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<th><strong>Title:</strong></th>
<th>HERALD: Historic Environment Research Archives, Links and Data. Redevelopment of the OASIS form (Stage 2: Technical redevelopment of the form) Project Number 6752</th>
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<td>Jo Gilham &amp; Louisa Matthews</td>
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2. Project Name

HERALD: Historic Environment Research Archives, Links and Data.
Redevelopment of the OASIS form (Stage 2: Technical redevelopment of the form)
Project Number 6752

3. Summary Description

This project builds upon the user needs surveys in HERALD & BIAB Stage 1 projects (see (Gilham, J. and Hardman, C., 2015) and (Gilham, J. and Matthews, L., 2015) and will cover the technical redevelopment of the OASIS system. The redeveloped OASIS form will be designed to include data gathered from community groups, historic building specialists and museum professionals as well as the archaeological community it covered before.

4. Background

4.1. History

HERALD represents the next stage of development of OASIS, which began as a collaborative venture between the Archaeology Data Service (ADS) and Historic England (HE) to provide information about archaeological events and access to unpublished archaeological fieldwork reports or ‘grey literature’, especially those produced as a result of planning/development control related fieldwork.

It has been recognised that OASIS is currently at a stage where it has outgrown the system on which it is hosted and there is a need to move it to a new platform and re-engineer the underpinning system architecture.

The preparations and market research required to ensure that there was an identifiable need for the redevelopment and re-envisioning of OASIS began in 2012 with the commissioning of the Review of the development and implementation of OASIS in England (Pye Tait Consulting, 2012) and has continued with the production of Heritage Information Access Strategy: Business Process Mapping of Historic Environment Information (Oakleigh Consulting Ltd, 2015), the Stage 1 HERALD Report (HERALD: Historic Environment Research Archives, Links and Data: Final Report (Gilham, J. and Hardman, C., 2015)), and latterly the BIAB: hosting by the ADS and incorporation into the HERALD project: Stage 1 – strategic vision report (Gilham, J. and Matthews, L., 2015).

The preparatory work laid down in the early reports has identified the need for OASIS redevelopment – the HERALD project - and the latter documents have identified ways in which this redevelopment can be realised.

The Pye Tait review of the development and implementation of OASIS in England, included the preparation of an updated strategy consistent with Heritage Protection Reform (HPR), and identified the need for the future development of OASIS to be mindful of the context of changed planning procedures and the need to show public benefit alongside reduced resources within Local Authorities. It also emphasised the need to minimise double handling of information.

The Oakleigh Report (2015) set the redevelopment of OASIS in a wider context, by setting out a vision in which the redevelopment of OASIS is just one part of the need to address the full landscape of historic environment data and information and its handling within the sector. Oakleigh therefore forms a key guiding document for the Heritage Information Access Strategy – (see below).

Lastly, the HERALD project has been influenced by factors in the wider HE information environment. The decision by the CBA that the British and Irish Archaeological Bibliography (BIAB) was becoming increasingly out of place with their strategic vision and might therefore sit more comfortably with the ADS has opened up a sea of opportunities for the HERALD project and HIAS, by bringing the system for recording and disseminating bibliographic or ‘source’ data under the same roof as the principal tool for the recording of events data. The incorporation of the revised strategic vision of BIAB (see (Gilham, J. and Matthews, L., 2015) into the HERALD project therefore brings together two widely used and well
known resources in British archaeology and affords an exciting opportunity to really change the creation, management and transfer and discovery of not only data, but knowledge and understanding.

4.2. Context – Heritage Information Access Strategy
Since the Pye Tait survey, Historic England have identified the need for a cohesive and interactive strategy to look at all aspects of data flows and processes between Historic England and Local Authorities.

The HERALD project nests within a broader initiative intended to secure an improved and more cost-effective approach to the handling of digital historic environment data (Historic England, 2014), namely the Heritage Information Access Strategy.

The HERALD project will therefore be delivered within the broader framework of the Heritage Information Access Strategy. The strategy is being delivered via a number of synergistic work packages. Aspects of other work packages therefore depend on, or will need to be informed by, HERALD development and delivery. Equally, HERALD will be informed by other work packages.

5. Aims and Objectives
The Stage 2 HERALD project will build on the HERALD Stage 1 Project Outcomes in order to realise the Oakleigh Consulting ‘to be’ processes with respect to OASIS and the Pye Tait Consulting Report Objectives.

HERALD Stage 2 will therefore:
a) Crystallise the future vision for OASIS and how it is intended to integrate with and complement existing systems such as HERs, the Archaeology Data Service (ADS) and the Heritage Gateway;
b) Develop the brand and identity for the future of OASIS; (Pye Tait Consulting, 2012)
c) Work towards a more efficient and inclusive system that complements current information flows within HERs and seeks to prevent working practices that lead to data double-handling; (Pye Tait Consulting, 2012)
d) Implement mechanisms to engage societies, community groups, museums and academics with OASIS; (Pye Tait Consulting, 2012)
e) Broaden OASIS to encompass a wider range of event types and historic environment disciplines and asset types. (Pye Tait Consulting, 2012)
f) Build a new OASIS system that will integrate with HER workflows thereby removing barriers to participation (Oakleigh Consulting Ltd, 2015, p. vi point 6).
g) Build a new OASIS system that will extend use by academic researchers, local history groups and museums (Oakleigh Consulting Ltd, 2015, p. vi point 6).

In summary, the project will build the tool necessary to realise the Oakleigh ‘to be’ processes vision. It will do this by utilising the knowledge and understanding garnered by the Stage 1 HERALD project report findings and HIAS work package interactions.

6. Business Case

6.1. Purpose – why now?


“With our partners, improve access to information through local Historic Environment Records and explore ways of moving towards a single means of accessing historic environment information nationally.”

(Historic England, 2015, p. 18)

The drivers for change laid out in the HIAS proposal document (Historic England, 2014) and latterly ‘Heritage Information Access Strategy: Business Process Mapping of Historic Environment Information’ (Oakleigh Consulting Ltd, 2015, pp. 39, Appendix 1), resonate with vision for the redevelopment of OASIS. In order to effect change, a number of long standing issues of complexity and duplication of effort in the management of, and access to, historic environment information need to be addressed. Principally, HERALD will address some of the issues identified in the Oakleigh report (Oakleigh Consulting Ltd, 2015), namely:

“that there is currently a lack of clarity around process and data flows; the integration of OASIS into workflows, the purpose of systems and the lack of compatibility of IT systems and tools”

(Oakleigh Consulting Ltd, 2015, p. iv)

The embedding of OASIS into Local Government information management workflows will facilitate a seamless multi-directional flow of information and realise the goal of faster and better decision making identified as one of Historic England’s key objectives, for itself and others (Historic England, 2015, p. 18, objective 2.6.1).

It is becoming imperative in the context of reduced capacity and resources in both Local Government (ALGAO, IHBC, EH, 2015) and within National Heritage bodies (Oakleigh Consulting Ltd, 2015, p. i), that these goals are realised.

The purpose of the HERALD project is to effect this change, by addressing a number of long standing issues of complexity and duplication of effort in the management of, and access to, historic environment information. Building on the results
and recommendations of the Stage 1 HERALD Report (Gilham, J. and Hardman, C., 2015), the Stage 2 HERALD project will enable these long standing issues to be addressed.

6.2. Deliverables

The key deliverables for HERALD stage 2 have been identified as:

- Continuing and enhancing the OASIS facility for uploading unpublished fieldwork reports to the ADS Library (commonly referred to as the Grey Literature Library or, formally, the Library of Unpublished Fieldwork Reports)
- Continue to ensure that items in the library are freely accessible, searchable, linkable and archived in the long term.
- Extend the ADS Library to include a re-envisioned BIAB
- Extend the existing OASIS functionally to provide event recording for the built historic environment, landscapes, and other specialist users
- Extend the existing OASIS form to provide event recording for community groups
- Create Museums view for OASIS to complete the circle of information handling from project inception to archive deposition (and beyond).

It is acknowledged that building of a system is only part of the solution. Change management is a process of communication, (re)education and challenging perceptions and preconceptions as much as facilitation. It has been acknowledged that subsequent work will be required, once the system is built to ensure its success.

6.3. Who benefits from this?

**Historic Environment Record:** The HER receives free accessible storage for grey literature reports within an accredited discipline specific digital archive. Because the HER has access to the OASIS system and can download all metadata including the OASIS id they are then able to use this id to link between their HER data which may be available online (some on Heritage Gateway) and the original report housed within the ADS archive.

**Commercial Units and Community Groups:** These sectors, while different in many ways have similar requirements in terms of their project outputs. OASIS allows them to benefit from free, accessible storage for their grey literature reports which enables them to develop an online branded library of their own. In the current economic climate the provision of the ADS Grey Literature Library (Grey Literature Library) also acts as a secure repository in the unfortunate event that the unit may go out of business or the community group disperse.

A cost-saving for both HERs and commercial archaeology can be realised with central online access to archaeological reports. In 2013 North Yorkshire HER built a business case for the digitisation and deposition of unpublished reports in the Library of Unpublished Fieldwork Reports on the basis that staff time required for HER enquiries can be significantly reduced by linking HER database output to the Library of Unpublished Fieldwork Reports – saving staff time locating and copying reports for enquiries and saving contractors time – by making a visit to the HER in person unnecessary.

**Historic England:** OASIS similarly provides access to the grey literature reports submitted via the system. Access to the system will allow for Historic England investigators to record their work and ensure it is passed to HERs in line with principle 1 of HIAS.

**Museums Community:** In the light of limited resources available for digital archiving within museums the current OASIS system gives museums an opportunity to make collections more visible. It is also envisaged that OASIS will allow participating museums to track potential archive deposits and communicate with depositors. The system will also enable the tracking and quantification of archives where no collecting facility (museum, archives) has been identified.

**ADS:** The GLL has proved to be one of the most popular resources held by the ADS. We believe that this is because of a number of factors, including rich metadata which makes searching easy. (The ADS has plans to enhance the search facility incorporating more of the metadata fields available for the OASIS database). In addition, the resource constantly grows so
researchers benefit from returning to the collection. From the archiving perspective the fact that the files come with rich structured metadata makes ingest, accessioning and archiving the files much easier.

Specialists: This is an area where OASIS does not yet offer an ideal solution (with the exception of the geophysical survey which was recorded in more detail in OASIS in 2004). A module to record more specific information about geophysical survey was included in OASIS in 2004 at the request of RCAHMS. This has meant that with the inclusion of geophysical survey reports we can start to build specialist resources (interfaces) from the same pool of (OASIS) data (e.g. the Historic England geophysical survey database which links to the appropriate grey literature where it is available). The BABAO group has already expressed interest in developing an equivalent solution for their grey literature, and there is a need to consult widely, including the various pottery and finds research groups (e.g. Roman and Medieval Pottery Groups, Finds Study groups, Medieval Settlement research group etc.)

Period societies. Both the Society for Medieval Archaeology and Society for Post-Medieval Archaeology use OASIS to generate their annual round-ups of fieldwork. Commencing with reports from the 2007 fieldwork season, the databases link individual sites, through their OASIS identifiers, to the relevant records in the GLL, providing access to a wide range of data and grey literature. This service could be extended to other period societies.

British and Irish Archaeological Bibliography (BIAB): The incorporation of BIAB into the HERALD project ‘closes the loop’ in terms of resources discovery and metadata service provision for archaeological events and associated literature. Re-envisioning BIAB will bring together the wealth of bibliographic discovery information collected by OASIS alongside the information on the latest research papers and monographs. Where resources are hosted by the ADS (Library of Unpublished Fieldwork Reports, selected County and Period Themed Journals (for details see http://archaeologydataservice.ac.uk/archives/?category=journalsandseries) ) these will be made available as full texts (not just abstracts).

With less reliance on manual abstracting and harvesting of information the risks of out-of-date information are considerably lessened and the efficiency of collection and dissemination increased significantly.

Research Frameworks: The bringing together of BIAB and OASIS provides an opportunity to support and enabling Research Frameworks. Preliminary discussions have indicated that the inclusion of Research Framework fields in the OASIS system could be harvested and disseminated in a number of ways with direct benefit to the compilation of research framework resource assessments and reports.

7. Project Scope

The HERALD project Stage 2 covers the technical redevelopment of the OASIS form for historic environment event recording for England.

8. Interfaces

The project will need to interface with a range of heritage bodies and professionals and in particular those bodies represented on the OASIS project board. This interfacing will be done through regular updates to the OASIS board with information cascading down to sectors from there.

9. Project Review

Project review is subject to approval of Historic England. Given the long running nature of the OASIS form redevelopment, a series of review points will be necessary. It is proposed to report progress to HIAS Advisory Board and OASIS Management Board (every 6 months).

Review point 1 at project inception will require the agreement of the Functional Specification for the OASIS build. This will ensure the progress of the project according the time and budget – deviation from the agreed functional specification will require agreement from Historic England due to the increased costs and time associated with alterations to hardcoding.
Formal review will take the form of a mid-project highlight report (review point 2). Review point 3 will be the first beta release of the form, which will run for a period of XXX months to ensure appropriate alterations and updates can be made. The final review point will consist of the official launch of the form and project report.

10. Project Team Structure & Communications

The role of Project Executive will be jointly undertaken by Prof Julian Richards, Director of the ADS and Louisa Matthews, Collections Development Manager at the ADS.

The role of Project Manager and Lead Expert for the project, in this case described as Redevelopment Manager, undertaking day-to-day oversight of the project, consultation work and developing the project, will be Jo Gilham, Digital Archivist with the ADS. Jo Gilham was involved in the original development of the OASIS form and the Redevelopment Manager for Stage 1 of the HERALD and BIAB redevelopment projects. The application developers and technical lead on the project will be drawn from technical staff at the ADS.

The project team (Project Executive, Redevelopment Manager, Technical Lead and Application Developers) work closely on a day-to-day basis and any issues can be dealt with as they arise. The Project Executive is also responsible for task allocation within the wider ADS and will therefore be in a position to ensure the project gets relevant support in a timely fashion. In addition the whole project team will meet with the Project Executive on a monthly basis within the framework of the ADS monthly executive meeting, where updates on progress on the project will be given.

11. Methods Statement

11.1. Overview of the new OASIS system

OASIS is a system for historic environment event recording in Britain. The aim of OASIS is to facilitate the movement of information on heritage events between different heritage organisations.

11.1.1. OASIS LITE, OASIS STANDARD and OASIS PLUS

A fundamental change in the new OASIS system is the introduction of three tiers of recording instead of one. These are OASIS LITE, OASIS STANDARD and OASIS PLUS.

11.1.1.1. OASIS LITE

OASIS LITE is a mechanism for uploading project reports to the ADS Library (incorporating BIAB and Grey Literature Library). OASIS LITE will collect an enhanced bibliographic record (see section 11.3.1 for details) which is used as discovery...
metadata for locating the report. OASIS LITE will only be available to LEVEL 1 and 1a users in certain circumstances and only applies to the areas of the form which are relevant to transfer to the HER (i.e. not the archive section which will be dependent on participation by the museum rather than the HER). OASIS LITE will only be available when there is an HER for the area and that HER is collecting the full event record by other means (i.e. not participating in OASIS). All other modules which are relevant to that Event will be collected even if the HER is not collecting.

11.1.1.2. **OASIS STANDARD**
This is the current level of OASIS record available and will be used when the HER is participating in OASIS and using the data gathered to populate the HER or there is not HER collecting event information for an area.

11.1.1.3. **OASIS PLUS**
This is the extension of the facility to record additional data about an event. The current system has a module for collecting additional data for geophysical surveys and the new system would like to extend this to include other event types as well.

The system will be developed to allow the addition of these OASIS PLUS modules after the initial system is completed. The OASIS PLUS modules currently suggested for the system are:

- Geophysical survey (to be funded as part of the Historic Environment Scotland bid)
- Historic building recording
- Radiocarbon date recording
- Aerial investigations recording
- Remote sensing recording
- Landscape survey recording
- BABAO human bone recording
- Graveyard recording (to be funded by University of York Centre for Digital Heritage)

These modules are described in more detail in section 11.4.4 OASIS PLUS: Module interfaces (event specific pages)

11.2. The OASIS brand name
There has been mixed feedback on the name of OASIS, the Pye Tait Survey (Pye Tait Consulting, 2012) strongly recommended that the name OASIS should be retained after any redevelopment as this ‘would necessitate more marketing, more explanation, and may risk losing any existing good feeling which OASIS carries’ as well as requiring changes to all existing text used in Briefs, WSIs and other supporting documentation. With this in mind though there are new user communities which feel that OASIS is a purely archaeological tool and not relevant to the wider historic environment community and so a change of branding for them might increase take up.

One example of this is the Historic Building Recording community who will have their own tailored module within OASIS for Historic building recording events. This will be an OASIS PLUS module and as such it would be beneficial to give specific identity to these modules.

In order to retain consistency across the system as a whole whilst still differentiating between user groups and specific modules we propose that each module be given a name consistent with this format:

**OASIS+: MODULE**

e.g. OASIS+:Geophysics, OASIS+:Buildings, OASIS+:Osteoarchaeology, OASIS+:C14, OASIS+:Graveyards etc.

11.2. Types of user
The new OASIS system will cater for six main types of user with the possibility of sub types where appropriate. The current users proposed are as follows:
• Level 1 - Archaeological contractors, building specialists, and other heritage professionals who undertake projects that should be reported to the local HER or might produce a report they wish to archive and make available online. This could also include users for large projects (e.g. HLF) who would upload data in bulk for addition to HERs.

• Level 1a - community groups, volunteers and other groups who do not associate themselves with commercial archaeology but undertake projects that should be reported to the local HER or might produce a report they wish to archive and make available online.

• Level 2 - Historic Environment Records or similar organisations which are responsible for overseeing archaeological work undertaken in their area.

• Level 3 - Archive, Museum or records offices which are responsible for holding archives from archaeological fieldwork and building surveys.

• Level 4 - National bodies who have oversight of archaeological work undertaken in their country.

• Level 5 - Organisations who will download specialised data from the system such as Discovery and Excavation in Scotland and specialist data providers such as Vernacular Architecture Group or Graveyard recording group.

• Level 6 - Archaeology Data Service - administrative user

11.3. The data OASIS collects

OASIS should only collect information that will be passed on for use elsewhere. The following are the core fields that OASIS will collect. There is still some consultation needed to define the additional fields which will be collected by the OASIS PLUS modules.

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<td></td>
<td></td>
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<td>Current land use</td>
<td></td>
<td></td>
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<td>HERALD Stage 2 Project Design</td>
<td></td>
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<td>--------------------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monument type &amp; period</strong></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Significant finds &amp; period</strong></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Research Outcomes</strong></td>
<td>Proposed new field</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project Location</strong></td>
<td>Choice of how to enter this and other fields auto generated</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Site location</strong></td>
<td>Administrative areas M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Site name</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Postcode</strong></td>
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</tr>
<tr>
<td><strong>Study area</strong></td>
<td>This may be superseded by the boundary being drawn on a map or uploaded</td>
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<tr>
<td><strong>National grid reference</strong></td>
<td>Entered as Grid reference, Lat/Long or by clicking on a map</td>
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</tr>
<tr>
<td><strong>Latitude Longitude Datum</strong></td>
<td>If Lat/Long used (M)</td>
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<td></td>
</tr>
<tr>
<td><strong>Height OD</strong></td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HER (Level 2)</strong></td>
<td>Pick-list generated according to location</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>National body</strong></td>
<td>Auto generated according to location</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project Creators</strong></td>
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<td></td>
<td></td>
</tr>
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<td><strong>Name of organisation</strong></td>
<td>Auto generated</td>
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<tr>
<td><strong>Project design originator</strong></td>
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<td><strong>Project director</strong></td>
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<tr>
<td><strong>Project manager</strong></td>
<td>M</td>
<td></td>
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</tr>
<tr>
<td><strong>Sponsor or funding body</strong></td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type of sponsor or funding body</strong></td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project Archives</strong></td>
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<tr>
<td><strong>Archive recipient</strong></td>
<td>Selected via the SMA collecting areas database according to project location</td>
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<td><strong>Archive ID</strong></td>
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</tr>
<tr>
<td><strong>Contents</strong></td>
<td>To be confirmed</td>
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<td></td>
</tr>
<tr>
<td><strong>Media available</strong></td>
<td>To be confirmed</td>
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<td></td>
</tr>
<tr>
<td><strong>Archive notes</strong></td>
<td>Dialogue between interested parties</td>
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</tr>
<tr>
<td><strong>Project Bibliography</strong></td>
<td>Five types of bibliography:</td>
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### HERALD Stage 2 Project Design

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<thead>
<tr>
<th>Title</th>
<th>M All types</th>
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<tbody>
<tr>
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<td>M 2</td>
</tr>
<tr>
<td>Multi-article monograph title</td>
<td>M 3</td>
</tr>
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<td>M All types</td>
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<td>Serial/multi-article editor(s)</td>
<td>M 2,3</td>
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<td>Page numbers</td>
<td>M 2,3</td>
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<td>Other bibliographic details</td>
<td>O All types</td>
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<tr>
<td>Edition</td>
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<tr>
<td>Date</td>
<td>M All types</td>
</tr>
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<td>Issuer or publisher</td>
<td>Auto generated from user details</td>
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<td>O All types</td>
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### 11.3.1. OASIS LITE fields collected - enhanced bibliographic record

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<thead>
<tr>
<th>Current OASIS field</th>
<th>Notes and possible changes</th>
<th>Mandatory / optional</th>
<th>MIDAS Mapping</th>
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<tbody>
<tr>
<td>OASIS unique id</td>
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</tr>
<tr>
<td>Project Details</td>
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</tr>
<tr>
<td>Project name</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short description of project</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project dates</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any associated project reference codes (e.g. HER No, Accession Id etc)</td>
<td>Brought into a section of its own so it is more obvious</td>
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</tr>
<tr>
<td>Event type</td>
<td>Proposed new field</td>
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<td>Monument type &amp; period</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant finds &amp; period</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Outcomes</td>
<td>Proposed new field - used to populate research frameworks and not dependent on HER participation</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Project Location</td>
<td>Choice of how to enter this and other fields auto generated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site location</td>
<td>Administrative areas M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site name</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National grid reference</td>
<td>Entered as Grid reference, Lat Long or by clicking on a map</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lat Long Datum</td>
<td>If Lat Long used (M)</td>
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<td></td>
</tr>
<tr>
<td>HER (Level 2)</td>
<td>Pick-list generated according to location - the HER selected defines if a LITE record is required</td>
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<td></td>
</tr>
<tr>
<td>National body</td>
<td>Auto generated according to location M</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Creators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of organisation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Archives</th>
</tr>
</thead>
<tbody>
<tr>
<td>This section is controlled by Museum participation rather than HER participation</td>
</tr>
<tr>
<td>Archive recipient</td>
</tr>
<tr>
<td>Archive ID</td>
</tr>
<tr>
<td>Contents</td>
</tr>
<tr>
<td>Media available</td>
</tr>
<tr>
<td>Archive notes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Bibliography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only one type: Grey literature report</td>
</tr>
<tr>
<td>Title</td>
</tr>
<tr>
<td>Author(s)/Editor(s)</td>
</tr>
<tr>
<td>Other bibliographic details (e.g. Report no)</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>Issuer or publisher</td>
</tr>
<tr>
<td>Place of issue or publication</td>
</tr>
<tr>
<td>ISBN</td>
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</tbody>
</table>
11.4. Functionality of the OASIS form

11.4.1. General functionality

11.4.1.1. Session timeouts
Responding to feedback from users and the outputs of the HERALD survey, the new OASIS system needs to address the way that session time outs are dealt with by the system. Currently the form entries are not stored until the user saves the form at the end of the data entry process. The aim will be to save form entries at least at the end of each section and if possible after each field is completed. This will ensure that data will not be lost if the user session does timeout whilst a user is away from the computer.

11.4.1.2. Records ‘always open’
In the current system a record goes through a linear process from start to finish and at finish/sign off it can no longer be updated. In the new system there is a requirement for records to always be open. This will mean that they can be updated to add additional/specialist information even though the record had been downloaded by the HER or national heritage organisation. The HER / national heritage organisation would notified of updates if desired.

11.4.1.3. Versioning
The current OASIS system saves each version of an OASIS record and deletes all but the last version when the record is signed off. The new system will need to retain all versions due to the ‘always open’ nature (see 11.4.1.2 ) of a record. This will also address an issue with the current system which loses information on who entered the original record when the first versions are deleted.

11.4.1.4. Recent activity update
The current system sends out an email notification for each individual notification (e.g. new record created, report uploaded, record still awaiting validation etc). The new system will collate these notifications and make them available as a recent activity update or summary which can be received by email or on login to the system. What appears on this summary will be customisable by the individual user.

11.4.1.5. Project summary
The project summary page will be the first page viewed for an existing project. It will include the following information about a project:
- The OASIS Id, Project name and location
- The completeness of each section of the form
- The status of the report - if it has been uploaded / preserved / transferred to BIAB etc.
- The fieldworker (Level 1/1a) for the project (with links to their profile page)
- The HER (level 2) for the project (with links to their profile page and level of participation in OASIS)
- The museum (Level 3) for the project (with links to their profile page and level of participation in OASIS and if they are accepting archives)
- The HER No
- The Museum Accession No
- The stage the project has reached in the project workflow

11.4.2. User management

11.4.2.1. Registration
The registration process for accessing the OASIS system will be similar to most online systems with a user entering their name and email address and choosing a password. They will then have the choice of entering the details of a new
organisation or searching for an existing organisation and sending a request to be added to it. This request is then approved by an existing member of the organisation. The system will be created so that a user can start entering a record before this approval is granted but is unable to see other records and information belonging to the organisation.

11.4.2.2. ORCID link
During registration (and from the user profile page) the user will be able to register for an ORCID Id (http://orcid.org). The level of integration with the ORCID system is yet to be fully investigated. In its most basic form it will be a link to the registration page and at best it will be an automated registration which will take the details from the OASIS registration form and send them to ORCID. Details of the new ORCID id would come back in response. The benefits of linking OASIS to the ORCID system is that each user (a potential author of a report) will then have an identifier to distinguish them from others with similar names and this identifier will then be linked with their report in BIAB and other systems using data from OASIS. OASIS could also be used to populate the individual’s profile on ORCID with details of their publications.

11.4.2.3. Users and organisations
Each person would have their own personal login that would be associated with one or more organisations. The person would either be an ‘admin’ user of an organisation or a ‘standard’ user of the organisation.

A standard user can:
- See all records belonging to the organisation
- Receive notifications about records they have created/updated
- Claim a record started/entered by someone else and receive notifications on it
- Create new records
- Update any record for that organisation

An admin user can do all the above and:
- Receive notifications about all records within the organisation
- Create new users
- Add existing users to the organisation
- Approve requests to become associated with the organisation
- Give access to a hidden/embargoed record belonging to their organisation
- Remove users from the organisation
- Change the organisation details
- Delete records or mark them as duplicates

Organisations will be associated with levels:
- Level 1 - Data inputter (Contractor)
- Level 1a - Data inputter (volunteer)
- Level 2 - Regional data consumer (HER)
- Level 3 - Archival body (Museum / archive)
- Level 4 - National data consumer (National body)
- Level 5 - Specialist data consumer (e.g. Big Anchor society)
- Level 6 - ADS / admin user

It would be possible for organisations to belong to more than one level. Examples:
- In Cambridgeshire, the HER and archive repository are run from a single office, it would be possible to have a single organisation with both Level 2 and Level 3 privileges.
- In national parks it is common for the HER officer to also undertake fieldwork. They would need Level 1 and Level 2 access in the single organisation.
A user from a particular organisation could set their primary access level in their preferences, i.e. Level 1, and then be able to change to Level 2 during their session by selecting from a menu option (similar to how the country can be changed in the current OASIS system).

11.4.2.4. Profiles and statistics
Each user within the system will have a profile page in which they can change their name, password and the organisation(s) they are affiliated with. They would also be able to customise the notifications they receive and potentially be able to control how some fields are pre-filled within the form and set their default user, if they belong to an organisation with multiple levels.

Each organisation will also have a profile page in which the name and address details will be editable. It will also be possible to manage the members of the organisation from this page, adding, approving and removing users. There will also be a link to the organisations public profile (wiki) page which will contain information relevant to the organisations role in OASIS.

- Level 1 and 1a users can have details of their organisation and the number of forms completed etc.
- A level 2 organisation (HER) would have details of their participation levels (see next section) as well as information about the workflow in their area in order to help other users of the system. It will also let them set the areas of the country they are responsible for.
- Level 3 (Museum and archive) users will have links to their collections policy and how they interact with OASIS and the other information currently available on the SMA Archaeological Collections Areas Database and Map (http://archaeologydataservice.ac.uk/archives/view/sma_map/) such as if they are accepting archives and if there is an archaeological curator. They would each be able to update this information but it will also be a role of the OASIS support to remind people about keeping information current, or update this information in some cases.
- Level 4 (national body) and 5 (specialist data consumer) will have a page which allows them to say how they use the data they receive from OASIS and might have statistics of how many records they have downloaded etc.

The statistics available will be information on the number of forms and reports passing through the system that are relevant to the user, similar to the statistics available to users on the current OASIS Internal pages and reported on at management board meetings.

11.4.2.5. Levels of participation: Level 2 (HERs)
The current version of OASIS assumed that all HERs would participate in OASIS in the same way and was not built to accommodate the differences in structure and workflow reflected in the Local Authorities across the country. Although the new OASIS cannot accommodate the full range of workflows in Local Government, it is hoped that the following options will allow enough flexibility to allow all to participate at some level (or not at all) without leaving records/reports stuck in the system.

The profile page for an HER will provide various settings:
- What is the area covered by the HER?
- Is there an HER for the area? (If yes, the next question would be available)
- Is the HER collecting data via OASIS? (A ‘No’ for this option would trigger the collection of OASIS LITE records)

These options would also be available to the Level 4 (national body) and Level 6 (ADS/admin) users to allow these settings to be updated if the HER is not able to.

11.4.2.6. Levels of participation: Level 3 (Museums/archives)
The details of exactly what will be available here is still under discussion but the options would be along the lines of:

- Are they accepting archives?
- Are they accepting archive notification forms through OASIS?
- Are they accepting uploads of archive contents through OASIS?
- Do they use deposit windows?
11.4.2.7. **Levels of participation: Level 4 (national bodies)**
Are they marking records as validated/checked/reviewed before they can move into other systems?

11.4.2.8. **Levels of participation: Level 5 (specialist data consumers)**
- They can preselect the areas/ type of events and fields that they want to download.

11.4.2.9. **Notifications**
What notifications would be available for the different levels of user?
- **Level 1 - contractor and Level 1a - volunteer**
  - Record updated by another user (All levels)
  - Record downloaded by another user
  - Record claimed by another level 1 user
  - Record Level 2/3/4 changed user (i.e. change of HER or Museum)
  - Report uploaded to ADS Library (BIAB/GLL) and given DOI
  - Record awaiting completion (after period of time or initiated by HER)
  - Record awaiting report upload (after period of time or initiated by HER)
- **Level 2 - HER**
  - Record started by Level 1/1a user
  - Record mandatory fields completed
  - Report uploaded by Level 1/1a user
- **Level 3 - Museum**
  - Archive section updated
  - Archive note entered
  - Archive deposition date reached
- **Level 4 - national heritage organisation**
  - Report uploaded to GLL and given DOI
  - Record started (requested by Archaeology Scotland)
  - Record core fields completed (requested by Archaeology Scotland)
- **Level 5 – external data consumer**
  - New data available

This list is not yet complete.

11.4.3. **Form entry**
11.4.3.1. **Who can start records**

Level 1, 1a and level 2 users are able to start records. These can be started within the form or by importing a formatted spreadsheet or via the API (see sections 11.4.5.1 and 11.4.5.4). If a Level 1 / 1a (Contractor/Volunteer) user starts a record it will take the normal flow through the system with them completing the bulk of the record and uploading a report and that information then being made available to the other user levels who are interested in the data.

If a level 2 (HER) user starts a record it then needs to be retrieved by the Level 1/1a (Contractor/Volunteer) user who undertook the fieldwork/event. The model for doing this will be that the Level 1/1a user will come to the form and either enter an Identifier for the project (HER Id or OASIS Id) or some basic information to find the project (Event type and Location) and then they retrieve it from at most a short list of matching projects.

11.4.3.2. **Event types**

The first data to be entered into the form for a new record is the Event type. This will be drawn from the FISH Event Types Thesaurus available from http://heritagedata.org as a Linked Data Vocabulary. The event type selected will act as a trigger to displaying the event specific modules which are being developed as part of OASIS PLUS. E.g. Event type - building recording will send the user to the building recording specific pages.

11.4.3.3. **Location & boundary definition**

Defining the location of a project currently involves entering essentially the same information in a number of different ways: grid reference, administrative areas, postcode etc. The new system will allow the user to specify the location of their project in one of a number of ways which will then auto generate the others. So the user would be able to click on a map to show the project location and it would generate the grid reference, administrative areas, postcode etc. for that point. If
the user preferred to type in the grid reference it would then display the point on a map and allow the user to check that it is correct before then generating the other information.

There will be different ways of defining the area covered by a project depending on its type and size. Small scale projects will have a grid reference and a project boundary. Other larger landscape projects can be defined according to administrative boundaries at a district, county or country level. There will be the possibility of also specifying particular locations within the project area with additional grid reference points. It will also be possible to define multiple polygons if required.

The current system allows the upload of a GIS file with a polygon showing the boundary of the site. The new system will allow a user to either define the boundary of the project by drawing it on the map on screen or alternatively uploading a boundary GIS file. It is possible that the system may be able to import certain types of GIS file and display them on screen but this is dependent on development. Any boundaries defined on screen would be able to be downloaded by data consumers (Levels 2-5) in a format which can be imported into most GIS packages (also subject to development).

11.4.3.4. HER and Museum selection
As has been mentioned above Level 2 (HERs) and 3 (museums/archives) users will be able define their coverage areas as part of their organisation user profile (see 11.4.2.4). When the Level 1/1a user selects the location of their project they will narrow down the selection of the appropriate Level 2 and 3 users to only those covering the district(s) for the project. The Level 1/1a will then able to see the level of participation of the HER and Museum and select the appropriate one. This will also allow the system to record if there is no HER operating or museum collecting archives for their project area.

11.4.3.5. Automated report validation
The HERALD survey indicated that one of the most valued aspects of the OASIS system was the archiving and dissemination of reports through the Grey Literature Library (GLL). The volume of reports submitted has increased each year and in order to make reports available online more quickly, the bulk of this process should be automated. The flow diagram below shows the proposed process of archiving and dissemination for a report uploaded to OASIS.

When the file is uploaded it will undergo a number of checks. In the first instance there will be a readability check to see that the file is not corrupt. The contents will then be checked to see that it matches the report details entered in the form. Then it will be processed to extract subject terms from the report to reduce the data entry burden on the user. These extracted terms will then be reviewed by the user and any irrelevant ones omitted. If enough of the rest of the OASIS form has been completed, the bibliographic record to describe the report will be entered into the ADS Library. A DOI will be minted for the report and passed back to the user. The report itself will also be made available in the ADS Library if it passes three other checks:

- The file type submitted is suitable for automated archiving
- The HER has reviewed the report (or is not holding reports for review)
- There is no embargo period set on the report

If one or more of these criteria has not been satisfied, then the report will be held until it is. If an HER is unable to sign off the report within a time period (e.g. a month) then the report will automatically be made available with a note saying it has not been reviewed by the HER. There will always be reports that will not be suitable for automated archiving due to file type or content so some reports will have delayed upload for this reason.
11.4.3.6. **Report checking and subject/period term extraction tool**

One issue with processing reports automatically is allowing the wrong report to be attached to a record and that report to go all the way through to the ADS Library. This is currently checked as part of the validation process. In order to make the validation process less onerous/necessary there are some automated checks that can be performed on report files. The information entered on the OASIS form for the report title, authors, grid reference, dates will be looked in the report file and where it is not located it will request that the user double check that the correct file has been uploaded. This check is necessary as the technology will not be full proof.

A second process will then be performed using Natural Language Processing and pattern matching to identify terms from the linked data vocabularies available from heritagedata.org such as the FISH Thesaurus of Monument Types. These will then be displayed to the user who can select to use them in the OASIS record or not as required. It is hoped that this will have three benefits - to speed up the entry of subject and period terms for a record, increase the comprehensiveness of subject terms and also encourage the use of the vocabularies rather than free text.

11.4.3.7. **Research framework section**

The new research framework section of the OASIS form will allow the user to enter the research outcomes of the project and it will use other information on the form to preselect which research frameworks are relevant for the project i.e. a project in Northamptonshire would be added to the East Midlands Research Framework.

If the brief or WSI for the project had specified particular research framework section which would be addressed by the project then this section of the form would allow the entry of that information as well. In time it may be possible to do this from a pick list of sections in published research frameworks.

**Figure 3: Proposed process for automated archiving of reports**
11.4.3.8. Archive interface
The current OASIS form does allow the contractors to enter the location, accession numbers and contents of the archive but many contractors do not fill this section in. One reason for this is that the information is not passed on directly to museums and archives. The HERALD survey and a workshop with museum curators in October 2015 gave very positive feedback to museum involvement in OASIS but the response group was not large.

The new system will change the way the data is collected to make it easier to enter and will allow museums to participate and receive notifications from the OASIS system to say when archive information has been entered. The exact format of how this will be collected has yet to be decided but will be done in consultation with the Society for Museum Archaeologists (SMA). One of the main items to be decided here is whether to record the bulk of the archive information as part of a web form or to allow contractors to upload information using the museums’ archive notification forms. The archive section will store the current location of archive elements and the intended future location if that is different. The new form will also allow contractors, HERs and Museums to enter notes on the process of the archive preparation and deposition which would be available to all parties will access to the record.

11.4.3.9. SMA map Integration
The SMA archaeological collection areas database is currently available as part of an ADS archive (http://archaeologydataservice.ac.uk/archives/view/sma_map/) and supplies information on which Museums collect archives for different areas around the country. It also contains contact information and whether the museum is accepting archives and also if there is an archaeological curator there. This database receives periodic updates via the SMA. Incorporating this information in the OASIS system would allow the appropriate museum for archiving a project to be assigned according to the project location and linking it to the museum profile pages would allow users easy access to the collections policy of the museum and information on their participation level in OASIS. It would also provide a means for the museums/OASIS support to keep the data updated via the OASIS profile interface rather than waiting for a bulk upload by ADS staff. The information kept up to date by the OASIS system would then be fed back to the public facing interface in the in the archive.

11.4.4. OASIS PLUS: Module interfaces (event specific pages)
11.4.4.1. Geophysics (part of the Historic Environment Scotland bid)
The inclusion of the geophysics module will continue in the new version of the OASIS system and funding has been sought (but is unconfirmed) from Historic Environment Scotland for this. The data from this section will also go into the Geophysical Survey Database (http://archaeologydataservice.ac.uk/archives/view/ehgsdb_eh_2011/). The intention is to use more controlled vocabularies in this section of the form to attempt to create more uniform records.

11.4.4.2. Historic building recording
There will be a module which covers historic building recording. It will contain the normal OASIS fields which are relevant to the recording of this type of event with controlled lists which are also event specific. There is the possibility for it to also collect other data specific to historic building recording and this is the subject of a consultation with Historic England, Institute of Historic Buildings Conservators, Vernacular Architecture Group, Architectural History Group, Society for the protection of Ancient Buildings. Additional fields will be subject to where the data collected would then be used.

11.4.4.3. Aerial investigations recording
Under discussion with Historic England

11.4.4.4. Remote sensing recording
Under discussion with Historic England

11.4.4.5. Landscape survey recording
Under discussion with Historic England
11.4.4.6. **Radiocarbon date recording**

This module is conceptually different from those above as this is not directly related to an event but to additional analysis undertaken on material produced by an event. As such this section would allow the recording of any radiocarbon dates associated with the event. The fields collected would be those needed to populate the Archaeological Site Index to Radiocarbon Dates from Great Britain and Ireland ([http://dx.doi.org/10.5284/1017767](http://dx.doi.org/10.5284/1017767)) and data collected in this way would be transferred into that database.

These are the fields currently collected by the Archaeological Site Index to Radiocarbon Dates from Great Britain and Ireland ([http://dx.doi.org/10.5284/1017767](http://dx.doi.org/10.5284/1017767)).

- **Sample Id** (always specified in format: "Radiocarbon date, Sample number XXX-xxxx")
- **Minimum and Maximum Dates** (the date range given by one standard deviation)
- **Date** (the radiocarbon data for the sample quoted according to the "Libby" half-life for carbon-14, that is, 5568 +/- 30 years, plus error term equivalent to plus or minus one standard deviation)
- **Lab Name** (the name of the Radiocarbon Dating Laboratory which supplied the date)
- **Source** (either the CBA Index, the ORAU database, or Cherry Lavell (CL))
- **Archaeologist** (the name(s) of the archaeologist(s) who submitted the sample for dating)
- **OS Grid letter, Easting and Northing** (given in standard Ordnance Survey National Grid Reference format, when known)
- **Abstract and Report** (these fields make up description of the sample and the site it came from)
- **Type** (using the subject classification devised by Cherry Lavell for British Archaeological Abstracts)
- **Period** (text description using the usual periods)
- **References** (bibliographic references associated with the publication of the date)

11.4.4.7. **BABAO or Osteoarchaeology module**

The BABAO or osteoarchaeology module would record information about any human remains found as part of an event and would be used to populate a Geophysical Survey style database for Osteoarchaeology.

The data to be collected is under discussion but current suggestions are:

- No. of articulated skeletons
- No. of disarticulated skeletons
- No. of cremations
- No. of adults
- No. of subadults
- No. of males
- No. of females
- No. of Males/ Females (Unidentifiable)

11.4.5. **Integrations**

11.4.5.1. **Import**
Figure 4: Import Process

The import will allow users (Levels 1, 2 and 3) to import OASIS records or parts of OASIS records directly into the system. There will be two methods of importing records into OASIS:

1. Via an import page - a manual import via a spreadsheet or text file upload (a template could be downloaded and populated). The import would then be checked and confirmed. This would be more appropriate for small scale organisations who do not have a project management database or HER database with network access.

2. A more automated import via an API from an external system such as an HER database, museum collections system or contractor’s project management system. This would be appropriate for large scale organisations that do many transfers to OASIS and have a networked project management system/HER.

11.4.5.2. Export

A user would be able to download or export records, they could choose what format they would like the download in: csv, spreadsheet, PDF or OASIS / MIDAS XML, and also if they would like to download the reports alongside the OASIS records. There might also be the possibility of a Level 2+ user having a bespoke export set up but this would be integrated with their in-house system.

11.4.5.3. Synchronisation Interface

As an extension to the API there will be a sub project running alongside the main HERALD development to look into creating a system which will allow HERs to synchronise the data in the HER with the data in an OASIS record. The idea being that the HER would be able to see the HER record for a project alongside the OASIS record for a project and that the user would be able to choose the elements of each record that would be combined to create the definitive record. This synchronised record would then be transferred to the HER and OASIS. In OASIS it would form the most recent version of the OASIS record (keeping previous versions as well). The HER could have the ability to preselect the fields they would take from each record type to speed up transfer time.

The development of this pilot synchronisation tool will require the cooperation of two HERs (one using HBSMR and another bespoke system) in order to create a tool that will fulfil the needs of the HER users. The HERs would need funding to develop the necessary enhancements to their current system.

This synchronisation tool will allow OASIS to fulfil its primary objective of increasing the efficiency of data supply to HERs.

11.4.5.4. OASIS API for import/export and synchronisation

The OASIS API will be a means of interacting with the OASIS programmatically from other external systems. Essentially it will let records be directly uploaded to OASIS and downloaded from OASIS from external systems such as those held by Level 1, 2 and 3 users (contractors, HERs and museums). Level 4 and 5 users will be able to download records using the API as well. The exact functionality of the API will be defined during the development of the project and in discussion with users.
11.4.5.5. **OAI-PMH Target**
An OAI-PMH target exists for the current OASIS system and allows access for some users to the data in OASIS (records which are signed off and complete). i.e. The MEDIN portal harvests maritime records from the system. This will be recreated for the new system and will incorporate any additional fields within the system.

11.4.5.6. **RESTful Web service**
A RESTful web service exists for the current OASIS system and allows systems such as ADS easy, Discovery and Excavation in Scotland and the Scottish C14 administration system to access OASIS records in order to aid the data entry of preproject metadata in these external systems. This will be recreated for the new system and will incorporate any additional fields within the system.
11.4.5.7. **ADS Library (BIAB/GLL) export link**

On completion of the report upload and automated checking (see section 11.4.3.6) the user will be shown a preview of the record which will be made available to the public via the ADS Library, see Figure 5. This will give the user (usually Level 1/1a) to see what will be used to reference their report and correct any errors.

If there is no report uploaded OASIS will prompt the user to enter the details of the project report and the DOI if it is available online elsewhere. The user will see a preview of the report details before they are transferred to the ADS Library. The date of transfer would be recorded in the OASIS record.

11.4.5.8. **Automated digital preservation of report**

Automating the process of preservation for reports uploaded to the OASIS system will increase the speed at which these reports will be available in the public domain. The current OASIS system requires the manual archiving of reports and although some of the transfer process is automated it still has to be done in batches by a digital archivist. It will be possible in the new system to automate preservation for a large percentage of reports. Not all will be able to be automated due to the range of file types uploaded and the complexity of some files. These are the processes which will be automated:

- Transfer of the report file from OASIS system to ADS servers
- Creation of file level metadata
- Documentation of received file in ADS Collections Management System (CMS)
- Conversion of the file to PDF/A (from PDF or DOCX file)
- Validation of PDF/A file to ensure it conforms to preservation standards
- Documentation of preservation process in ADS CMS
- Copy of file to preservation server area
- Copy of file to dissemination server area
- Minting of DOI for report
- Addition of DOI to ADS Library (BIAB/GLL) (the main ADS Library record will have been entered on completion of OASIS record).

Reports which are not embargoed or awaiting review by HER and are uploaded to OASIS as suitable file types should be available via the ADS Library shortly after upload. The date of transfer would be recorded in the OASIS record.

11.4.5.9. **Research framework export/link**

Where the research framework section of the OASIS form has included reference to particular sections of a specific research framework it would transfer the details of that project to the project team responsible for that research framework. Where the research framework is online as a wiki it would be possible to push this information to a ‘recent additions’ page on the wiki. Where it is not online the details can be emailed to the project team. The date of transfer would be recorded in the OASIS record.

11.4.5.10. **Radiocarbon Index export/link**

The information entered into the OASIS PLUS module for radiocarbon dates will be transferred to the Archaeological Site Index to Radiocarbon Dates from Great Britain and Ireland (http://dx.doi.org/10.5284/1017767). This would be an automated transfer on completion of sufficient data in the OASIS record to populate the Radiocarbon Index record. The date of transfer would be recorded in the OASIS record.

11.4.5.11. **Geophysical survey database export/link**

The current OASIS system has a semi-automated transfer of records to the Geophysical Survey Database (http://archaeologydataservice.ac.uk/archives/view/ehgsdb_eh_2011/). This is done in batches which usually coincide with the transfer of reports to the Grey literature library. In the new system the record would be transferred to the
Geophysical Survey Database on completion of sufficient data in the OASIS record. The date of transfer would be recorded in the OASIS record.

11.4.5.12. Link to ADS Easy for archiving
The system would allow the Level 1/1a users to link from a completed OASIS record to the ADS Easy system in order to submit their project’s digital files for preservation. This link would use the information already entered in the OASIS system to populate the project metadata for the archive. This would be similar to the functionality currently available for the OASIS Images archiving agreement and that functionality would be expanded in the new system.

11.5. Scenarios
These scenarios are not exclusive; one finding of the HERALD survey was that the current OASIS system does not have the flexibility of workflows that are required by the different local authorities and fieldworkers. The scenarios below cover the most common workflows represented in the HERALD survey but others could also fit within the redeveloped OASIS system.

11.5.1. Scenario 1 – Contractor starts a record
An employee, Joe Bloggs from An Example Archaeological Unit registers for OASIS. He enters his details and the details of his company and then goes on to start an event record for an evaluation. At the start of that event record he enters the project event type and location and selects the appropriate HER from a short list and the Museum that will take the small archive from the evaluation. He is able to check on how the local HER and Museum use OASIS from details on the form. He finds that the local HER likes fieldworkers to get an HER number and start an OASIS record as soon as they start a project and then return to it later to fill in the rest after the fieldwork is completed.

The evaluation is finished and Joe’s colleague (Jon Digger) needs to complete the event record on OASIS. He also registers as a user in OASIS with his own details and selects An Example as his organisation. Joe is notified of this and approves Jon’s membership with his organisation in OASIS. Jon then logs in and sees all An Examples’ projects. Jon goes on to complete the OASIS record and upload the evaluation report. He is notified to say that Anne Hero at the local HER has opted to hold reports for approval before they can go online in the ADS Library (BIAB/GLL) but that a record for the report is now online and will have a Digital Object Identifier (DOI) added when the report is added.

Jon has also entered details of the archive on the archive section of OASIS and is able to upload a museum’s archive notification form that he downloaded from the museum’s information page on the OASIS wiki. He also enters the expected deposition date and a note to the museum about the archive contents as well.

Jon and Joe receive weekly updates on their projects in OASIS, in that they learn that the report has been reviewed by the HER and is now available in the ADS Library (BIAB/GLL) and that there is a message waiting for them from Anne Curator about their archive deposition request. They click on a link and view and answer the message.

The archive deposition date arrives and the archive is deposited at the Museum. The Anne Curator approves the deposition and Anne Hero at the HER and planning department are notified.

The national heritage organisation1 could be notified at various points in the process as they require, but the most likely points would be when the core fields of the record are complete and the report is uploaded. There will be other update points available such as when a record is created, when a previously completed record is updated such as by the addition of a specialist report.

11.5.2. Scenario 2 – The HER starts a record for a contractor
This situation is similar to the one above in that the HER like to know about fieldwork or projects that are taking place in their area before they start.

1 National heritage organisation refers to the organisation who would issue the final sign off of a record within the OASIS system. At present these organisations are Historic England, RCAHMS, and RCAHMW but in future could include other organisations as appropriate.
Anne Hero of Blankshire HER has been notified of an excavation in her area and has created a skeleton HER record for it consisting of the project title, the event type, the location and the organisation undertaking the work. This is automatically given a number in the HER. When Anne has finished she presses a button in the HER called 'Transfer to OASIS' which does just that. It creates a record in OASIS with the details from the HER and then produces an OASIS Id which is passed back to the HER.

Next the fieldworker who has done the excavation, Joe Bloggs (for it is he) logs in to OASIS. He enters the event type and location of the excavation as if starting a new project in OASIS. He is told that the HER in this area starts the OASIS records and is shown a map of projects in the area which have yet to be retrieved by an organisation. He finds his project, selects it and goes on to complete the rest of the record and uploads the report.

The HER is notified (by a daily or weekly notification email) and can then download the rest of the OASIS record direct into the skeleton HER record created earlier (via the synchronisation tool) and check through the report. Once the report has been reviewed (validated) the HER ticks a box (either in the HER or in OASIS) and the report is released into the ADS Library (BIAB/GLL).

The rest of the museum and national heritage organisation interaction is the same as Scenario 1 (Section 11.5.1).

11.5.3. Scenario 3: OASIS LITE

The two examples above demonstrate what is provisionally called OASIS STANDARD where the HER is participating in OASIS and wants to hold reports for review before they are available to the public. They are also both examples of where the HER expects an OASIS record to be created at the start of the project. This is not the case in many areas and creates one of the most common workflow issues. This duplication of effort happens as the record has been created separately in two places; the HER and OASIS.

Archaeologist Joe Bloggs is doing another small excavation in a county nearby. He logs on to OASIS and looks up the HER for this new area. It turns out that the HER doesn’t participate in OASIS but does recommend that fieldworkers complete the OASIS form. Joe is used to using OASIS and likes his reports to go online in the ADS Library (BIAB/GLL) so he fills in a record and uploads the report. As he uploaded the report as a PDF it was able to be archived and included in the ADS Library (BIAB/GLL) automatically and appears online with its DOI the same day. There is a note on the record saying that the report has not been reviewed by the HER.

The museum for this area is participating and Joe notifies the museum via the OASIS archive section as usual, using the archive notes section to answer queries on the archive deposition.

The national heritage organisation also accesses the information in the normal way.

11.5.4. Scenario 4: HER holding reports for review

Regardless of the level of record the HER requires in OASIS: LITE or STANDARD, they are able to choose to hold reports for review or not. It is a widely acknowledged issue with the current OASIS system that reports can be held indefinitely when an HER does not validate the records and allow the reports to go online.

Anne Hero at Blankshire HER would like to be able to check all the reports that are going through OASIS but she also receives a hard copy version from the planning department when they sign off a project. She works from the hard copy version as it is easier for her and she knows it is the approved version of the report (sometimes draft versions are submitted to OASIS). She finds that her workload doesn’t always let her check and sign off reports in good time and so after a month of waiting the reports go online automatically so that contractors do not become disenfranchised with the system. There is a note on the record saying that the report has not been reviewed by the HER.
Anne Hero finds that she has a backlog of data to record in her HER and although she had been creating records in the HER and only using the LITE version of OASIS. She would like to switch to OASIS STANDARD for a while so that she can work on her backlog. That way she can download and import the OASIS records and import the full records into her HER. She gets in touch with the OASIS helpdesk to ask how hard this importing would be for her type of HER.

11.5.5. Scenario 5: Museum not accepting archives / not participating

The survey results and workshop indicate that museums are keen to participate in OASIS. However, only a small number of museums answered the survey or participated in the workshop and not all museums will need to use OASIS (as some have good deposition communication systems in place already), some museums are not accepting archives and others do not have the resource to participate. So OASIS will have a mechanism to accommodate these situations. The OASIS system will use the current data from the SMA collections areas database and map to show which museums are collecting archives and which are not.

So, Jon Digger logs on to enter a record into OASIS, he enters the location of the project and is shown the HER and Museums which cover the location. The Museums page will let him select a Museum and it will highlight the status of each Museum (whether it is collecting or not and if it is participating in OASIS).

When Jon gets to the archive details page of OASIS he will not be able to fill in an expected deposition date or request an accession number (these will have been greyed out for the non-collecting museum) but he will be able to enter the current location of the archive and brief information on the contents and volume. This data can then be collated and reported to interested parties.

If the Museum is not participating, the Museum details pages will hold information on the museums preferred contact details. These can be taken from the SMA database if not supplied by the museum itself.

11.5.6. Scenario 6: Specialists uploading reports and OASIS PLUS

Post-excavation specialists have expressed an interest in being able to upload their reports to OASIS and therefore into the ADS Library (BIAB/GLL). In order for this to work well, they need to be able to link their report to the project in OASIS which it relates to.

An Osteoarchaeologist Keith Bones has completed a report on some human remains from one of Joe Bloggs’ excavations. He would like to upload the report to OASIS and registers as a new user with his own organisation of Bones by Bones. He then selects the option to find an existing project and he hasn’t got the OASIS id to hand (the easiest way of finding a record) but does know the location and puts that in. He identifies the project and uploads the report, saying that it is an osteoarchaeology report. He is then asked to fill in a little extra osteoarchaeology specific metadata as part of an OASIS PLUS module which goes on to populate the BABAO database.

The contractor, HER and national heritage organisation are notified if they have chosen to be and the report is then uploaded to the ADS Library (BIAB/GLL) and automatically archived and uploaded if the format of the report allows.

11.5.7. Scenario 7: Research frameworks

Additional fields have been added to the OASIS form for the new system but the extra information must be passed on and used by other systems as OASIS is not a data repository in itself. The new data to be collected to inform research frameworks is a good example of this.

Joe Bloggs is filling in a record for an excavation and he reaches the research outcomes section. The brief/WSI for the project mentioned particular research framework questions that may be answered. Joe is shown the questions which are relevant to his project, answers them and enters a short paragraph on the research outcomes of the project. He then goes on to complete the rest of the OASIS record as normal.

The research outcomes for the project are then sent to the appropriate research framework group via the research framework wiki. Periodically those outcomes can be collated and used to update the content of the frameworks.
11.6. BIAB
Following the BIAB Stage 1: Strategic vision project (Gilham, J. and Matthews, L., 2015) BIAB will be transferred to the ADS and redeveloped with the Library of Unpublished Fieldwork Reports (Grey Literature Library - GLL) and other bibliographic resources and publications archived at the ADS to form the new ADS Library. This library has the working title of ADS Library, incorporating BIAB and GLL.

11.7. The new database structure
The current database will be digitally preserved and then the data from it will be copied into a new database schema which incorporates the data from BIAB and the GLL. This new schema will combine the structure from the two systems making the GLL records more bibliographically flexible and adding the possibility of collecting locational information for BIAB records. The records from the current databases will undergo enhancement as they are transferred to the new system to map subject and period terms to heritagedata.org vocabularies and have locational data extracted from current abstracts where available. There is an additional project hoping to be funded to enhance Scottish records by concording data between BIAB and CANMORE. It is possible that tools from that project could be used in the future to do a similar exercise in England.

11.8. Search Interface
The main way into the ADS Library will be a search interface that will allow users to search for records according to title, author, date and publisher/organisation. It will also allow users to search on subject and period terms and location although it is to be noted that this information will not be available for all records within the database. Users will be able to register and login via the current myADS interface and save their searches within the ADS library and download citation information and DOI links to the actual publications where available.

Users who log in will also be able to enhance the dataset for others and:

1. add comments to bibliographic records to enhance their usefulness
2. tag records to further classify records

11.9. How BIAB and the ADS Library would continue to be updated
The BIAB dataset will remain live and be updated from a number of sources as part of the ADS Library. There will both automated and manual mechanisms for updating it and this will ensure that records are available from the main archaeological publishers for both monographs and journals but also that smaller journals and regional publications and newsletter will have a means for being included in the ADS Library as well.

11.9.1. Automated ingest of bibliographic records
The automated updates to the dataset would include:

1. Fieldwork reports from OASIS would be uploaded and made available via BIAB/ADS Library
2. New ADS archived journal articles would be made available via BIAB/ADS Library
3. New ADS archives with reports would also be made available via BIAB/ADS Library
4. Records and abstracts for journal articles would be supplied by some of the larger publishers
5. Records and abstracts for new publications from archaeological publishers such as BAR and Oxbow

Methods 4 and 5 above are dependent on the continued agreement of the publishers involved and the different levels of possible participation are variable with the specifics yet to be agreed.

This would mean that the BIAB dataset would remain a current up to date resource for finding the more mainstream archaeological publications. One major change to the data made available will be that it will not be possible to limit it to solely cover Great Britain and Ireland. The data supplied automatically by publishers does not consistently contain enough geographic information to ensure this.
11.9.2. Manual addition and updating of bibliographic records

The interface will be built to allow users to enhance the dataset as well as it being updated automatically by larger publishers. This will allow the addition of the smaller and regional publications which are valued by the current BIAB user community and not available through other sources. Access could be promoted for smaller publishers so that they could update their own publications through the ADS Library (BIAB/GLL).

In addition to a normal logged in user, a power user (probably a smaller publisher or approved volunteer) could:
1. Amend incorrect records
2. Add abstracts to records which do not have them
3. Add new records - allowing smaller journals and newsletters to be added to ADS Library (BIAB/GLL)

This option would allow for future specialist bibliographic projects to be realised through the BIAB system rather than creating separate offline resources for each project. This would also allow the system to accommodate paid freelance abstractors as in the current BIAB business model if funding was available. The use of paid abstractors would allow BIAB to continue to be populated consistently.

If required it would also be possible to allow the batch upload of records to BIAB from trusted sources from a text or XML file.

11.10. Where data from OASIS will be used

Here is a list of types of organisation or specific databases which will be fed information by OASIS:

- HER databases in England and Scotland
- ADS Library (BIAB/GLL)
- Geophysical Survey database
- Archaeological Site Index to Radiocarbon Dates from Great Britain and Ireland [http://dx.doi.org/10.5284/1017767](http://dx.doi.org/10.5284/1017767)
- MEDIN portal (and data.gov)
- ADS Easy e-archiving system (including OASIS Images)
- Scottish C14 Administration system
- ADS ArchSearch
- Research Frameworks
- Research projects

This list is not complete.

12. Stages, Products and Tasks

12.1. Stages

The larger project would be split into three stages;
- Stage 1 (Consultation and redesign period) - completed
- Stage 2 (Technical redevelopment of the form) - to be subject of a separate project design.
- Stage 3 (Testing, roll out, training and support) - to be subject of a separate project design.

This project (PD) concentrates on Stage 2 of this process (Technical redevelopment of the form). The Gantt chart outlines the stages, products and tasks involved in this project over a period of XXX months.

12.2. Products

There will be two main products of this stage of the HERALD project:
1. Redeveloped OASIS system
2. Redeveloped BIAB and GLL system as ADS Library

### 12.3. Tasks

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<th>3</th>
<th>Solution design</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Sitemap finalisation</td>
</tr>
<tr>
<td>3.2</td>
<td>User workflows</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Level 1a - contractors / specialists</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Level 1b - community groups</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Level 2 - HERs</td>
</tr>
<tr>
<td>3.2.4</td>
<td>Level 3 - archives, museums or record offices</td>
</tr>
<tr>
<td>3.2.5</td>
<td>Level 4 - national bodies (HE, HES)</td>
</tr>
<tr>
<td>3.2.6</td>
<td>Level 5 - other data consumers (DES, VAG etc)</td>
</tr>
<tr>
<td>3.2.7</td>
<td>Level 6 - ADS (Admin users)</td>
</tr>
<tr>
<td>3.3</td>
<td>Wireframe creation</td>
</tr>
<tr>
<td>3.4</td>
<td>Finalised functional specification</td>
</tr>
<tr>
<td>3.5</td>
<td>Establish which browsers will be supported</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>System look and feel</td>
</tr>
<tr>
<td>4.2</td>
<td>Data entry form design</td>
</tr>
<tr>
<td>4.3</td>
<td>Content page design template</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Back-end development</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Database design and implementation</td>
</tr>
<tr>
<td>5.1.1</td>
<td>OASIS database</td>
</tr>
<tr>
<td>5.1.2</td>
<td>BIAB database</td>
</tr>
<tr>
<td>5.1.3</td>
<td>SMA archaeological collection areas database</td>
</tr>
<tr>
<td>5.2</td>
<td>Web application architecture and framework</td>
</tr>
<tr>
<td>5.3</td>
<td>Create import to OASIS</td>
</tr>
<tr>
<td>5.4</td>
<td>Create export from OASIS</td>
</tr>
<tr>
<td>5.5</td>
<td>Create OASIS API for synchronisation</td>
</tr>
<tr>
<td>5.6</td>
<td>Create RESTful web service</td>
</tr>
<tr>
<td>5.7</td>
<td>Create OAI-PMH target</td>
</tr>
<tr>
<td>5.8</td>
<td>Create report auto validation tool</td>
</tr>
<tr>
<td>5.9</td>
<td>Create subject/period/location extraction tool</td>
</tr>
<tr>
<td>5.10</td>
<td>Create Research Framework export/link</td>
</tr>
<tr>
<td>5.11</td>
<td>Create BIAB export/link</td>
</tr>
<tr>
<td>5.12</td>
<td>Create Radiocarbon Index export/link</td>
</tr>
<tr>
<td>5.13</td>
<td>Create Geophysical survey database export/link</td>
</tr>
<tr>
<td>5.14</td>
<td>Create link to ORCID</td>
</tr>
<tr>
<td>5.15</td>
<td>Create user and role management</td>
</tr>
<tr>
<td>5.16</td>
<td>Create user editable wiki system</td>
</tr>
</tbody>
</table>

6. **Front-end development**

| 6.1 | Create registration section |
| 6.2 | Create main section |
| 6.3 | Create project summary / management pages |
| 6.4 | Create flexible project location tool |
| 6.5 | Create archive interface |
| 6.6 | Create user/organisation profile sections |
| 6.7 | Create BIAB interface |
| 6.8 | Create synchronisation interface |
| 6.9 | Create export interface |
| 6.10 | Create import interface |
| 6.11 | Create module interfaces |

6.11.1 Historic building recording
6.11.2 Aerial investigations recording
6.11.3 Landscape survey recording
6.11.4 Remote sensing recording
6.11.5 Geophysical survey recording
6.11.6 Radiocarbon date recording

| 6.12 | Create SMA map integration |

7. **Synchronisation pilot**

| 7.1 | Pilot 1 |
| 7.2 | Pilot 2 |

8. **Content entry**

| 8.1 | Create help text |
| 8.2 | Create page content |

9. **Testing**
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>Copy edit content</td>
</tr>
<tr>
<td>9.2</td>
<td>Test on supported browsers</td>
</tr>
<tr>
<td>9.3</td>
<td>Bug fixing</td>
</tr>
<tr>
<td>10</td>
<td>BETA release</td>
</tr>
<tr>
<td>10.1</td>
<td>Collect feedback</td>
</tr>
<tr>
<td>10.2</td>
<td>Bug fixing</td>
</tr>
<tr>
<td>10.3</td>
<td>Act on feedback</td>
</tr>
<tr>
<td>11</td>
<td>Release</td>
</tr>
</tbody>
</table>
13. Ownership

To be decided

14. Risk Log

<table>
<thead>
<tr>
<th>Risk</th>
<th>Probability (1-5)</th>
<th>Severity (1-5)</th>
<th>Score (P x S)</th>
<th>Action to Prevent / Manage risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff are unable to dedicate sufficient time to the project due to existing commitments</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>Effective planning and ongoing prioritisation via regular (weekly and monthly) meetings</td>
</tr>
<tr>
<td>Key staff members leave the ADS</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>A larger team is in place and others could step in if required</td>
</tr>
<tr>
<td>Timescales slip due to unforeseen challenges with technical systems</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>Allow sufficient time for development. Take an agile approach to changing goals</td>
</tr>
<tr>
<td>Timescales slip due to delay in responses from stakeholders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIAS dependencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Estimated Overall Budget
### Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADS Library</strong></td>
<td>The new system which will contain BIAB, the grey literature library, archived journal articles and archived reports</td>
</tr>
<tr>
<td><strong>API</strong></td>
<td>Application programming interface - allows external access to a system programmatically</td>
</tr>
<tr>
<td><strong>BIAB</strong></td>
<td>British and Irish Archaeological Bibliography</td>
</tr>
<tr>
<td><strong>Grey Literature Library (GLL)</strong></td>
<td>The library of unpublished fieldwork reports populated with reports from OASIS and archived reports</td>
</tr>
<tr>
<td><strong>Linked Data Vocabulary</strong></td>
<td>The term used in the new OASIS system for the checking of an OASIS record and associated report</td>
</tr>
<tr>
<td><strong>Review</strong></td>
<td>The point at which a record in the current OASIS system has been validated by both HER and NMR and is decided to be complete</td>
</tr>
<tr>
<td><strong>Sign off</strong></td>
<td>The current term used in OASIS for the checking of an OASIS record and associated report</td>
</tr>
<tr>
<td><strong>Validate</strong></td>
<td>Natural Language Processing</td>
</tr>
<tr>
<td><strong>NLP</strong></td>
<td>Society of Museum Archaeologists</td>
</tr>
</tbody>
</table>

More terms to be added.

### 17. Appendix 1: Health & Safety