

GEOGRAPHIC DATA SERVICE

USER GUIDE

Version: 1.0

Introduction

The Geographic Data Service (GeoDS or Service) is an academic led, multi-institution collaboration to facilitate high quality social science by maximising the value of diverse and nationally significant Smart Data through geographic integration, enrichment and validation. GeoDS will enable access to Smart Data for public benefit, whilst protecting privacy. GeoDS's key areas of interest include:

- **Dynamics of Populations at Risk:** Generating Smart Data insights into the shifting needs and challenges of vulnerable populations, enabling targeted strategies to protect and empower these groups amidst changing economic and environmental conditions.
- **Regional Disparities:** Integrating Smart Data with other sources to capture economic and social imbalances between and within regions and guiding policies that aspire to prosperity for all.
- **Equality of Opportunity:** Exploiting Smart Data to identify gaps in access to employment and resources, ensuring that interventions are aimed at fostering equitable opportunities for all individuals, regardless of their background. We support the acquisition and analysis of data in these areas and beyond the social sciences to support for the SDRUK Pillar, 'Productivity and Prosperity for All' and achieve benefits for the 'public good'.

The purpose of this guide is to describe our data services and how researchers can access them. It identifies the different types of data held and the service tiers through which these data sets are available. For data that are not publicly available, the guide details how researchers can register or apply for access and the kinds of support that is available to them.

Geographic Data Service

The GeoDS provides data with four different levels of access. These correspond to the data levels described in the UK Data Service's three tier access policy:

- **Open data:** data which are freely available to all for any purpose. Data includes open datasets where GeoDS have added value and non-sensitive and aggregated data and derivative products produced by the GeoDS. Examples might include geodemographic data derived from the Census. Open data are accessed through the GeoDS service via basic registration and download.
- **Safeguarded data:** data to which access is restricted due to licence conditions, but where data are not considered 'personally-identifiable' or otherwise sensitive – an example might include data from retail companies on store turnover. Access to safeguarded GeoDS data is via a remote service that requires users to submit a project proposal. This proposal must receive approval from the Centre's Research Approvals Group (RAG) (see below) before access to the data will be authorised. Users are able to retrieve data after authentication and authorisation by the service.

- *Safeguarded fast-tracked data*: data to which access is restricted due for audit purposes, but where data are not considered 'personally-identifiable' or otherwise sensitive – an example might include UK-OAC. Access to safeguarded fast-tracked GeoDS data is via a remote service that requires users to submit a short initial project proposal which is reviewed by GeoDS staff.
- *Secure data*: data which need to be held under the most secure conditions with more stringent access restrictions, including data which are 'personally-identifiable' and therefore subject to Data Protection legislation or are considered commercially sensitive. Examples might include data on individual consumer purchases. Access to GeoDS secure data is provided through the GeoDS-secure service. This service requires that individuals gain project approval through the RAG and access the data via our Trusted Research Environment.

Finding Data

All data available through the GeoDS are accompanied by metadata that enable both attributes and geography to be searched.

Research Approvals Process

Access to both safeguarded and secure data requires a process by which individuals submit project proposals for assessment and approval. The approval process is overseen by an independent Research Approvals Group (RAG) which comprises representation from the Data Partner(s) and the social science academic community. The GeoDS Senior Management Team provides comment on resource implications of a proposal. The composition ensures that the RAG has expertise in research design, analysis and impact, while also considering any commercial sensitivities a project may have. The RAG review process is overseen by the Chair of RAG.

For full details of the Research Approvals Process please see the Research Approvals Guidelines at <https://service.geods.ac.uk/>.

Criteria for Approval

These criteria align with GeoDS objectives and cover the following:

- **Scientific advancement** – how the project has the potential to advance scientific knowledge, understanding and/or methods using Smart data;
- **Public good** – how the project has the potential to provide insight and/or solutions that could benefit society;
- **Privacy and ethics** – the potential privacy impacts or risks, and wider ethical considerations relating to the project
- **Project Design and Methods** – how the project will be conducted and who will be involved with a focus on demonstrating project feasibility.
- **Cost and resources issues** – what impact the project is likely to have on GeoDS resources, including GeoDS staff time and use of infrastructure, as well as any data acquisition costs. Resource requirements should be justified.



The RAG typically considers applications remotely and is designed to be lightweight but robust, enabling timely decisions on user applications.

Approval will not be granted without evidence that the user has acquired ethical approval for the research through their institution, or supplied evidence that it is not applicable. For non-academic projects, where there is no approval process in place the GeoDS will advise the user on ways to undertake an ethical assessment.

Safe Researcher Training and Training and Development

Safe Researcher Training

Users, both academic and non-academic stakeholders, wishing to access secure data and on occasion safeguarded data are required to have completed a safe researcher course, as offered by the Administrative Data Research Network (ADRN), HM Revenue and Customs (HMRC), Office for National Statistics (ONS) or the UK Data Service (UKDS). Evidence of valid accreditation for the duration of access to the data will be required. If the user has not previously completed such training the GeoDS will offer access to training courses.

Training and Development

In addition to providing data services, the GeoDS has a range of training courses and materials available. Many of these will be of benefit to those who wish to use our facilities, as they are aimed at enhancing capacity in data analytics and data visualisation methods. Full details of the training available can be found at <https://geods.ac.uk/education-training/>.

Charges for GeoDS Services

While a service will be provided to the academic community and stakeholders free of charge, researchers may need to apply for funding to cover the costs of additional data acquisitions, or be charged for access to certain, licensed software.

GeoDS Services Overview and User Journey

Visit data.geods.ac.uk and review data catalogue



Data identified

Open	Safeguarded Fast-tracked	Safeguarded	Secure
Register on data.geods.ac.uk	Register on data.geods.ac.uk and complete initial application	Register on data.geods.ac.uk and complete initial application	Register on data.geods.ac.uk and complete initial application
Download	Application approved	Proposal development and ethics approval	Proposal development and ethics approval
Perform research	Data available for secure download	Proposal assessment and approval	Proposal assessment and approval
Attribute GeoDS	Perform analysis	Safeguarded Research Training (where required)	Safe Researcher Training and TRE Information Governance Training compulsory
	Attribute GeoDS	Parties sign up to GeoDS User Agreement	Parties sign up to GeoDS User Agreement
		Data available for secure download	Access to Trusted Research Environment (TRE) arranged
		Perform analysis and delete data at project end date	Perform analysis within the TRE
		Send outputs to GeoDS for publication check	GeoDS review analysis and confirm inline with project approval
		Publish approved outputs. Attribute GeoDS	Analysis released to researcher and access to TRE revoked
		Inform GeoDS of published material and confirm data deleted	Send outputs to GeoDS for publication check
			Publish approved outputs. Attribute GeoDS
			Inform GeoDS of published material and confirm data deleted

GeoDS Website: A Single Point of Entry into the Geographic Data Services

The GeoDS website, <https://geods.ac.uk>, is designed to provide a single point of entry into our services and these are clearly linked from the homepage.

GeoDS Data

Our data portal, <https://data.geods.ac.uk/>, provides a complete listing of data available through the four tiers of the service and enables the dissemination of open data and application for access to safeguarded and secure data.

Accessing data from GeoDS Data (data.geods.ac.uk)

Open Service

Access to the Open Service requires:

1) Registration

Users will be required to provide contact details including a valid email address prior to download. This is to enable the GeoDS to monitor the use of the resource. Data will then be available to the user to download for unrestricted use.

Safeguarded Service

Access to the Safeguarded Service requires that users to obtain formal approval.

1) Initial Proposal

An approach is made to the GeoDS by the user through completion of an online form, linked from the data pages. This initial proposal is processed and assessed by the Senior Management Team to see if it fits within the remit of the Service. If not, the proposal may be referred to another Service in the Smart Data Research UK network. Proposals that do not fit into either of these categories will be turned down at this stage. Decisions for safeguarded fast-tracked data are made at this stage.

2) Proposal Development

If the initial proposal fits within the Centre's remit, the user is supplied with the 'Safeguarded Data Project Proposal Form', and assigned to a GeoDS data scientist who can advise on the technical aspects of the formal application. The aim is to co-produce an acceptable project proposal.

Proposals will comprise:

- a) Research motivation and purpose
- b) Research impact
- c) Planned outputs
- d) Research team
- e) Data requested
- f) Data linkage
- g) Duration of access

h) Ethical approval from user's institution¹

3) RAG Assessment and Approval

Once an application has been completed it is considered by the RAG against agreed criteria that are published on our website, https://service.geods.ac.uk/research_approvals_guide.pdf. The number of rejected approvals will be minimised through initial interaction with the data scientists. Where approval is withheld, applications are referred back to the user for revision, and clear guidance will be given regarding those areas requiring clarity. If such amendments are agreeable by RAG, approval will be given. If minor, the user may be asked to make further revisions, however, if issues are still considered to be major the RAG may decide to make a final decision to reject the proposal. Following approval, the user and their institution are required to agree to the GeoDS User Agreement, including stipulations made by the Data Partner(s) and RAG.

4) Data Access

Access to a secure download of the agreed data is made available. A password to unlock the encrypted download files is sent separately. Once the user has downloaded the encrypted file, they are solely responsible for the data and its analysis.

5) Outputs

Users can use results of their analyses in publications, reports and presentations provided they abide by the terms and conditions with particular reference to the data partner publication terms. There is no screening of outputs by GeoDS staff.

6) Completion, Reporting and Acknowledgement

Users are required to deposit copies of working papers, peer-reviewed journal articles, logs of impact and other publications for access with the GeoDS wherever copyright permits. Where this is not possible, full references to research outputs are required for GeoDS audit purposes. Please email publications@geods.ac.uk when publications are ready for deposit or logging. The commitment to produce specified outputs is normally a condition of the data approval process. The terms of service require that published outputs include an acknowledgement stating: "The data for this research have been provided by the Geographic Data Service, a Smart Data Research UK Investment, under project ID GeoDS xxx, ES/Z504464/1". The acknowledgement will make further reference to the use of specific datasets according to the wishes and needs of individual data partners. After the project end date is reached, the GeoDS will contact the user to confirm the destruction of the data and to document any outputs to date. The GeoDS will contact users normally at 6 and 12 months after the project end date to request a log of any further publications or impact logs.

7) Undergraduate and Postgraduate Student Applications

¹ If the user's institution does not have a system for data protection and ethics approval then the GeoDS will advise the user on ways to undertake an ethical assessment.

Undergraduate, Masters Students and Doctoral Research Students requesting access to data will be required to submit a proposal in the normal way including their academic supervisor as a named applicant.

Secure Service

Access to GeoDS secure data is via our Trusted Research Environment.

Use of the GeoDS-Secure service requires registration and project approval, with an additional step of requirements stipulated for access to our Trusted Research Environment. The user will be informed of these once the project has been approved.

Accessing data from the GeoDS secure tier

Access to this service requires that users obtain formal approval.

1) Initial Proposal

An approach is made to the GeoDS by the user through completion of an online form. This initial proposal is processed and assessed by the Senior Management Team to see if it fits within the remit of the Centre. If not, the proposal may be referred to another SDR-UK Service. Proposals that do not fit into either of these categories will be turned down at this stage.

2) Proposal Development

If the initial proposal fits within GeoDS's remit, the user is supplied with the 'Secure Data Project Proposal Form', and assigned to a GeoDS data scientist who can advise on the technical aspects of the formal application. Proposals will comprise:

- a) Research motivation and purpose
- b) Research impact
- c) Planned outputs
- d) Research team
- e) Data requested
- f) Data linkage
- g) Access requirements
- h) Ethical approval from user's institution²

3) RAG Assessment and Approval

Once an application has been co-produced it is considered by the RAG against agreed criteria that are published on our website <https://service.geods.ac.uk/>. Where approval is withheld, applications are referred back to the user for revision, and clear guidance will be given regarding those areas requiring clarity. If such amendments are agreeable by RAG, approval will be given. If minor the user may be asked to make further revisions, however if issues are still considered to be major the RAG

² If the user's institution does not have a system for data protection and ethics approval then the GeoDS will advise the user on ways to undertake an ethical assessment.

may decide to make a final decision to reject the proposal. Following approval, the user and their institution are required to agree to the GeoDS User Agreement, including stipulations made by the Data Partner(s) and RAG.

4) Data Access

Following approval, the Centre Manager arranges TRE access for the registered user.

5) Data Analysis

The user works on the data only within the secure environment. If users wish to combine secure data with other less sensitive data (open or safeguarded), then it will be necessary to have obtained consent for this from RAG as part of the project proposal. This supporting data will then be made available to the user in the secure facility. The same applies to software required for analysis. GeoDS staff provide can only supply limited support because we do not administer the secure environment beyond configuring user access and supplying the data to it.

6) Outputs

All outputs that the user wants to take out of the secure environment must be vetted and cleared by the GeoDS before they can be released. Source data do not leave the secure facility. Users can take results of their analyses for use in publications, reports and presentations provided they abide by the terms of the User Agreement and with particular reference to the data partner publication terms.

After completion of analysis the user informs the data scientist that the analysis is complete and that their files are now ready for vetting. For full details of the output process please see the GeoDS 'Secure Lab Data Import/Export Procedures'.

- a) Outputs will be checked by two GeoDS data scientists to ensure that they conform to GeoDS control criteria.
 - i. Outputs requested should be 'finished outputs' i.e. the finished statistical analyses that you intend to present to the public, must be easy to read and interpret and how they are to be used explained and must be non-disclosive.
 - ii. The GeoDS team will ensure that the outputs are the same specification as those agreed in the approved project proposal.
 - iii. The user is informed of the outputs vetting outcome within 5 working days and if successful with details about how the data extracts or analysis will be returned to them.
 - iv. Extracts that match approval are transferred by the GeoDS team to a secure server from where outputs can be downloaded under the same arrangements as safeguarded data.
 - v. Where extracts are deemed not to match the required criteria, the user is informed.
 - i. Where there are issues with a part of the output, if feasible the user will be allowed to revisit the secure facility to rectify the problem.
 - ii. Major transgressions may be permanently deleted and the remaining output is returned to the GeoDS approver pool.
 - vi. Once the user has completed all their analysis or their agreed lab access time has been reached access to the secure facility is immediately revoked.

7) Completion, Reporting and Acknowledgement

Users are required to deposit copies of working papers, peer-reviewed journal articles, logs of impact and other publications for access with the GeoDS site wherever copyright permits. Where this is not possible, full references to research outputs are required for GeoDS audit purposes. Please email publications@geods.ac.uk when publications are ready for deposit or logging. The commitment to produce specified outputs is normally a condition of the data approval process. The terms of service require that published outputs include an acknowledgement stating “The data for this research have been provided by the Geographic Data Service, a Smart Data Research UK Investment, under project ID GeoDS xxx, ES/Z504464/1”. The acknowledgement will make further reference to the use of specific datasets according to the wishes and needs of individual data partners. After the project end date is reached, the GeoDS will contact the user to confirm the destruction of the data and to document any outputs to date. The GeoDS will contact users normally at 6 and 12 months after the project end date to request a log of any further publications or impact logs.

8) Undergraduate and Postgraduate Student Applications

Undergraduate, Masters, and Doctoral Students requesting access to data will be required to submit a proposal in the normal way including their academic supervisor as a named applicant.

9) Request for data not currently available through GeoDS

It is possible to request access to data variables or datasets not currently available through the GeoDS. To submit a request please send us an email to info@geods.ac.uk and we will contact you to discuss further.