**Smart Data Research UK Data Services briefing**

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# Introduction

The purpose of this briefing is to situate the data service objectives outlined in the data services call specification within the wider framework of Smart Data Research UK (SDR UK).

Our programme [strategy](https://www.sdruk.ukri.org/our-work/publications/) sets out the aims and objectives for SDR UK, including our theory of change, key challenges, case studies, and descriptions of the opportunities related to our research pillars. We have made minor updates to the SDR UK strategy since December 2023, reflecting input from our engagement exercise. We encourage applicants to familiarise themselves with our programme strategy.

This briefing also provides further information about each of the data services objectives, including activities and support we think you will need to provide to meet these objectives. Where your proposal deviates from these, we will expect to see a strong justification.

# Objectives map

The table below shows objectives for the SDR UK programme, mapped to the specific objectives for our data services. The call specification describes each objective in the ‘What we are looking for’ section. Subsequent sections in this briefing document provide additional information about the activities we expect to be required in your work to deliver each objective, including:

1. how the SDR UK strategic hub will work with your service
2. how your service, other SDR UK data services, and other programmes may work together

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| --- | --- | --- | --- |
| **Programme objectives** | **Data services objectives** | **Key activities** | **Indicative KPIs and measures** |
| **Access: Provide secure data access** | 1. Acquire, steward and enable safe access to smart data for research  | 1.1 Acquire data by building long-term partnerships with data owners or other means.1.2 Develop and curate data products that meet the needs of users with different skill levels. 1.3 Address challenges around the use of smart data for research, for example representativeness, uncertainty, provenance, bias, privacy protection, or licencing issues.1.4 Provide digital research infrastructure and information governance to protect sensitive data while making data available to the UK research community on equal terms. 1.5 Provide user support. | # of data products, or % coverage of a target category of data# of research proposals received from outside the data service host organisation. Of which, % that receive data |
| 2. Collaborate to build a user-friendly federation of services and enable cross-domain research  | 2.1 Contribute to cross-programme efforts to streamline processes, products and services and make SDR UK data Findable, Accessible, Interoperable and Reusable (FAIR).2.2 Collaborate with data services beyond SDR UK to standardise and streamline services.2.3 Support and implement steps to establish the next generation of digital research infrastructure to enable fast, safe and efficient sharing and linkage. | % of target processes, products or services that are streamlined or standardisedFeedback on user experience via SDR UK user survey |
| **Trust: Safeguard public trust** | 3. Ensure responsible use of data | 3.1 Protect sensitive data.3.2 Control and process data in an ethical and legal manner.3.3 Seek and take account of public views to maintain public trust, working in partnership with others in SDR UK and the wider landscape. | Outcomes of accreditation procedures and audits (e.g. Digital Economy Act Accredited Processing Environments and ISO standards) Compliance with principles and recommendations set via SDR UK public dialogue.  |
| **Capability: Build capability for cutting edge research** | 4. Build capability across the research community | 4.1 Build an inclusive community of practice around smart data that extends beyond your core partners.4.2 Work in collaboration with other SDR UK data services and investments to support the development of research skills through training and capacity building. 4.3 Undertake activities to grow the research user base for the data.4.4 Provide training in working with your service’s data and tools. | # of training events / materials# of people attending events / using materialsFeedback via SDR UK user survey |
| **Impact: Generate social and economic benefits** | 5. Be a centre of excellence for smart data research, enabling impact through ground-breaking research | 5.1 Conduct pioneering impact-focused research that demonstrates the value of smart data to support changes in practice, thinking or capacity and that creates a positive impact in our society, economy or environment.5.2 Provide thought leadership arising from your team’s hands-on experience in working with the data.5.3 Bring researchers, policymakers, and industry together to champion the use of smart data to inform policy and address societal challenges.5.4 Develop partnerships and seek support through other funding opportunities to widen the impact of your service. | # of research publications by data service users # of citations of data service users’ workImpact case studies |

*These objectives and activities may not be exhaustive for your data service. After the commissioning process, each data service will work with the strategic hub to agree on KPIs that support SDR UK programme objectives and best reflect the challenges and opportunities of the service.*

# Activities and approach to delivering your data service objectives

## **Objective 1: Acquire, steward, and enable safe access to smart data for research**

The call specification sets out five activities that we expect to be important in meeting this objective. Your approach to meeting this objective should consider risk mitigation and legacy planning: consider how can you create pathways for sustained, managed data access (e.g., in the event that a partnership terminates, regulations change, or after your SDR UK funding ends).

Please note the data services will be expected to comply with standard ESRC [research data policy](https://www.ukri.org/publications/esrc-research-data-policy/) and [data ethics guidance](https://www.ukri.org/councils/esrc/guidance-for-applicants/research-ethics-guidance/data-requirements/) as a condition of funding. The services should also take account of and implement relevant guidance from [National Cyber Security Centre](https://www.ncsc.gov.uk/) and [National Protective Security Authority](https://www.npsa.gov.uk/).

Requirements related to this objective:

* we expect applicants to dedicate a minimum of 60% of their total budget to delivery of this objective.

**Activity 1:** Acquire data by building long-term partnerships with data owners or other means.

*What you should explain in your proposal:*

Your proposal should include a high-level data acquisition plan, and cost in the right level of resource for your plan. You may allocate a portion of your budget to source data from companies, make this data ready for use in research and capture any access or licence restrictions regarding its use.

Your proposal should explain how your approach will support and provide assurance of secure data access for broad communities of researchers. It is critical that data access extends beyond your core team, and beyond users from within your own research institute.

*What you can expect from the wider programme:*

The strategic hub will leverage its position within UKRI to influence and engage strategic partners. You will also support and be supported by the other data services, sharing connections and partnership opportunities for the benefit of the wider programme. The hub will provide coordination around pursuit of partnerships where data services’ scope overlaps.

**Activity 2:** Develop and curate data products that meet the needs of users with different skill levels.

*What you should explain in your proposal:*

In the Approach section, your proposal should indicate the types of data products and other outputs you anticipate creating, and you should provide a rationale for this. Take care to adequately resource the required activities, which may include:

|  |  |
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| * ingestion
* curation and documentation
* enhancement
* linkage
 | * storage
* discovery
* aggregation, visualisation, derivatives, tools and platforms, and/or other products
* security
 |

The data you provide as a service should, as far as is practical, be research ready.

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| **The meaning of ‘research ready’:** You may find it useful to review [ADR UK’s roundtable report on research ready data](https://www.adruk.org/news-publications/publications-reports/what-is-research-ready-data-a-roundtable-report/), as well as the related publication, ‘[What makes administrative data research-ready?](https://ijpds.org/article/view/1718)’ While these documents focus primarily on administrative data, they define characteristics of research readiness that are relevant to smart data sources. |

*What you can expect from the wider programme:*

The strategic hub will convene the data services to develop a data discovery approach that meets the needs of users and integrates with the wider landscape, including developing standards required for integrating your metadata into shared catalogues. Data service proposals should include resources to support data discovery within a budget line that is allocated flexibly over time as the programme develops.

**Activity 3:** Address challenges around the use of smart data for high quality research, for example representativeness, uncertainty, provenance, bias, privacy protection, or licencing issues.

*What you should explain in your proposal:*

Your proposal should reflect an understanding of the methodological and technical challenges in using the data in your scope for research, and you should provide adequate resources for tackling these. These challenges may require you to provide resources from a variety of disciplines. You should also consider what measures may be necessary to prevent the processing and/or aggregation of data being used for harmful or threatening purposes.

*What you can expect from the wider programme:*

The strategic hub will support the development of a community of practice across the data services through regular cross-programme events, which will enable discussion, knowledge sharing, collaboration, and showcasing.

**Activity 4:** Provide digital research infrastructure and information governance to protect sensitive data while making data available to the UK research community on equal terms.

Your digital research infrastructure should be scoped to include elements such as:

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| * access management and control
* data discovery
* data storage
* trusted research environments
* management and curation architecture
* privacy enhancing technologies
 | * software and analytical tools
* high performance computing
* processes and information governance
* user support, data access requests, and training in using the infrastructure
* logging and auditing of access/use
 |

Some activities included under activity 3 above also fit here.

*What you should explain in your proposal:*

Your proposal should explain your overall technical infrastructure and information management and governance approach, and provide a clear rationale for this. You should include high-level information about the policies, processes, accreditation and standards to which you will adhere to demonstrate security, trustworthiness and assure legal compliance.

Your work on infrastructure, discoverability and access will be expected to develop in tandem with programme-wide efforts to streamline and standardise, e.g., via common data catalogues, to be developed over the course of the programme (see objective 2). Resources should be allocated responsively over time as the programme develops.

We expect your funding to leverage existing infrastructural assets to ensure value for money. You should indicate how you will partner with other infrastructure providers to build on existing and emergent digital research infrastructure. Your proposal should also provide a rough indication of what funds will be allocated to filling infrastructural gaps and meeting technical needs unique to your service. Your proposal should provide information about how and where (in terms of provider and geographic location) you intend to host the storage and processing of data.

*Information management and governance*

Your proposal should indicate how you will establish robust and appropriate information management and governance frameworks that make data available to the research community at scale while safeguarding public trust. This should include appropriate measures to evidence provenance, curation, training, licencing and independent audit of security and access.

Teams are advised to build on existing good practice and frameworks, such as the Five Safes Framework: [What is the Five Safes framework? — UK Data Service](https://ukdataservice.ac.uk/help/secure-lab/what-is-the-five-safes-framework/) and [Standard Architecture for Trusted Research Environments](https://satre-specification.readthedocs.io/en/stable/specification.html).

**Activity 5:** Provide user support.

*What you should explain in your proposal:*

We encourage all applicants to give due consideration to the ‘service’ aspect of their proposals. You should articulate how a service ethos will be translated into delivery of your data service and why the requested resource is sufficient for assuring that the wider research community is engaged with and supported in using your data.

You should scope activities 4 and 5 to include processes and resources for assessing and meeting user needs to enable impactful research. We note that this will be specific to the challenges presented by your service’s data and the corresponding maturity of the research community regarding the methods, data, and tools provided.

*What you can expect from the wider programme:*

The hub will take a leadership and coordinating role working with the data services on the development and delivery of a single point of access, single data catalogue, and standard guidelines for metadata.

## **Objective 2: Collaborate to build a user-friendly federation of services and enable cross-domain research.**

*What you should explain in your proposal:*

Your proposal should allocate resources towards delivering the following activities in partnership with other SDR UK data services and the strategic hub:

**Activity 1:** Contribute to cross-programme efforts to streamline processes, products and services and make SDR UK data Findable, Accessible, Interoperable and Reusable (FAIR).

**Activity 2:** Collaborate with data services beyond SDR UK to standardise and streamline services. For example, through alignment with initiatives like [ESRC’s Future Data Services](https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/future-data-services/).

**Activity 3:** Support and implement steps to establish the next generation of digital research infrastructure in the UK to enable fast, safe and efficient sharing and linkage.

*What you can expect from the wider programme:*

The strategic hub will take a light-touch coordinating role working with the data services. We will work in an iterative way to encourage the creation of a user-friendly federation of services that enables cross-domain research. This could include:

* providing support on security, data licencing and legal standards
* leading and coordinating engagement with relevant programmes across UKRI
* commissioning resources that contribute towards the delivery of user-friendly federation of SDR UK data services

## **Objective 3: Ensure responsible use of data.**

We expect that activities to ensure responsible use of data will be integrated across the delivery of all programme activities. You should explain your approach to this objective in the ‘Ethics and responsible research and innovation’ section of the application, rather than the ‘Approach’ section.

Your response to objective 1: Acquire, steward and enable safe access to smart data for research, may be streamlined by cross-referencing to this section, and throughout your application you must set out how you will follow, achieve and demonstrate compliance with relevant UKRI policies, standards and guidance.

Expected activities include:

**Activity 1:** Protect sensitive data. **Activity 2:** Control and process data in an ethical and legal manner.

*What you should explain in your proposal:*

Your proposal should describe your approach to identifying and protecting sensitive data and assuring that all data is controlled and processed in a security-minded, ethical and legally compliant manner. You should consider all aspects of delivery, including:

* acquiring data and making it research ready
* maintaining the digital research infrastructure
* providing researcher access though an authenticated, auditable access control mechanism, and
* where applicable, mechanisms for implementing and maintaining federated access control

*What you can expect from the wider programme:*

The strategic hub has allocated funding to provide the data services with ethics and legal advice related to novel smart data-related legal and ethical challenges. We will commission this in FY 24/25. We anticipate that this resource will help with activities such as:

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| * assessing data licensing issues
* interpreting guidance from the ICO and other bodies
* exploring emerging ethical questions
* developing templates
 | * bringing together representatives from the data services to share best practice, resources, and lessons learned
* working towards harmonised approaches
* assurance and auditing of security measures
 |

Such activities will not replace the legal and ethical requirements and advice of your institution. The hub will maintain an awareness of the diversity of data included in the programme and will take a pragmatic approach towards harmonisation.

**Activity 3:** Seek and take account of public views to maintain public trust, working in partnership with others in SDR UK and the wider landscape.

We expect data services to undertake public engagement and involvement activities to inform their work or respond to public views on specific activities, while also supporting and facilitating the work of the strategic hub.

*What you should explain in your proposal:*

Your proposal should explain how you will account for public views on research use of the data enabled by your service.

*What you can expect from the wider programme:*

The hub will deliver a programme of public involvement and engagement, working closely with wider initiatives including [PEDRI](https://www.pedri.org.uk/). Your data service will have the opportunity to participate in this work, co-developing and co-delivering activities, and learning from findings and recommendations.

## **Objective 4: Build capability across the research community.**

We expect data services to build smart data research capability through activities including:

**Activity 1:** Build an inclusive community of practice around smart data that extends beyond your core partners.

**Activity 2:** Work in collaboration with other SDR UK data services and investments to support the development of research skills through training and capacity-building.

**Activity 3:** Undertake activities to grow the research user base for the data.

**Activity 4:** Provide training in working with your service’s data and tools.

Applicants are required to set out the training, relationship building and network activities to be delivered by the data service. In setting out these activities, applicants should consider how their work will connect to and compliment other training and capacity-building initiatives.

*What you can expect from the wider programme:*

We recognise that building a supply of foundational and advanced data skills is a significant challenge going beyond the scope and resources of the SDR UK programme. The strategic hub will coordinate with other UKRI programmes and research funders with the aim of leveraging wider resources towards building smart data capability.

## **Objective 5: Be a centre of excellence for smart data research, enabling impact through ground-breaking research.**

Your data service should be a centre of excellence for the data and thematic priorities in your scope.

Requirements related to this objective:

* we expect applicants to dedicate a maximum of 20% of their total budget to delivery of this objective, and to seek to build on this through other means including further grant funding opportunities and institutional research budgets.

Your data service will undertake activities such as:

**Activity 1:** Conduct ground-breaking impact-focused research that demonstrates the value of smart data to support changes in practice, thinking or capacity and that creates a positive impact in our society, economy or environment.

**Activity 2:** Develop collaborations, partnerships, and seeking support through other funding opportunities to widen the impact of your service.

**Activity 3:** Provide thought leadership arising from your team’s hands-on experience in working with the data.

**Activity 4:** Bring researchers, policymakers, and industry together to champion the use of smart data to inform policy and address societal challenges.

**Activity 5:** Track, champion, and communicate the impact of your data service and play an active role in the broader communication activities to promote the value of smart data to a wide audience.

*What you should explain in your proposal:*

Your proposal should set out your agenda as a centre of excellence. We encourage you to consider the staff, networks, and resources you will bring to bear in meeting this objective, and how you will include and drive engagement with stakeholders beyond your core partnership. This may include other UKRI programmes, third sector and government stakeholders, and international partners.

Your proposal should set out the resources allocated towards tracking, championing and communicating the work and impact of your data service. This should include resources required to track and identify the impacts from objective 1: acquiring, stewarding, and enabling safe access to smart data for research.

*What you can expect from the wider programme:*

The strategic hub will leverage its position and resources to support your engagement with other programmes. We will develop partnerships with other research funders, government, and industry to extend our impact.

The hub will also engage with government departments both directly and through ESRC’s policy-facing activities to strengthen connections between data services, the producers of smart data research, and policymakers.

The SDR UK strategic hub will have a communication team responsible for co-ordinating and leading communications for Smart Data Research and its data services. The strategic hub communications team will:

* provide a unified voice for smart data research in the UK
* share news, content, and announcements with the data services and the public
* provide guidance, support, resources, and collaborative opportunities to amplify the impact of data service communications

# The strategic hub

The SDR UK strategic hub, based at ESRC, will provide leadership and coordination of the programme. This will include oversight to ensure effective governance for data services and other activities, as well as delivery of cross-cutting activities designed to augment and amplify the efforts of the data services. These activities will develop as the programme matures, including:

* **Coordination of data services**
	+ Convene data services to build a user-friendly federation of services and enable cross-domain research.
	+ Define a programme-wide approach to data acquisition strategies, standards, processes, research management, and the end user experience.
	+ Facilitate a continuous exchange of knowledge and insight between the data services.
* **Outreach and partnerships**
	+ Build relationships with strategic data suppliers, to demonstrate that Smart Data Research UK is the partner of choice for providing safe access to data for research.
	+ Work with government and other users of research insight to strengthen connections between data services, researchers, policymakers and practitioners.
* **Communication**
	+ Deliver an SDR UK communications function that will promotethe value of smart data research to a wider audience, inspiring recognition, support and trust.
* **Public engagement**
	+ Lead an ongoing dialogue with the public, to inform the ethical principles and procedures of SDR UK and provide assurance to the public.
* **Security, ethics and legal guidance**
	+ Provide strategic advice and guidance on ethical and legal matters by scoping and commissioning appropriate expertise, advice, and services.
	+ Provide a unified voice for the smart data research community, feeding into relevant policy and legislative development.
* **Investing in capability and uptake**
	+ Run funding calls to support impact-focussed research, or the development of innovative tools and methods.
	+ Address gaps within the landscape, or strategic opportunities as they arise.
	+ Coordinate with other UKRI programmes and research funders to leverage resources towards smart data capability.
* **Management and reporting**
	+ Programme management, investment monitoring and reporting.
	+ Evaluation.
	+ Governance.