



**PSDI**  
PHYSICAL SCIENCES  
DATA INFRASTRUCTURE

# Designing support strategies for enabling cultural change in data practices for the physical sciences

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## Foundations from Our Community Statement of Need

PSDI is a vision for how the physical sciences can transition to become a fully connected and digital discipline. To gather initial requirements from the community we created a Statement of Need: a rapid scoping exercise that engaged broadly with the physical sciences and related communities involving over 30 Engagement Activities with over 50 organisations.

These organisations formed part of the four pillars we identified as essential to providing resources to meet the needs of the community:  
Pillar 1. Facilities, Institutes and Hubs  
Pillar 2. National Research Facilities  
Pillar 3. Computational Initiatives  
Pillar 4. Research Institutions, research groups and laboratories

## Community Events for acquiring feedback

In collaboration with our Partners and other groups, we regularly run events for the community. These events provide opportunities to learn about PSDI, exchange knowledge, share experiences, and connect with peers.

We also use these events as an opportunity for the community to share their requirements for PSDI and provide feedback on our resources and ideas.

## Machine Learning Schools

Machine Learning Schools run by PSDI in collaboration with Alchemy, PSDS, AHSO, STFC-SCD and CCPS are examples of in-person education we provide. These schools help raise awareness of state-of-the-art methods and give participants hands on learning.

## Technical Workshops

In addition to our in-person training, we also run workshops focused on a particular topic e.g. Data in Polymer Science, and Units, Symbols, and Terminology. These events bring together participants with similar challenges to work on solutions that benefit the whole community.

## Self-paced Learning

PSDI provides many self-paced learning resources including interactive Moodle courses and tutorials. These are designed to help researchers develop essential skills in areas such as data, computing, research data management, and other transferable research skills.

## Resource Development by our Pathfinders

Pathfinders are a means to focus resource development in key strategic areas and establish exemplar approaches and systems into the PSDI infrastructure that can be expanded into further domains, data types, techniques and user communities over time.

Our initial Pathfinders focused on Catalysis, Process Recording, Machine Learning, Data Collection, Biomolecular Simulation, Reproducible Computational Workflows, and more.

# PSDI

PHYSICAL SCIENCES  
DATA INFRASTRUCTURE



Services



Tools



Community



Data



Guidance & Training



Collaboration

## Knowledge Base

The PSDI Knowledge Base provides access to guidance, support and training materials. A Getting Started section helps new users to find their way around PSDI resources and a Guidance section provides an introduction to data-related topics and using PSDI resources.

## Webinars

PSDI hosts regular webinars, which are promoted on our Events page. The Webinars cover a wide variety of topics that are of interest to the physical sciences community and beyond. Recordings of past Webinars are available on our YouTube channel.

## Case Studies

Our community value seeing examples of how technology or best practices can be used to overcome Shared Challenges. For that reason, we look to share our experiences through Case Studies. Examples include implementing ELNs and resurrecting legacy data sets.

## Local to International Community Networks

PSDI isn't just a single institution or organisation but a group of individuals, organisations and institutions. The main partners in PSDI are The University of Southampton and the Science Technology Facilities Council, but we are joined by a growing number of partners.

In addition to our collaborators, we have connections with related networks and organisations, big and small. These are not just those in the physical sciences but also more broadly those with related interests such as Electronic Research Notebooks, Data Stewards, and FAIR.

Visit our website at [www.psi.ac.uk](http://www.psi.ac.uk)



UK Research and Innovation



University of Southampton



Science and Technology Facilities Council



Engineering and Physical Sciences Research Council