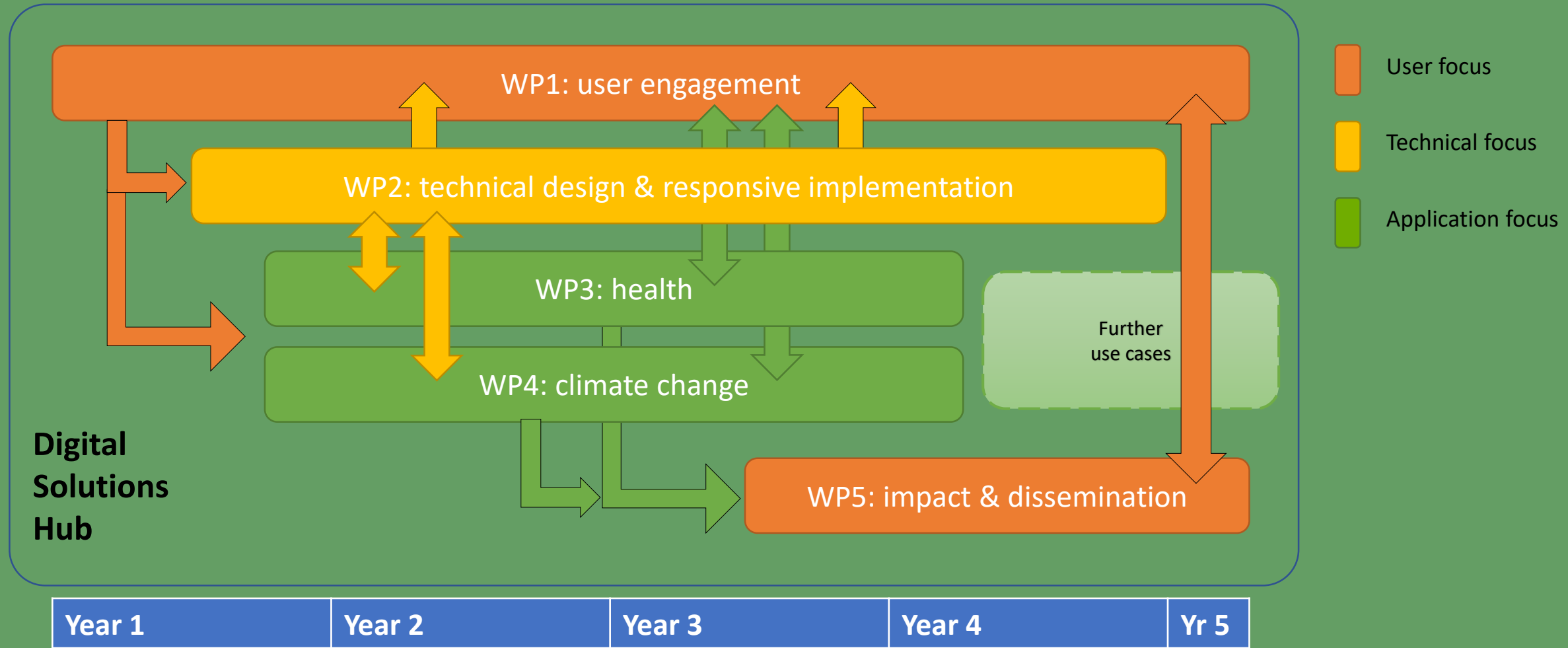
[britainbreathing.org](http://britainbreathing.org)

[www.cloudywithachanceofpain.com](http://www.cloudywithachanceofpain.com)



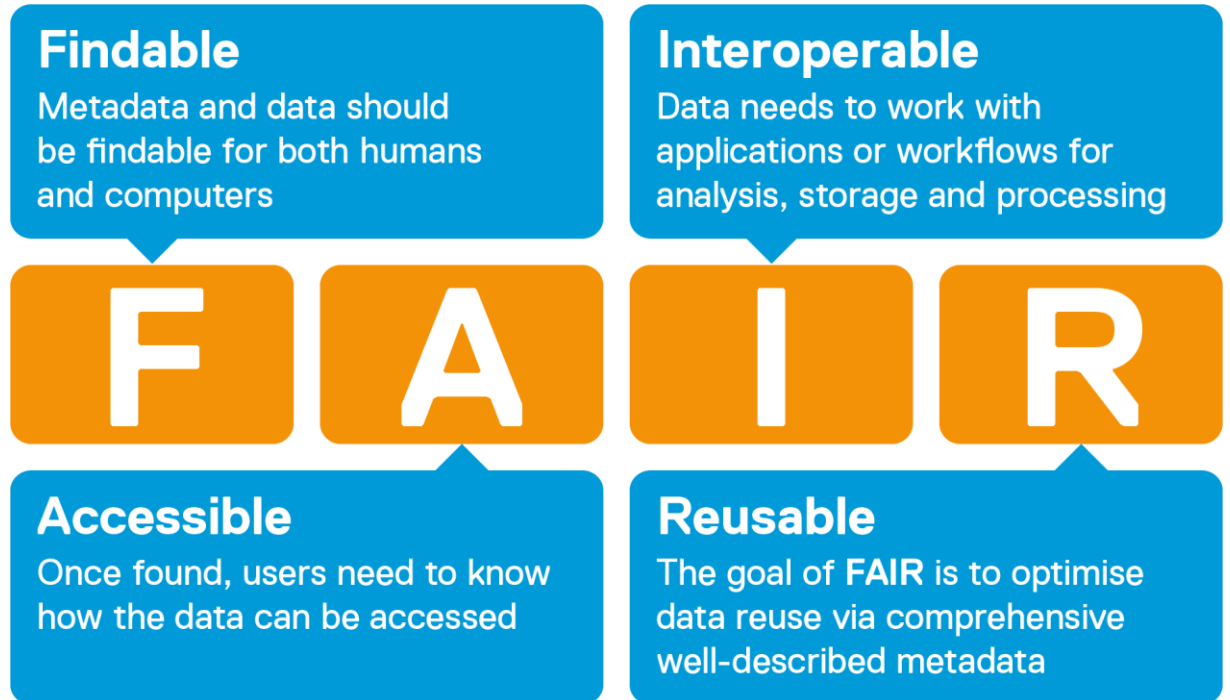


# NERC Digital Solutions Programme Work Package Structure



# Developing pilot 'use cases'

- We recognise that we can't just ask users how NERC's data might help you do your job.
  1. you have no idea what data NERC hold
  2. you might not have the technical skills to interrogate and analyse the data in meaningful ways
  3. you probably don't have the computational power to make best use of such data
  4. and many more issues
- Applying the FAIR approach

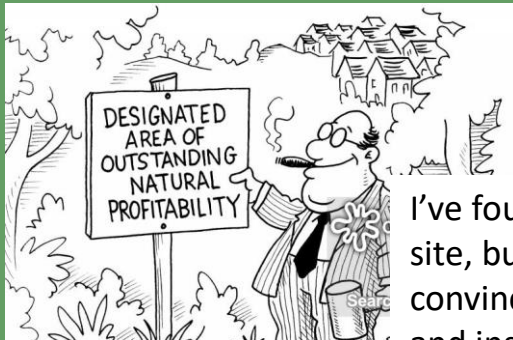


FAIR Principles <https://www.go-fair.org/fair-principles/>

# Housing needs assessment 2030, 2040, 2050, 2070...



We have to allocate *how many* houses in the plan? We'll have to re-run the UKCIP 2025 models on that... it's gonna cause even more delays and our budget is already stretched. We can't afford to get the consults to re-run their model.



I've found this amazing site, but I now need to convince the investors and insurance company of its viability...

But we can't waste anymore money on this, the whole process is so slow !



**The regulators**  
We really need to operate at the landscape scale

If only we had some sort of system to run that on....

I've head NERC have loads of data we could use but its difficult to access and use....

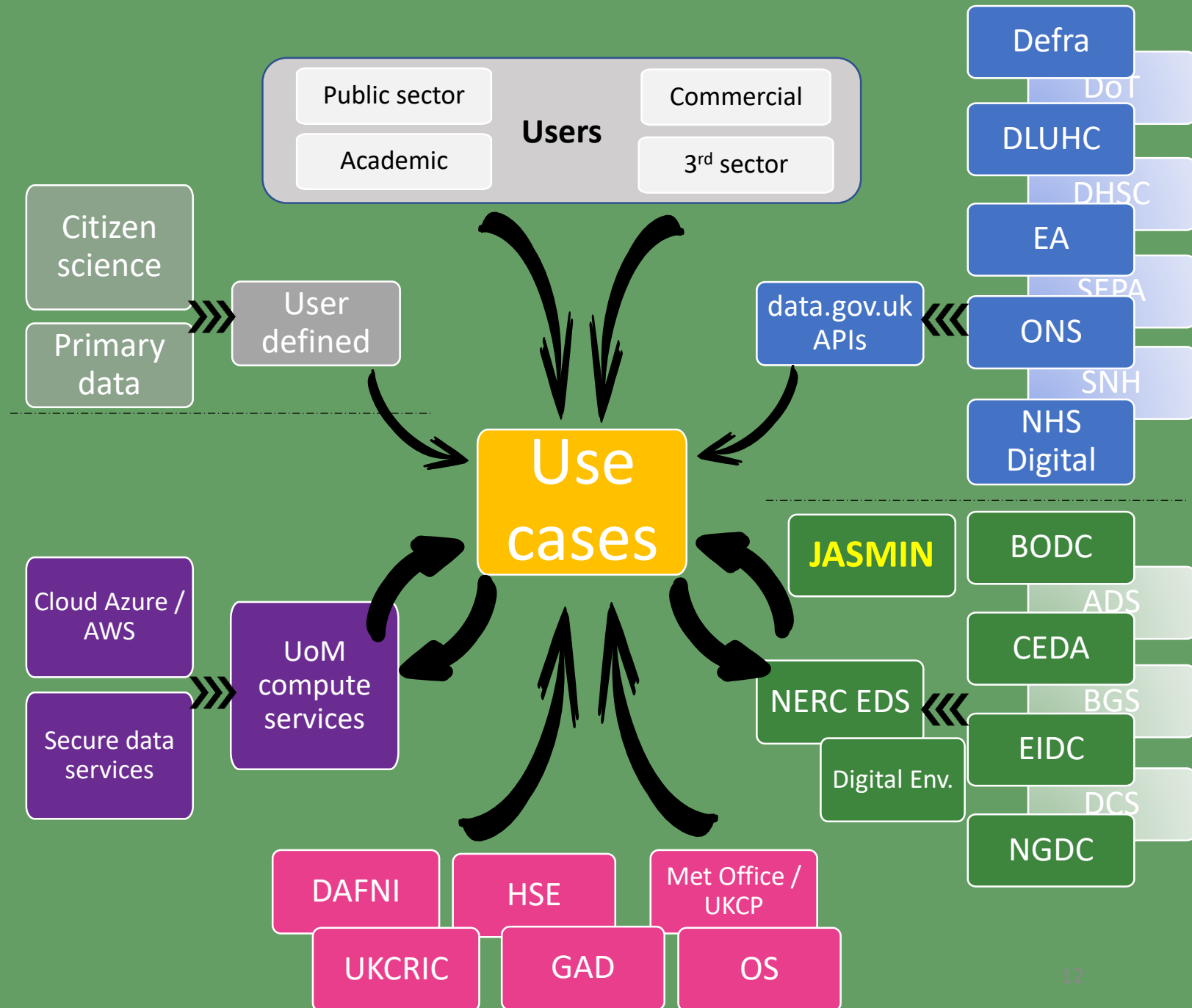
If really don't have the skills to do this but it looks like it might solve our problem...



# User-centric digital solution

- Focus on our two use cases initially but built flexibly so more use cases come on stream as we move forward.
- Will allow users to run computationally intensive analysis
  - What-If? modelling
  - Use other's models or run your own
- We will evolve in to a UKRI 'national facility' so not disappearing after the initial funding\*

\* Assuming we don't mess this up!





# Next steps, questions & further details

- Getting you involved
  - June onwards running user needs interviews and workshops across the UK in different regions and nations.
  - How could the Hub support your work?
  - Help us develop the use cases.
- If you wish to be engaged in our workshops please get in touch.

@gisplanner @NERCdsh #NERCdsh

## The Pankhurst Institute

Come and spend time working with us directly in our new home on Oxford Rd.



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<http://www.digital-solutions.uk/>