

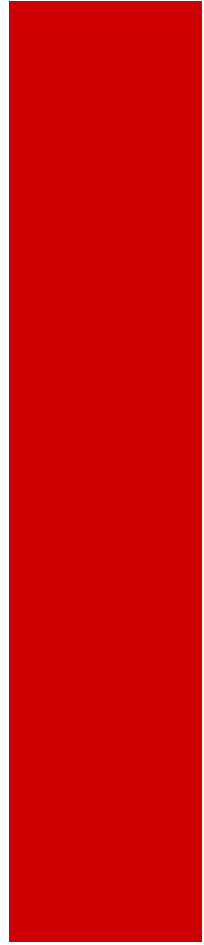
# FIVE-YEAR PLAN

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**October 2021 - October 2026**

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Version 1.1	Revised draft	JDR/TE	16 Sept 2021	Circulation to all ADS staff
Version 1.2	Revisions	All ADS staff	21 Sept 2021	Feedback from staff at Executive meeting
Version 1.3	Final version	Stakeholders	October 2021	Approved by ADS Management Committee

## Introduction

In 2021 the Archaeology Data Service (ADS) and its e-journal, *Internet Archaeology*, are each 25 years old. The last five-year plan covered the period 2016-21, and whilst our strategic aims remain unchanged there have been significant changes in our external operating environment, making it timely to review and update our five-year plan. This document presents a shared Vision Statement for the ADS and *Internet Archaeology* and outlines the Strategic Plan for the five-year period 2021-26. Its purpose is to define the aims for future development, ensure that our Vision Statement is realised, and that both the ADS and *Internet Archaeology* are adaptive and responsive to changes in internal and external environments. In addition to the overarching aims, specific objectives are presented which will be reviewed and updated annually at meetings of the ADS and *Internet Archaeology* Management Committee to assess progress against the aims.

## Operational Remit

The ADS was the first accredited digital repository for heritage data in the UK, with 25 years of experience supporting research, learning and teaching with free, high quality and dependable digital resources. It does this by preserving digital data in the long term, and by promoting and disseminating a broad range of archaeological and historic environment data including both terrestrial and marine resources. The ADS promotes good practice in the use of digital data, provides technical advice to the research community, and supports the deployment of digital technologies. The ADS publishes *Internet Archaeology*, an independent, not-for-profit, Open Access peer-reviewed e-journal for archaeology, the first of its kind. *Internet Archaeology* aims to publish articles of a high academic standing while exploring the additional potential of electronic publication.

## Achievements

Over the past 25 years the ADS and *Internet Archaeology* have accomplished substantial achievements. The ADS now provides access to over 1.4 million metadata records for the archaeology of the British Isles and over 2000 data rich digital archives for archaeological projects. The ADS Library catalogue contains c.350,000 bibliographic entries and provides access to over 60,000 unpublished fieldwork reports (the so-called grey literature), and another 45,000 journal articles. *Internet Archaeology* has published 58 issues, comprising 646 peer-reviewed Open access papers, many supported by ADS archives. All archives, reports and journal papers are allocated a permanent means of citation via a Digital Object Identifier, in collaboration with the British Library and Datacite. The ADS is the mandated place of deposit for historic environment research data for a number of research funders and heritage bodies. ADS holds the CoreTrustSeal, as the only accredited digital repository for heritage data in the UK. Over the past 25 years the ADS and *Internet Archaeology* have built up an extensive network of European and North American collaborators to work together with in support of combined interest and objectives.

## External Environment

Over the last five years the archaeological field profession has taken major steps to regulate the provision of digital data archives resulting for development control archaeology. Notably, in 2019 the Chartered Institute for Archaeologists published its Dig Digital guidelines, recommending the creation of Data Management Plans for archaeological projects, and requiring digital archives to be deposited with a Trusted Digital Repository, accredited by the CoreTrustSeal. The ADS has been mandated as the digital archive for several major transport infrastructure projects, including Crossrail, High Speed 2, and the Highways Agency funded A1 and A14 road improvement projects. With the accompanying increase in on-site digital recording, and new approaches to publication, these projects may become exemplars for the profession. At the same time,

however, underfunding of local government curators is creating a challenging environment in which building development may take place without adequate archaeological provision or follow-up. Currently ADS still only receives a small proportion of the digital data created during development control work. Nonetheless, it is well placed to take advantage of fast changing attitudes. There are also opportunities for *Internet Archaeology* to advocate new approaches to publication, and to provide a joined-up dissemination strategy.

During the last 5 years there has also been significant investment in the redevelopment of OASIS, the online fieldwork event reporting system, developed and maintained by ADS on behalf of the UK historic environment sector, now in its fifth generation and being rolled out as OASIS V. OASIS provides increased opportunities for ADS to work more closely with the museum and archives sector, and also to utilise National Lottery heritage funding to increase its profile amongst community archaeology groups.

In the academic sector, archaeology has continued to face a challenging environment for student recruitment, with the arts and humanities under threat, and the closure of several leading departments. On the other hand, there is increased awareness of the need for research to be underpinned by secure and open data, and appreciation of the value of the FAIR principles. The emphasis placed on the wider public impact of research often leads to digital solutions to allow open access to research data and results, supported by ADS and *Internet Archaeology*.

In line with government policy and its business strategy UKRI is putting increasing emphasis on the need for investment in research infrastructure, and this has been taken up by AHRC with revived enthusiasm for arts and humanities data centres and the need to mandate deposit of data derived from publicly funded research. Whilst still early days, the next five years may provide opportunities for ADS to regain a core role as a leader within the arts and humanities digital landscape, working with universities and Independent Research

Organisations (IROs). The Towards a National Collection initiative allows ADS to play an important part as underpinning infrastructure, whilst recent work on the challenges of archiving heritage science data within ARIADNE, E-RIHS, RIHS-UK and SSHOC, would also allow ADS to play a digital supporting role in future heritage science infrastructure.

The ADS needs to continue to work in partnership with national archives in the constituent parts of the UK to ensure that digital preservation remains high on the agenda and to avoid duplication of effort. However, with its national remit the ADS is also uniquely placed to represent the UK at an international level, where there are opportunities in Horizon Europe for funding and research collaboration.

## Internal Challenges

Whilst the external environment is likely to provide a number of opportunities over the next 5 years, the ADS also faces a number of internal challenges. Reliance on project funding and lack of core grant over the last five years has led to a lack of investment in our back-end infrastructure. Emphasis has rightly been placed on data and systems security but there has been little new interface development and ADS is currently running a number of parallel search architectures, many of which depend upon aging technologies. Additional essential processes have had to be bolted onto existing systems with the result of inefficient working and duplication of effort. *Internet Archaeology* has recently undergone a facelift but internal processes for data management and delivery of specialist interfaces need to be better aligned with those of ADS. An internal technical review highlighted that the ADS was maintaining systems without adequate developer support and technical leadership, and that there was a need to adopt a more Agile approach to software engineering. Progress has already been made against the review recommendations, and staff have identified a list of initiatives but further advances are dependent upon additional resources becoming available.

As universities come under increasing financial pressures there is also a need to maintain a watching brief on our local operating environment and to ensure that a university department remains the most sympathetic home for a national digital data repository.

## Vision Statement

Over the next five years ADS and *Internet Archaeology* aim to further enhance their position within the UK historic environment community, capitalise on their standing within the international archaeological and digital heritage communities, and leverage their reputations in different spheres to be the first port of call for Open Access data and publication in Archaeology.

The ADS will also further enhance its standing within the international digital preservation community by assuring its work is aligned to appropriate accreditation and data management standards, by proactively engaging with the preservation community, and advocating its work on guidelines and standards to a wider community to ensure the ADS remains at the forefront of data management and digital preservation.



## AIMS

The following aims assert the organisational aspirations of the ADS and *Internet Archaeology* over the next five years and reflect the 10 areas of activity that provide the core functions for both services.

- (1) To be the UK lead **preservation** service for primary data and digital resources created in the course of research in archaeology and related disciplines, following relevant standards for trusted digital repositories.
- (2) To host the most important UK-level **collection** of high quality digital datasets created in the course of research in archaeology and related disciplines, and to work in partnership with other UK historic environment archives.
- (3) To provide open and easy online **access** to primary data and digital resources created in the course of research in archaeology and related disciplines; primarily via downloadable datasets which allow data to be accessed and reused and, where appropriate, through the development of specialised interfaces which allow users to interrogate key datasets online.
- (4) To develop and encourage the adoption of new models of **electronic publication**, providing a holistic service, covering publication and digital archiving.
- (5) To be the primary UK-level historic environment data **aggregator** and to provide appropriate **finding aids and resource discovery** mechanisms to allow users to discover primary data and digital resources created in the course of research in archaeology and related disciplines.
- (6) To be the primary point of **advice on Research Data Management** for researchers, funding bodies and archives in the UK for the archaeology and heritage sectors.
- (7) To work with others to **develop and implement agreed standards** to ensure appropriate documentation and preservation of digital

resources created in the course of research in archaeology and related disciplines.

- (8) To provide encouragement and support for the **re-use** of primary data and digital resources created in the course of research in archaeology and related disciplines.
- (9) To take a lead international role in **research and development** into preservation, access and interoperability of historic environment data, with a view to enhancing all the above services.
- (10) To maintain **effective service management and administration** in pursuit of all the above aims, and to maintain financial sustainability.

These ten aims reflect the areas of activity which provide core functions for the ADS and *Internet Archaeology*, and can be cross-referenced to annual work plans and reports. Underpinning all ten aims is the need to provide overall financial sustainability, and to demonstrate the interplay of different sources of funding and how the support of funding in one area may provide added value for another funding body.

The plan below breaks down each of these overarching aims into more specific aims and defines the key objectives required to achieve them.

# 1 Preservation Services

To be the UK lead **preservation** service for primary data and digital resources created in the course of research in archaeology and related disciplines, following relevant standards for trusted digital repositories.

## Aims

- To be a leader within the international digital preservation community, and proactively engage with the digital preservation community.
- To be the lead digital preservation service at a UK-level and to work in partnership with other UK digital historic environment archives to provide a comprehensive digital preservation service across the UK.
- To provide expert professional digital preservation services based on the OAIS reference model and maintain the accreditation of the ADS as a trusted digital repository.
- To ensure every information object archived by the ADS has complete Preservation Description Information.
- To identify opportunities in ADS internal preservation operations to improve efficiency and reduce resource requirement.

## Objectives

- 1.1. Enhance the ADS Collections Management System by identifying changes to increase efficiency and automation within the preservation workflow.
- 1.2. Develop the Object Management System to facilitate advanced preservation planning, including risk management and object migration.
- 1.3. Maintain secure offline and remote back-up and data storage facilities.
- 1.4. Maintain a preservation watch on relevant software/hardware changes.

- 1.5. Manage collections according to agreed standards and procedures and keep the ADS policies and procedures for preservation up-to-date.
- 1.6. Maintain the ADS virtual server cluster to ensure a robust and reliable service.
- 1.7. Preserve Internet Archaeology content through the development of efficient accessioning and preservation workflows.
- 1.8. Maintain accreditation of the ADS as a trusted digital repository, according to recognised international benchmarks for digital archives.
- 1.9. Make maximum usage of robust automated procedures throughout all preservation services to ensure procedures are undertaken efficiently and consistently.
- 1.10. To fully implement PREMIS Level 3B Conformance within ADS preservation management.

## 2 Collections Development

To host the most important UK-level **collection** of high-quality digital data sets created in the course of research in archaeology and related disciplines and to work in partnership with other UK historic environment archives.

### Aims

- To be the first port of call for data deposit and preservation for the UK historic environment sector.
- To identify and capitalize on new funding opportunities for data deposit and markets for collection development.
- To work in close partnership with other UK historic environment archives and develop opportunities for collaboration.

### Objectives

- 2.1. Upgrade ADS-Easy to ensure ease of use and embed it within the standard information flow and archive deposit process for all projects under 1Tb.
- 2.2. Work with Historic England (HE) to ensure the long-term preservation of digital outputs of its funded programmes to agreed timescales and budgets.
- 2.3. Work with UKRI research councils, particularly the Arts and Humanities Research Council (AHRC), the Natural Environment Research Council (NERC) and Engineering and Physical Sciences Research Council (EPSRC) to archive digital outputs of funded research projects.
- 2.4. Increase the Library of Unpublished Fieldwork Reports to over 100,000 reports in the next five years
- 2.5. Increase the ADS archival holdings to over 3000 collections in the next five years.

- 2.6. Contribute at least £1,000,000 of external income from commercial contracts in deposit charges over the next five years.
- 2.7. Work with the Historic Environment Record and Museums sector, to provide regional digital archiving services.
- 2.8. Collaborate with HighSpeed 2 to ensure effective digital archiving of their archaeological investigations.
- 2.9. Work with large transport infrastructure projects A1 and A14 to ensure the deposition of digital data deposit from the associated archaeological fieldwork.
- 2.10. Explore mechanisms for increasing the archiving of digital outputs from community-based archaeology, via OASIS and in liaison with the National Lottery Heritage Fund.
- 2.11. Encourage *Internet Archaeology* authors to deposit their datasets with the ADS.

## 3 Open and easy online access

To provide open and easy online **access** to primary data and digital resources created in the course of research in archaeology and related disciplines, either as downloadable datasets or through online interfaces which allow users to interrogate key data sets online.

### Aims

- To be the first port of call for Open Access data and publication in archaeology.
- To enhance existing user systems and ensure that resources continue to be available for use and meet modern Accessibility requirements
- To provide an excellent user experience for ADS and *Internet Archaeology* online resources.
- To develop our interfaces to highlight Collections and present them to all parts of the ADS designated community
- To develop the role of the ADS as an aggregator and broker for historic environment information resources.

### Objectives

- 3.1 Work with external UX/UI design consultants to make improvements to the ADS website, incorporating mobile first design and modern Accessibility requirements
- 3.2 Upgrade ArchSearch, investigating the implementation of the ARIADNE portal interface as a UK portal
- 3.3 Make improvements to the ADS Library interface including, where possible more consistent categorisation of authors, spatial searching, and additional use of metadata from OASIS.

- 3.4 Ensure, as far as possible, that ADS and *Internet Archaeology* websites confirm to Accessibility standards, and are available for mobile devices
- 3.5 Prioritise development of flexible architectures to allow more agile reaction to developments in web technologies for the ADS and *Internet Archaeology*.
- 3.6 Improve the ADS data discovery at the object (rather than just collection) level to encourage data re-use.
- 3.7 Ensure *Internet Archaeology* content is easily accessible with seamless links to primary data.
- 3.8 Develop capacity to better monitor ADS data re-use and *Internet Archaeology* usage and citation.



## 4 Electronic publication

To develop and encourage take up of new models of **electronic publication**, providing a holistic service, covering publication and archiving.

### Aims

- To maintain *Internet Archaeology* as a premier e-journal for archaeology.
- To ensure the integration of *Internet Archaeology* as the publishing arm of ADS.
- To identify new funding opportunities and markets, including capitalizing on the growing trend of data publication.

### Objectives

- 4.1 Ensure a continued flow of high-quality content and a rigorous and transparent peer review process.
- 4.2 Ensure an appropriate balance of UK and overseas content to reflect the status of *Internet Archaeology* as an international journal.
- 4.3 Provide creative and interactive interfaces to text and data.
- 4.4 Increase the use of *Internet Archaeology* within the field archaeology sector.
- 4.5 Ensure that *Internet Archaeology* is regarded as a high impact publication.

## 5 Resource discovery

To be the primary UK-level historic environment data **aggregator** and provide appropriate **finding aids and resource discovery** mechanisms to allow users to discover primary data and digital resources created in the course of research in archaeology and related disciplines.

### Aims

- To be the primary UK-level aggregator for historic environment data, delivering UK data to international aggregators, and promoting their use.
- To work in partnership with other national bodies within the UK to avoid duplication of effort and complement national and regional portals. To ensure resources are discoverable through a number of routes by working with partners, but with no duplication of data supply.
- To redevelop and enhance the existing methods of providing access to ADS metadata.
- To lead on the use of Linked Open Data vocabularies for the description of Archive and Object level metadata to ensure consistency and intuitive discovery and highest standards of interoperability with UK and International partners.

### Objectives

- 5.1 Ensure effective rollout of OASIS V throughout England and Scotland, and extend usage within other parts of the UK, so that it acts effectively as the core online data collection tool for a range of archaeological events and their associated datasets, providing data for consumption by national bodies, HERs, Museums, Archives, and the ADS.

- 5.2 Upgrade ArchSearch to regain its role as the primary UK-wide record level portal for the historic environment sector.
- 5.3 Provide historic environment data to UK portals, including the Marine Environment Data and Information Network (MEDIN) portal.
- 5.4 Provide resource discovery for UK historic environment data to European aggregators, including Europeana and ARIADNE.
- 5.5 Collaborate with Historic England and other Heritage Information Access Strategy (HIAS) partners to support the Heritage Gateway.
- 5.6 Develop a new generation of web services (including OGC) to provide access to metadata for ADS archives and unpublished reports.
- 5.7 Investigate the implementation of Linked Open Data and an RDF triplestore allowing external query of ADS holdings.
- 5.8 Develop and maintain the ADS Library so that it provides easy access to on-line journal back-runs, whether hosted by ADS or elsewhere.

## 6 Advice to researchers, funding bodies and archives

To be the primary point of **advice on Research Data Management** for researchers, funding bodies and archives in the UK for the archaeology and heritage sectors.

### Aims

- To provide expert and up to date advice on good practice in Research Data Management (RDM) in the archaeology and heritage sector.
- To provide professional assistance to data creators and depositors.
- To provide expert user support.

### Objectives

- 6.1 Explore the implications of the implementation of the FAIR principles in archaeology, for funders, researchers, and publishers.
- 6.2 Provide advice and support to AHRC grant applicants and holders, subject to funding.
- 6.3 Work with other UK Arts and Humanities data centres to provide training in data management planning and effective digital data archive creation.
- 6.4 Advocate the work of the ADS on guidelines and standards, and promote these to a wider community.
- 6.5 Maintain and regularly review ADS online documentation.
- 6.6 Maintain and update the Guides to Good Practice, working with external partners in the UK and overseas to ensure currency and relevance.

- 6.7 Provide advice and costings to depositors, users and collaborators in a timely fashion.
- 6.8 Support international partners in establishing and maintaining their own national digital repositories for archaeological data.
- 6.9 Encourage dialogue between historic environment digital archives to ensure consistency of advice and practice.

## 7 Develop and implement agreed standards

To work with others to **develop and implement agreed standards** to ensure appropriate documentation and preservation of digital resources created in the course of research in archaeology and related disciplines.

### Aim

- To maintain and develop professional standards for digital preservation and data management of historic environment data in collaboration with other information providers in the UK and overseas.

### Objectives

- 7.1 Work within the Archaeological Archives Forum (AAF) to promote digital archiving standards for archaeology.
- 7.2 Work with Chartered Institute of Archaeologists (CIfA) to ensure digital preservation and data management standards are included during the accreditation process of professional organisations.
- 7.3 Maintain a significant role within the Forum for Information Standards in Heritage (FISH) and the Historic Environment Network (HEIRNET).
- 7.4 Maintain involvement in the Research Data Management Forum (RDMF) and Digital Preservation Coalition (DPC) on shared policies and procedures as appropriate.
- 7.5 Work with UK and international partners on standards and terminology control, and ensure appropriate terminologies are implemented within ADS archives and object metadata.



## 8 Support re-use

To provide encouragement and support for the **re-use** of primary data and digital resources created in the course of research in archaeology and related disciplines.

### Aims

- To raise awareness of the services and content provided by the ADS and Internet Archaeology within relevant communities.
- To better encourage and support the use of ADS and Internet Archaeology resources and services.
- To see an annual increase in use of archives.

### Objectives

- 8.1 Maintain the help desk and respond to user queries in a timely fashion.
- 8.2 Develop and promote ADS online training videos and other training materials.
- 8.3 Increase promotion and guidance on use of DOIs and ORCIDs.
- 8.4 Make strategic use of social media in promoting the ADS and *Internet Archaeology* resources and activities.
- 8.5 Develop capacity to better monitor, investigate, and display data re-use.
- 8.6 Work with SEADDA WG4 and Coalition for Archaeological Synthesis (CfAS) communities to investigate challenges of data re-use.



## 9 Research and development

To take a lead international role in **research and development** into preservation, access and interoperability, with a view to enhancing all the above services.

### Aims

- To ensure the work of the ADS is informed by the most current research, allowing collaboration with partners to contribute to useful outcomes.
- To raise the profile of the ADS as an organisation undertaking high-quality research.
- To enhance selected content and improve accessibility and usability.
- To raise additional research funding to complement core activity.
- To better predict future development needs.

### Objectives

- 9.1 Take a leading role in e-infrastructures, at UK and international level.
- 9.2 Bring the ARIADNEplus INFRA project to a successful conclusion and explore options for sustainability.
- 9.3 Bring ADS involvement in SSHOC to a successful conclusion, and explore options for continued involvement in EOSC.
- 9.4 Bring the SEADDA COST Action to a successful conclusion, with publication of project outcomes.
- 9.5 Support the development of an e-infrastructure for the UK's marine heritage, within the Towards a National Collection UNPATH project.
- 9.6 Maximize impact and external engagement of the ADS beyond the Higher Education sector.

- 9.7 Be proactive in seeking UK Research Council and European Commission research funding.
- 9.8 Exploit opportunities for research collaboration with UK-based researchers.
- 9.9 Explore opportunities for richer data integration, using Linked Open Data and other emergent technologies.
- 9.10 Continue to exploit the potential of Natural Language Processing, Named Entity Recognition, annotation tools, and Data Mining.
- 9.11 Monitor trends within the domain to undertake responsive action in both research and development.
- 9.12 Attend and present papers at a minimum of three key conferences per annum.
- 9.13 Publish a minimum of two research papers per annum.

## 10 Funding, management and administration

To maintain effective service **management and administration** in pursuit of all the above aims, and to maintain financial sustainability.

### Aims

- To be sustainable in the long term.
- To deliver a strong and effective service operation.
- To encourage staff career development.

### Objectives

- 10.1 Raise a minimum of £750,000 external funding per annum.
- 10.2 Ensure that income exceeds expenditure, and includes sufficient overhead to cover professional services fees levied by the University of York, whilst maintaining freedom to invest any surplus in the future of the ADS.
- 10.3 Ensure that the position of the ADS within the University of York is safeguarded by appropriate agreements.
- 10.4 Identify funding opportunities at national, European and international levels.
- 10.5 Use the Article Processing Charge (APC) business model to provide a sustainable primary revenue source for *Internet Archaeology*.
- 10.6 Undertake monitoring and evaluation through annual meetings of the Management Committee.
- 10.7 Provide reports to funders as required, including an Annual Report.
- 10.8 Maintain internal management, reporting and accounting structures.

- 10.9 Conform to University of York policies and procedures.
- 10.10 Maintain and update a range of publicly available policies that inform the work of the ADS.
- 10.11 Encourage staff development and career development planning via University of York Performance Development Review procedures.
- 10.12 Ensure that staffing grades, roles, and responsibilities are appropriate to the level and scale of activity.
- 10.13 Working with ADS Management Committee and external stakeholders, develop longer term strategic thinking.
- 10.14 Maintain and develop the ADS preservation fund.