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OCCAMS (or Ockham’s) razor — entia non sunt multiplicanda praeter necessitatem — is the principle that the simplest explanation or strategy tends to be the best one.

OCCAMS is an online database tool that aims to address the data management needs of researchers integrating visual and non-visual data. It aims to allow researchers to work on collections collaboratively in a closed environment and then publish the data as either a website or a report. This database has been developed for academics working with visual data such as anthropologists, historians, artists, biographers, archaeologists, environmental scientists and human geographers. Researchers may be generating data themselves or collating data from collections with varying protocols of use and diverse data organising schemes.

OCCAMS is a collaborative research tool for people working with and creating cultural collections. It is an online database that allows people to organise, annotate and link data. The tool’s unique strengths include: the ability to read and write embedded data from media files, batch upload and edit files, geo-spatial mapping, using and developing controlled vocabularies and accommodating for flexible data schemas which can be mapped to specially created data standards. OCCAMS is built on an open source framework, modular in design and utilises existing open source components where possible. Project within OCCAMS however are closed and access is controlled by researchers.

Importantly, OCCAMS is not a tool for replicating another cultural institution’s databases. That said OCCAMS is well positioned to work with cultural institutions in sharing information, keeping in mind that linking and connecting databases is a complicated task. Details about that complexity are discussed in Appendix D: Mapping to Other Databases on page 103.

A BIT OF HISTORY

The system was initially proposed to fulfil the need of researchers at the Australian National University working with cultural collections involving large numbers of digital media files. Researchers needed a collaborative tool that was not simply a Digital Asset Management System, but also a research tool with the ability to restrict access levels, incorporate flexible views and the ability to link and annotate data. OCCAMS is starting to be used by a number of national research projects as their core data management solution. It is also attracting a large amount of interest from the research community. Ongoing dialogue with researchers has been key to OCCAMS’ development, and an important outcome of this process is the integration of
staged forms of data publication. Important for work with sensitive and restricted data, especially relating to Indigenous communities, staged publication also responds to a research environment that requires both collaboration and control over access.
Chapter 1: Preparing Your Assets

This section goes through how to prepare your digital assets (an asset is any kind of digital file you might have such as a document, audio recording, video, or digital photograph). Some users will already have a sound system for organising their assets. For those users, you can skip this section but it is strongly recommended that you read the sections on converting assets to the desired formats, starting on page 11.

Some users however will have their assets spread across multiple sources, USBs, external hard-drives, etc. and will need some suggestions as to how to bring all these sources together. This section starts by suggesting you 1) familiarise yourself with the range of assets you will be working with; 2) suggesting ways of structuring your folders; and 3) special considerations for importing digital images, videos and audio recordings into OCCAMS.

There are two sorts of ‘data’, defined specifically for the purposes of OCCAMS. The first type is file metadata. Metadata is how databases gather information about a file. A ‘file’ is an asset (photograph, audio recording, document, etc.) uploaded into OCCAMS. This file potentially comes with metadata from various sources (e.g. Bridge, Lightroom, digital camera, etc.) and in various formats (e.g. IPTC, XMP, DC terms and core, others.). This manual will cover this in more detail later. The second type of metadata is research metadata. Research metadata is defined as follows:

Understanding 1A: Research metadata is metadata generated for research purposes in the PWS. This metadata is richer, more detailed and can be specifically tailored by the project owner. There is no limit to research metadata and is subject to individual tastes, preferences, definitions and subsequent uses.

Understanding 1B: File metadata and research metadata overlap very infrequently and rarely. Any overlap is completely dependent on the user’s personal and individual preferences.

Understanding 1C: All metadata can be exported from OCCAMS into usable formats (‘reports’) and is compatible with other databases from other institutions.

A database is a great tool for organising material but there are some initial steps that must be taken so that the database is used to its best advantage. You first need to know some basic information about your own data. Asking yourself these questions will help you strategise your use of OCCAMS. Ask yourself: what kinds of data files will you be working with? Examples are included to help guide your thinking.

1. Photographs you have taken (e.g. landscapes, people, artworks, etc.)
2. Photographs others have taken or are related to your research but are not yours
3. Field notebooks
4. Video recordings
5. Audio recordings (e.g. interviews, discussions, lectures, etc.)
6. Musical recordings (e.g. performances, ceremonies, etc.)
7. PDFs, Word and other written documentation
8. Statistical data (e.g. ABS downloads, Excel, etc.)
9. Three-dimensional objects (e.g. paintings, sculptures, artefacts, weapons, etc.)
Structure/Folders
Once you have a good grip on the types of files you are working with, you will need to think about an organisational plan for your data. In order for OCCAMS to be used to its fullest, you need to have a system of organising your data into folders. There are a number of ways to do this. Let’s say you are working with historical photographs spanning a period of decades within the 19th/20th centuries, taken by multiple photographers across several regions.

1. Chronically
   a. 1860-1890s (Date)
      i. Oregon (Region)
         1. Frank G Abell (Photographer)
         2. John C Ainsworth (Photographer)
         3. George B. Abdill (Photographer)
      ii. Seattle, Washington (Region)
         1. E.J. Bailey (Photographer)
   b. 1900-1950 (Date)
      i. Oregon (Region)
         1. Hugh Ackroyd (Photographer)
      ii. Alaska (Region)
         1. C L Andrew (Photographer)

2. Geographically
   a. Oregon
      i. 1860-1890
         1. Frank G Abell (Photographer)
         2. John C Ainsworth (Photographer)
         3. George B. Abdill (Photographer)
      ii. 1900-1950
         1. Hugh Ackroyd (Photographer)
   b. Seattle
      i. 1860-1890
         1. E.J. Bailey (Photographer)
   c. Alaska
      i. 1900-1950
         1. C L Andrew (Photographer)

3. Categorically
   a. Portraits (Category)
      i. 1860-1890
         1. Frank G Abell (Photographer)
         2. John C Ainsworth (Photographer)
      ii. 1900-1950
         1. C L Andrew (Photographer)
   b. Industry (Category)
      i. 1860-1890
         1. George B. Abdill (Photographer)
         2. E.J. Bailey (Photographer)
      ii. 1900-1950
         1. Hugh Ackroyd (Photographer)

You may come up with a way that better suits your data files. Whatever method you choose, if you are consistent and thorough, it will make it that much easier to find the images, documents
and videos you are looking for. **NOTE:** when organising your folders, it is best to name your files as accurately and descriptively as possible as these can be used for the titles of your assets in OCCAMS.

**Converting Assets to Compatable Formats**

It is occasionally necessary to convert your file formats for best viewing, playing and sharing within OCCAMS.

**Photographs**

Digital photographs – either sourced from you or from a cultural institution or another person – need to be in JPEG format. Higher resolution, uncompressed files such as TIFF and RAW are too memory heavy for OCCAMS to handle efficiently. Since most researchers store their photographs in RAW or TIFF form, you will need to convert your images into JPEG formats. Although this sounds laborious, Photoshop can batch convert files from RAW to JPEG and TIFF to JPEG. Steps on how to convert files is included in this manual for your convenience and is located in the Appendices section, page 96, Appendix A: Batch Processing Your Photos in Photoshop.

**Videos**

When preparing your video files for upload into OCCAMS, consideration needs to be given to file format. Currently, OCCAMS supports H.264 format files (the same format required by Vimeo). You can convert film files of nearly every format to a H.264 MP4 file using the open source program Handbreak (found here: [http://handbrake.fr/](http://handbrake.fr/)). This program comes with a set of simple instructions and is very straightforward to use. It also allows batch conversion. To do batch convert, upload a file then press <<Add to Queue>>. Repeat this step for each file you wish to convert. Then press <<Show Queue>>, then <<Start>>, and all your files will be converted in one go.

**Audio**

When uploading a set of Audio files, there are some things to consider when preparing your sound clips. OCCAMS supports 16bit .wav size files and lower. You can upload a 24bit .wav file into OCCAMS, but OCCAMS cannot play it. For ease of both playing and sharing your audio in the Project Workspace, it is suggested that you convert your files to a more appropriate size. It is up to you to decide which file type you convert it into, however the preferred format for OCCAMS is MP3. There are a number of free programs available online for you to convert .wav files to MP3.

One way to convert files is to use the open source audio editing software Audacity. You can download Audacity at [http://audacity.sourceforge.net/download/](http://audacity.sourceforge.net/download/). Audacity allows you to batch convert multiple files for use in OCCAMS and the steps are fairly simple. Please note that if you intend to batch convert .wav files to MP3 using Audacity, you need to also download and install the Lame MP3 encoder (found here: [http://lame.buanzo.org/](http://lame.buanzo.org/)).

1. Open <<Audacity>>
2. Go to <<File – Apply Chains>>
3. Select <<MP3 Conversion>> chain
4. Click <<Apply to Files>>
5. Browse and select a group of files. Audacity will convert all files at once.
The new MP3 files should appear in a new folder entitled ‘cleaned’ which Audacity will put in the same folder as the original files. There are other free MP3 conversion programs available online and this example serves to only illustrate one method.

**MAIN COMPONENTS OF OCCAMS**

There are two interfaces within OCCAMS: the Digital File Library and the Project Workspace. This section talks about the conceptual differences between the two interfaces. These interfaces access assets that in the Digital File Library are called files and in the Project Workspace are called records. The difference in nomenclature is due to the kind of metadata being recorded and will be explained in this section.

**The Digital File Library**

The Digital File Library (DFL) is the repository for assets (digital images, documents, audio/video recordings, etc.). The Library is where you can organise, sort and add – manage – metadata about assets. If you are not using any metadata standards or have inherited digital files that do not have any file metadata attached to them, there is nothing to worry about. You can add this metadata to the file in the DFL. The DFL metadata fields are based on a fusion of metadata schemas such as Adobe XMP metadata, IPTC, Dublin Core and many others. Researchers already working with image metadata can upload and maintain that data into OCCAMS without difficulty. This is because the DFL fields are populated by searching through metadata schemas and locating and populating like fields. The image below illustrates a PDF document and how fields are extrapolated using different ‘rules’.

The standard fields included in the DFL are as follows:

- Title
- Keywords
- Creator
- Description
- Created Date
- Copyright
- Source
- Credit
- Location
- City
- State
- Country
- Description Writer
- Creator Email
- Creator URL
- Creator Telephone
- Creator Position
- Creator Address
- Creator City
- Creator Region
- Creator Country
- Creator Postcode
- GPS Latitude
- GPS Longitude
You certainly do not need to fill in all these fields. However, all of these fields should be populated with respect to the file itself – not the object the file represents. This is an importance difference.

![beaded bracelet](image)

**Figure 1: beaded bracelet**

Figure 1 illustrates a photograph of a beaded bracelet. **File metadata** includes a set of questions about the file itself, such as who took the photograph, where was the photograph taken, when was the photograph taken and so on. This type of file metadata is captured in the Digital File Library. **Research metadata** includes a more expanded set of questions about the object the photograph. For example, research metadata explores who beaded the bracelet, the artist’s cultural background, when the object was made, what materials were used, what techniques were used and any infinite amount of other types of information you might want to capture. This type of research metadata is captured in the Project Workspace. **NOTE:** For the purposes of the DFL, think about the file itself when filling the fields in with information.

**The Project Workspace**

For those who want to do more with their assets, the Project Workspace has been created. The Project Workspace is a place where you can share your assets; it is a space for collaboration and sharing with people you as the project initiator give controlled access to. It can also be a place where you can work alone. Regardless of the number of people who have access to the Project Workspace, you can do much more with your assets than you can in the DFL. You can add other types of data fields, you can customise your fields, and link different types of data. This is an additional level of functionality to OCCAMS.

The Project Workspace is where users organise, access, analyse and discover data. It provides research tools such as annotation for images, documents, video and audio files as well as the creation of categories, a Timemap interface, and the ability to link records. This is the space where you can really explore the cultural material you are researching.

The distinction between the Digital File Library and the Project Workspace is an important one as the Library is where researchers work with digital files, while the Workspace is where you can create virtual collections. The Project Workspace is the place where a conceptual organisation of records reflects a researcher’s interests.
The Record Types

OCCAMS has eleven Record Types to help organise your assets. Each Record Type has its own set of specialised fields for collecting research metadata. They are: Cultural Object, Natural Object, Photographic Object, Video Object, Audio Object, Document, Reference Internet, Person, Organisation, Place and Event.

These eleven types were developed within the existing framework of the industry. Within databases across the world, there is a movement to standardise record types as well as metadata fields. If metadata fields are standardised, then moving from one database to another becomes possible. These types of data categories form the basis upon which OCCAMS’s types are developed and are the proposed standard industry types. Using these standards create levels of interoperability.

For some users, this might be confusing. You might see the categories as ‘arbitrary’ or unnecessary. The standards should be used as a guideline and for a starting point for those wanting to organise their data. OCCAMS has created its own metadata standard based on research done by cultural and visual anthropologists, art historians and archivists all influenced by museum studies, ethnomusicology and databases developed by major institutions for cultural research.

General Layout

Each Record Type has fields organised in a standardised way for consistency. There are seven main sections – modified for each Record Type but fairly similar across all types. They are as follows.

Basic Information
These fields include title, keywords and description. These three fields represent the most basic information about an object.

Author Details
These fields include the creator details, place and date of production as well as director and/or writer if necessary in records such as video.

Technical Aspects
These fields include hard facts about the object such as size and dimension, duration for video, audio and events and techniques and materials for cultural objects. Some consideration of these fields should include standardising the units for these fields however, because each project can vary, OCCAMS leaves such considerations to the project administrator to determine.

Holding Institution
These fields include collection details about objects such as collectors, date collected, holding institutions or individuals and identification numbers.

Copyright Fields
These fields allow for recording two types of copyright information: Creator Copyright and File Copyright. The first is the creator copyright and focuses on the subject of the digital file. For example, most records identified as cultural and photographic objects are digital representations of the actual object subject to research. Examples include photographs of works of art, artefacts, tools, etc. When the focus is on the subject of the photograph – the object – and who created that object, the Creator Copyright was developed to capture that information. However, since many researchers use digital images provided by museums and
other cultural institutions, a field for capturing their copyright interest is also required. In OCCAMS, this is called the “File Copyright”. File copyright is about the ownership of the photograph by the photographer or institution who commissioned the photograph.

**GPS Coordinates**
OCCAMS allows you to capture the longitude and latitude details of where an object was created. There is the option of entering in the coordinates if you have them available or opening up a world map and tagging the location manually.

**Record notes and author**
The last two fields of any record are “Notes” and “OCCAMS Author”. Notes allows for more detailed notes about any aspect of the record type. The OCCAMS Author field allows you to identify the author of the record if there are multiple people working on a project. If you have need for adding more Notes fields, you are encouraged to add as many as you would like. There is no word limit to the Notes field.

The follow pages detail the Record Types and their associated specialised fields. These fields come standard with each Record Type but can be modified according to project research needs with some exceptions to be discussed (see Customising Record Types on page 66). Reviewing these Record Types will help you conceptualise your data so it is well worth doing at the beginning stages of a project.

NOTE: At the end of some Record Types is a small table explaining the colour symbolism of some of the highlighted rows. The table and coloured rows are there to help guide users on the metadata mapping protocols within OCCAMS (to be discussed starting on page 37).
Cultural Object
Basic Definition: An object someone has made that has significance

Extended Discussion: Cultural objects are defined as those objects that have been created or manipulated by people. This Record Type is one of the most diverse in OCCAMS. It can include: paintings, weavings, sculptures and body adornment. It can also include weapons, ceremonial objects and every day objects like baskets, mats and tools. Cultural objects can be canoes or structures. Cultural objects – like other record types – can be sourced from collecting institutions or from private collectors. They can be researcher photos of objects but if the photograph itself is of research importance – for example a photograph from 1937 taken by an anthropologist in the field – than the best record type would be Photographic Record Type (see page 18).

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the object</td>
</tr>
<tr>
<td>Creator of Object</td>
<td>The creator of the object [artist, painter, sculptor, etc.]</td>
</tr>
<tr>
<td>Date Created</td>
<td>The date the object was created</td>
</tr>
<tr>
<td>Place Created</td>
<td>The place where the object was created</td>
</tr>
<tr>
<td>Object Type</td>
<td>The type of object [basket, painting, sculpture, adornment etc.]</td>
</tr>
<tr>
<td>Dimensions</td>
<td>The physical dimensions of the object [width x length x height]</td>
</tr>
<tr>
<td>Measurement Unit</td>
<td>The unit of measurement [inches, centimetres, metres, yards, etc.]</td>
</tr>
<tr>
<td>Material</td>
<td>The material make-up of the object</td>
</tr>
<tr>
<td>Technique</td>
<td>The type of technique used to make the object [weaving, carving, painting-acrylic, painting-oil, linoprint, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: file</td>
<td>The individual or institution who currently holds this file in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: file Identifier</td>
<td>The institution identifying number for the file [file number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: object</td>
<td>The individual or institution who currently holds this object in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: object Identifier</td>
<td>The institution identifying number for the object [object number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Collector</td>
<td>The name of the collector</td>
</tr>
<tr>
<td>Date Collected</td>
<td>The date the collector obtained the object</td>
</tr>
<tr>
<td>Place Collected</td>
<td>The place in which the object was collected</td>
</tr>
<tr>
<td>Creator Copyright</td>
<td>Creator or estate copyright of the object</td>
</tr>
<tr>
<td>File Copyright</td>
<td>The individual or institutional copyright of the file</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place the object was created or collected</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the place the object was created or collected</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

Mapping Notes: Standard mapping rules apply
Natural Object

Basic Definition: an object that is not made but has significance.

Extended Discussion: Natural objects are those objects such as ochres, stones, plant material, fossils, shells, pearls, corals, horn/antler, animal hair and any number of naturally made objects. This Record Type can also be used to document sensitive materials such as skeletal remains.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the object</td>
</tr>
<tr>
<td>Attributed To</td>
<td>The group or people attributed to the object [Indigenous tribe, language group, etc.]</td>
</tr>
<tr>
<td>Place of Origin</td>
<td>The location from where the object originally came</td>
</tr>
<tr>
<td>Age of Object</td>
<td>The age of the object [approx, years, period, etc.]</td>
</tr>
<tr>
<td>Object Type</td>
<td>The type of object [ochre, shell, bone, plant material, etc.]</td>
</tr>
<tr>
<td>Material</td>
<td>The material make-up of the object</td>
</tr>
<tr>
<td>Dimensions</td>
<td>The physical dimensions of the object [width x length x height]</td>
</tr>
<tr>
<td>Measurement Unit</td>
<td>The unit of measurement [inches, centimetres, metres, yards, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: file</td>
<td>The individual or institution who currently holds this file in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: file Identifier</td>
<td>The institution identifying number for the file [file number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: object Identifier</td>
<td>The institution identifying number for the object [object number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Collector</td>
<td>The name of the collector</td>
</tr>
<tr>
<td>Date Collected</td>
<td>The date the collector obtained the object</td>
</tr>
<tr>
<td>Place Collected</td>
<td>The place in which the object was collected</td>
</tr>
<tr>
<td>Object Copyright</td>
<td>Object copyright [source community, cultural copyright, etc.]</td>
</tr>
<tr>
<td>File Copyright</td>
<td>The individual or institutional copyright of the file</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place the object was originated</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the place the object was originated</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

Mapping Notes: There are no ‘creator’ fields in this Record and as such, Basic Extended 1 mapping rule is not available.

Basic Extended 1: Assumes user has used ‘Creator’ as the Creator of the Object. If the user has used Creator as the Creator of the file, this mapping between the DPL and the PWS should not be used (see Basic Extended 2). Along with the Creator of the Object, Creation Date and Creator Copyright details are included.

Basic Extended 2: Assumes user has used ‘Creator’ as the Creator of the File or Institution/Holder: File. If user has used Creator as the Creator of the Object, this mapping between the DPL and the PWS should not be used (see Basic Extended 1). Along with the Creator of the File - Institution/Holder, File Copyright details are included.

Basic Extended 3: Assumes user has used ‘Location’ as the location of where the object was made. If the user has used location to mark some other spatial relationship, then this mapping between the DPL and the PWS should not be used. Along with Production Place (or equivalent), Latitude and Longitude coordinates are also mapped.
**Photographic Object**

**Basic Definition:** photographs sourced from researchers, collaborators, collectors and/or institutions

**Extended Discussion:** Photographic objects are intended for documenting those photographs where the research interest lies equally between the subject of the photograph and the photograph itself. Examples of such photographs include historical, ethnographic, documentary, film stills and family photographs.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the photograph</td>
</tr>
<tr>
<td>Photographer</td>
<td>The photographer's name</td>
</tr>
<tr>
<td>Date Photographed</td>
<td>The date the photograph was taken</td>
</tr>
<tr>
<td>Place Photographed</td>
<td>The place where the photograph was taken</td>
</tr>
<tr>
<td>File Format</td>
<td>The format of the photographic file [photo of a print, scan of a print]</td>
</tr>
<tr>
<td>Original File Format</td>
<td>The original technique of the photograph [kirklian, stereoscopic, daguerrotype, lantern slide, plate (collodion, etc.)]</td>
</tr>
<tr>
<td>Colour Condition</td>
<td>The colour condition of the photograph [colour, black and white, sepia, faded, etc.]</td>
</tr>
<tr>
<td>Dimensions</td>
<td>The physical dimensions of the object [width x length x height]</td>
</tr>
<tr>
<td>Measurement Unit</td>
<td>The unit of measurement [inches, centimetres, metres, yards, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: file</td>
<td>The individual or institution who currently holds this file in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: file Identifier</td>
<td>The institution identifying number for the file [file number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: object</td>
<td>The individual or institution who currently holds this object in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: object Identifier</td>
<td>The institution identifying number for the object [object number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Collector</td>
<td>The name of the collector</td>
</tr>
<tr>
<td>Date Collected</td>
<td>The date the collector obtained the object</td>
</tr>
<tr>
<td>Place Collected</td>
<td>The place in which the object was collected</td>
</tr>
<tr>
<td>Creator Copyright</td>
<td>Creator or estate copyright of the object</td>
</tr>
<tr>
<td>File Copyright</td>
<td>The individual or institutional copyright of the file</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place the object was created</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the place the object was created</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

**Mapping Notes:** Standard mapping rules apply

- **Basic Extended 1:** Assumes user has used ‘Creator’ as the Creator of the Object. If the user has used Creator as the Creator of the file, this mapping between the DPL and the PWS should not be used (see Basic Extended 2). Along with the Creator of the Object, Creation Date and Creator Copyright details are included.
- **Basic Extended 2:** Assumes user has used ‘Creator’ as the Creator of the File or Institution/Holdr: File. If user has used Creator as the Creator of the Object, this mapping between the DPL and the PWS should not be used (see Basic Extended 1). Along with the Creator of the File - Institution/Holdr, File Copyright details are included.
- **Basic Extended 3:** Assumes user has used ‘Location’ as the location of where the object was made. If the user has used location to mark some other spatial relationship, then this mapping between the DPL and the PWS should not be used. Along with Production Place (or equivalent), Latitude and Longitude coordinates are also mapped.
## Video Object

**Basic Definition:** video sourced from researchers, collaborators, collectors and/or institutions.

**Extended Discussion:** Video objects are those files with moving images. Video objects can be historical, ethnographic, documentary, family/private and film. Due to the wide variety of video object types, there are a number of metadata fields needed to accommodate this diversity.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description or summary of the video</td>
</tr>
<tr>
<td>Creator of Film Object</td>
<td>The person who instigated and carried out the filming [researcher, cinematographer, director].</td>
</tr>
<tr>
<td>Place Filmed</td>
<td>The location where the film was made</td>
</tr>
<tr>
<td>Date Filmed</td>
<td>The date the film was shot</td>
</tr>
<tr>
<td>Director</td>
<td>The director</td>
</tr>
<tr>
<td>Writer</td>
<td>The writer</td>
</tr>
<tr>
<td>Film Crew</td>
<td>The details of other relevant personnel [camera, sound, etc.]</td>
</tr>
<tr>
<td>Participants</td>
<td>The participants in the film [people, actors, etc.]</td>
</tr>
<tr>
<td>File Format</td>
<td>The format of the film file [mp4, mov, etc.]</td>
</tr>
<tr>
<td>Language</td>
<td>The language the film is made in</td>
</tr>
<tr>
<td>Subtitles</td>
<td>The details about the subtitles [‘yes – English’, ‘yes – Yolngu Matha’, etc.]</td>
</tr>
<tr>
<td>Translator/interpreter</td>
<td>The translator or interpreter who either features in the film and/or worked on subtitles</td>
</tr>
<tr>
<td>Medium</td>
<td>The medium of the video [VHS, digital, film, digitised VHS, etc.]</td>
</tr>
<tr>
<td>Previous Medium(s)</td>
<td>The details about any alterations to the video object [reel to reel, etc.]</td>
</tr>
<tr>
<td>Duration</td>
<td>The duration of the video (hh:mm:ss)</td>
</tr>
<tr>
<td>Colour</td>
<td>A field for adding the details about the colour quality. E.g. black &amp; white, colour, faded etc.</td>
</tr>
<tr>
<td>Series Details</td>
<td>The series details [series, season, episode, etc.]</td>
</tr>
<tr>
<td>Genre</td>
<td>The genre [documentary, ethnography, fieldwork etc.]</td>
</tr>
<tr>
<td>Aspect Ratio</td>
<td>The aspect ratio details</td>
</tr>
<tr>
<td>Equipment Used</td>
<td>The type of equipment used to create the video</td>
</tr>
<tr>
<td>Production Place</td>
<td>The place the video was edited, colouring, etc.</td>
</tr>
<tr>
<td>Date Produced</td>
<td>The date the video was made</td>
</tr>
<tr>
<td>Institution/Holder: file</td>
<td>The individual or institution who currently holds this file in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: file Identifier</td>
<td>The institution identifying number for the file [file number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: object</td>
<td>The individual or institution who currently holds this object in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: object Identifier</td>
<td>The institution identifying number for the object [object number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Collector</td>
<td>The collector</td>
</tr>
<tr>
<td>Date Collected</td>
<td>The date collected</td>
</tr>
<tr>
<td>Creator Copyright</td>
<td>Creator or estate copyright of the object</td>
</tr>
<tr>
<td>File Copyright</td>
<td>The individual or institutional copyright of the file</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place the object was filmed</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the place the object was filmed</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

**Mapping Notes:** Standard mapping rules apply

<table>
<thead>
<tr>
<th>Basic</th>
<th>Title, Keywords &amp; Description only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Extended 1</td>
<td>Assumes user has used 'Creator' as the Creator of the Object. If the user has used Creator as the Creator of the file, this mapping between the DFL and the PWS should not be used (see Basic Extended 2). Along with the Creator of the Object, Creation Date and Creator Copyright details are included.</td>
</tr>
<tr>
<td>Basic Extended 2</td>
<td>Assumes user has used 'Creator' as the Creator of the File or Institution/Holder: File. If user has used Creator as the Creator of the Object, this mapping between the DFL and the PWS should not be used (see Basic Extended 1). Along with the Creator of the File - Institution/Holder: File Copyright details are included.</td>
</tr>
<tr>
<td>Basic Extended 3</td>
<td>Assumes user has used 'Location' as the location of where the object was made. If the user has used location to mark some other spatial relationship, then this mapping between the DFL and the PWS should not be used. Along with Production Place (or equivalent), Latitude and Longitude coordinates are also mapped.</td>
</tr>
</tbody>
</table>
**Audio Object**

*Basic Definition:* audio sourced from researchers, collaborators, collectors and/or institutions.

*Extended Discussion:* Audio Objects, like Video Objects, have to accommodate a wide variety of mediums and types. Audio objects can include taped interviews and recordings of songs as well as published and private material. The fields for Audio Objects have been developed with this diversity in mind.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the audio</td>
</tr>
<tr>
<td>Creator of Audio</td>
<td>The creator of the audio [singer, speaker, performer, etc.]</td>
</tr>
<tr>
<td>Sound Recorder</td>
<td>The person who recorded the file</td>
</tr>
<tr>
<td>Date Recorded</td>
<td>The date the audio was recorded</td>
</tr>
<tr>
<td>Place Recorded</td>
<td>The place where the audio was recorded</td>
</tr>
<tr>
<td>Producer</td>
<td>The producer of the audio</td>
</tr>
<tr>
<td>Interviewer</td>
<td>The person conducting the interview</td>
</tr>
<tr>
<td>Interviewee</td>
<td>The person being interviewed</td>
</tr>
<tr>
<td>Participants</td>
<td>People participating in or present during the recording</td>
</tr>
<tr>
<td>File Format</td>
<td>The file format [MP3, 16bit WAV, etc.]</td>
</tr>
<tr>
<td>Original File Format</td>
<td>A field for adding any alterations done to the original file format [digitised reel to reel, downsized for OCCAMS use, etc.]</td>
</tr>
<tr>
<td>Duration</td>
<td>Duration of audio [hh:mm:ss]</td>
</tr>
<tr>
<td>Genre</td>
<td>The genre of the audio [interview, musical recording, etc.]</td>
</tr>
<tr>
<td>Equipment Used</td>
<td>The type of equipment used to create the audio [type of recorder used, settings used and/or type of microphone used]</td>
</tr>
<tr>
<td>Language(s)</td>
<td>The language(s) the audio is made in</td>
</tr>
<tr>
<td>Transcription Type</td>
<td>The type of transcription [musical transcriptions, lyrics or interview transcripts, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: file</td>
<td>The individual or institution who currently holds this file in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: file Identifier</td>
<td>The institution identifying number for the file [file number, ascension number, IRN number, etc.]</td>
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<tr>
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<tr>
<td>File Copyright</td>
<td>The individual or institutional copyright of the file</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place where the audio recording was made</td>
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<tr>
<td>Longitude</td>
<td>The Longitude of the place where the audio recording was made</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
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<tr>
<td>OCCAMs Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>
**Mapping Notes:** Standard mapping rules apply

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</thead>
<tbody>
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</tr>
<tr>
<td>Basic Extended 2</td>
<td>Assummes user has used 'Creator' as the Creator of the File or Institution/Holder. File. If user has used Creator as the Creator of the Object, this mapping between the DFL and the PWS should not be used (see Basic Extended 1). Along with the Creator of the File - Institution/Holder, File Copyright details are included.</td>
</tr>
<tr>
<td>Basic Extended 3</td>
<td>Assummes user has used 'Location' as the location of where the object was made. If the user has used location to mark some other spatial relationship, then this mapping between the DFL and the PWS should not be used. Along with Production Place (or equivalent), Latitude and Longitude coordinates are also mapped.</td>
</tr>
</tbody>
</table>
**Document**

**Basic Definition:** a document of significance.

**Extended Discussion:** Document Record Type is provided for researchers to upload, annotate and link research documents within a project. Documents can be scanned historical records, published articles of interest, field notes or printouts from cultural institutions. There is really no limit to what the Document can contain as long as it is in a Word or PDF format. Fields for Documents have been designed with published and private document production details in mind.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description or abstract of the document</td>
</tr>
<tr>
<td>Author(s)</td>
<td>The author(s) of the document</td>
</tr>
<tr>
<td>Date Created</td>
<td>The date the document was written</td>
</tr>
<tr>
<td>Document Type</td>
<td>The type of document [Word, Excel, PowerPoint, etc.]</td>
</tr>
<tr>
<td>Language</td>
<td>The language the document is in or language in the document needing to be highlighted</td>
</tr>
<tr>
<td>File Size</td>
<td>The file size of the document</td>
</tr>
<tr>
<td>Source</td>
<td>The source of the document [a government website, a location, a museum archive, etc.]</td>
</tr>
<tr>
<td>Publisher</td>
<td>The publisher of the document</td>
</tr>
<tr>
<td>Date Published</td>
<td>The date the document was published</td>
</tr>
<tr>
<td>Institution/Holder: file</td>
<td>The individual or institution who currently holds this file in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: file Identifier</td>
<td>The institution identifying number for the file [file number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Institution/Holder: object</td>
<td>The individual or institution who currently holds this object in their collection/care</td>
</tr>
<tr>
<td>Institution/Holder: object Identifier</td>
<td>The institution identifying number for the object [object number, ascension number, IRN number, etc.]</td>
</tr>
<tr>
<td>Collector</td>
<td>The collector of the document</td>
</tr>
<tr>
<td>Date Collected</td>
<td>The date collected</td>
</tr>
<tr>
<td>Place Collected</td>
<td>The place where the document was collected</td>
</tr>
<tr>
<td>Creator Copyright</td>
<td>Creator or estate copyright of the object</td>
</tr>
<tr>
<td>File Copyright</td>
<td>The individual or institutional copyright of the file</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude from where the document originated</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude from where the document originated</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

**Mapping Notes:** In this instance, instead of location being where the document was created, the location details about these record types is used to note the location of collection (e.g. field notes).

<table>
<thead>
<tr>
<th>Basic</th>
<th>Title, Keywords &amp; Description only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Extended 1</td>
<td>Assumes user has used &quot;Creator&quot; as the Creator of the Object. If the user has used Creator as the Creator of the file, this mapping between the DFL and the PWS should not be used (see Basic Extended 2). Along with the Creator of the Object, Creation Date and Creator Copyright details are included.</td>
</tr>
<tr>
<td>Basic Extended 2</td>
<td>Assumes user has used &quot;Creator&quot; as the Creator of the File or InstitutionHolder: File. If user has used Creator as the Creator of the Object, this mapping between the DFL and the PWS should not be used (see Basic Extended 1). Along with the Creator of the File - InstitutionHolder: File Copyright details are included.</td>
</tr>
<tr>
<td>Basic Extended 3</td>
<td>Assumes user has used &quot;Location&quot; as the location of where the object was made. If the user has used location to mark some other spatial relationship, then this mapping between the DFL and the PWS should not be used. Along with Production Place (or equivalent), Latitude and Longitude coordinates are also mapped.</td>
</tr>
</tbody>
</table>
The following Record Types are special to the Project Workspace. These types are created in the Project Workspace but can be treated like any other digital file in that they can be related to other records and customised for specific project needs.

**Reference Internet**

*Basic Definition:* an Internet reference of significance.

*Extended Discussion:* An Internet record was created to capture information about site of significance to the research project. For example, these records can include links and details to website containing material collection information or other types of resource sites such as specialised dictionaries, government and community websites.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title of the website</td>
</tr>
<tr>
<td>URL</td>
<td>The URL</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the website [content relevant to the project]</td>
</tr>
<tr>
<td>Owner</td>
<td>The owner of the website [a government department, community group, etc.]</td>
</tr>
<tr>
<td>Author</td>
<td>The author of the website -- if available</td>
</tr>
<tr>
<td>Language</td>
<td>The language used in the reference</td>
</tr>
<tr>
<td>Accessed Date</td>
<td>The date the website was accessed</td>
</tr>
<tr>
<td>Last Modified Date</td>
<td>The date when the website was last modified</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the object</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

*Mapping Notes:*  
This record is created in the Project Workspace and does not require mapping from the Digital File Library.
Person
Basic Definition: a person of significance. E.g. a collector, a collaborator etc.

Extended Discussion: This record type is to capture information about a person of research interest. This could be a research partner, historical figure or anyone else.

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given Names</td>
<td>The person's first and middle names</td>
</tr>
<tr>
<td>Family Name</td>
<td>The family name</td>
</tr>
<tr>
<td>Preferred Name</td>
<td>Preferred names</td>
</tr>
<tr>
<td>Alternative Name(s)</td>
<td>Alternative names</td>
</tr>
<tr>
<td>Title</td>
<td>Professional title  [Mr, Miss, Ms, Doctor, etc.]</td>
</tr>
<tr>
<td>Position</td>
<td>Job title</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The significance of this person to the project</td>
</tr>
<tr>
<td>Biography</td>
<td>A brief biography of this person</td>
</tr>
<tr>
<td>Date of Birth</td>
<td>Date of birth</td>
</tr>
<tr>
<td>Place of Birth</td>
<td>The place of birth</td>
</tr>
<tr>
<td>Date of Death</td>
<td>Date of death</td>
</tr>
<tr>
<td>Place of Death</td>
<td>Place of death</td>
</tr>
<tr>
<td>Institution Affiliation</td>
<td>Place of work or main association</td>
</tr>
<tr>
<td>Contact Details – Phone</td>
<td>Telephone number</td>
</tr>
<tr>
<td>Contact Details – Email</td>
<td>Email address</td>
</tr>
<tr>
<td>Contact Details - Address</td>
<td>Physical Mailing Address</td>
</tr>
<tr>
<td>Source</td>
<td>Source of information [website, database, collaborator, etc.]</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the person's significance</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

Mapping Notes:
This record is created in the Project Workspace and does not require mapping from the Digital File Library.
**Organisation**

*Basic Definition:* an organisation of significance.

*Extended Discussion:* This record type is to capture information about an organisation of research interest. This could be a research partner, historical organisation such as a mission or a government agency.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the organisation</td>
</tr>
<tr>
<td>Acronym</td>
<td>The acronym of the organisation</td>
</tr>
<tr>
<td>Additional Names</td>
<td>Additional or alternative names the organisation might have traded or been known by</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the organisation</td>
</tr>
<tr>
<td>Address</td>
<td>The address</td>
</tr>
<tr>
<td>Telephone</td>
<td>The telephone number</td>
</tr>
<tr>
<td>Fax</td>
<td>The fax number</td>
</tr>
<tr>
<td>URL</td>
<td>The URL</td>
</tr>
<tr>
<td>Email</td>
<td>The main email address</td>
</tr>
<tr>
<td>Organisation Type</td>
<td>The type of organisation [incorporated, limited liability, public, private, etc.]</td>
</tr>
<tr>
<td>Contact Person</td>
<td>The main contact person for the organisation</td>
</tr>
<tr>
<td>Persons</td>
<td>People of interest within the organisation</td>
</tr>
<tr>
<td>Year Established</td>
<td>The year of establishment</td>
</tr>
<tr>
<td>Year Dissolved</td>
<td>The year of dissolution</td>
</tr>
<tr>
<td>Parent Company</td>
<td>The parent company</td>
</tr>
<tr>
<td>Government Association</td>
<td>A field for adding the details of any government association</td>
</tr>
<tr>
<td>Religious Association</td>
<td>A field for adding the details of any religious association</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the organisation</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the organisation</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the organisation</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

*Mapping Notes:*
This record is created in the Project Workspace and does not require mapping from the Digital File Library.
**Place**

*Basic Definition:* a place of significance.

*Extended Discussion:* Place records can include any place of significance such as a place of ceremony or ritual. The fields were developed to capture both specific and contextual information about place records.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the place</td>
</tr>
<tr>
<td>Alternative Spellings</td>
<td>Any alternative spellings of the place</td>
</tr>
<tr>
<td>Alternative Names</td>
<td>Additional or alternative names of the place</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The detailed description of the place [lakes, valleys, major features, etc.]</td>
</tr>
<tr>
<td>Significance</td>
<td>The significance of the place</td>
</tr>
<tr>
<td>Larger Geographic Context</td>
<td>Description of the larger region, culture or area of consideration</td>
</tr>
<tr>
<td>Attributed To</td>
<td>Describes the relationship between place and people</td>
</tr>
<tr>
<td>Place Type</td>
<td>The type of place [ceremonial, own, natural feature, etc.]</td>
</tr>
<tr>
<td>Area</td>
<td>The area of the place [square metres, square miles, etc.]</td>
</tr>
<tr>
<td>Established</td>
<td>The date of establishment - if applicable</td>
</tr>
<tr>
<td>Abandoned</td>
<td>The date of abandonment - if applicable</td>
</tr>
<tr>
<td>District/County</td>
<td>The district or county of the place</td>
</tr>
<tr>
<td>State/Province</td>
<td>The state or province</td>
</tr>
<tr>
<td>Country</td>
<td>The country</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the place</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the place</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

*Mapping Notes:*  
This record is created in the Project Workspace and does not require mapping from the Digital File Library.
**Event**  
*Basic Definition:* an event of significance.

**Extended Discussion:** Event records are meant to record events, performances, rituals, ceremonies or holidays of research interest. The fields for this record have been developed to detail events that last for more than one day as well as shorter, more ephemeral events.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The title of the event</td>
</tr>
<tr>
<td>Keywords</td>
<td>Project keywords</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the event</td>
</tr>
<tr>
<td>Participants</td>
<td>The people involved in the event</td>
</tr>
<tr>
<td>Type of Event</td>
<td>The type of event [performance, ceremony, demonstration, etc.]</td>
</tr>
<tr>
<td>Significance</td>
<td>The significance of the event</td>
</tr>
<tr>
<td>Start Date</td>
<td>The start date of the event</td>
</tr>
<tr>
<td>End Date</td>
<td>The end date of the event</td>
</tr>
<tr>
<td>Duration</td>
<td>The duration of the event</td>
</tr>
<tr>
<td>Producer(s)</td>
<td>The producers of the event</td>
</tr>
<tr>
<td>Location(s)</td>
<td>The location(s) the event took place</td>
</tr>
<tr>
<td>Organisations</td>
<td>The organisations involved in the event</td>
</tr>
<tr>
<td>Latitude</td>
<td>The Latitude of the place of the most significant location</td>
</tr>
<tr>
<td>Longitude</td>
<td>The Longitude of the place of the most significant location</td>
</tr>
<tr>
<td>Notes</td>
<td>A notes field for more description and/or analysis of the event</td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td>The OCCAMS project person who entered in the data</td>
</tr>
</tbody>
</table>

**Mapping Notes:**  
This record is created in the Project Workspace and does not require mapping from the Digital File Library.

Now that you are familiar with the Record Types and have prepped your data for OCCAMS, you are now ready to start using the database.
OCCAMS WORKFLOWS

A workflow is a suggested order of operations. It depends on the kind of assets with which you are working. There are two main types of workflows although creative users might come up with or need to use alternative workflows. Each research project is different and OCCAMS was created to accommodate different approaches.

**Basic Workflow – DFL to PWS**

This workflow is illustrated above and begins by adding assets to the Digital File Library and then moving them into the Project Workspace where there a number of research tools available for adding even more research data.

1. Required: an existing collection of digital assets (e.g. photos, videos, recordings, documents).
2. Upload assets into the Digital File Library
3. Add – if desired – file metadata
4. Transfer the assets from the Library to the Project Workspace
5. Add research data using more advanced fields especially developed for cultural materials
6. Records can now be linked and/or related to each other
7. Researchers can be invited to work with the records as well

**Reverse Workflow – PWS to DFL**

This workflow offers up another option for using OCCAMS. This workflow begins by adding assets to the Project Workspace and then linking records to existing files in the Digital File Library.

Working with multiple records option A:

1. Individually create a single record or multiple records
2. Records in the Project Workspace are linked to files already imported in the Digital File Library
3. Add research data using more advanced fields especially developed for cultural materials
4. Records can now be linked and/or related to each other
5. Researchers can be invited to work with the records as well
Working with multiple records option B:
1. Required: an excel spread sheet either from cultural institutions or developed independently that contains research metadata about the assets
2. Send spread sheet to an OCCAMS systems administrator
3. Systems admin uploads the spread sheet in the Project Workspace as records
4. Records in the Project Workspace are linked to files already imported in the Digital File Library
5. Add research data using more advanced fields especially developed for cultural materials
6. Records can now be linked and/or related to each other
7. Researchers can be invited to work with the records as well

Reverse Workflow with multiple records – operating off of an excel spread sheet – should be used in consultation with an OCCAMS systems administrator. This manual is set out with the Basic Workflow – DFL to PWS in mind. It is divided into two sections: the Digital File Library and the Project Workspace. There are a number of additional features that are addressed towards the end of each section.
Chapter 2: The Digital File Library

LOGGING INTO OCCAMS
Logging into OCCAMS is easy. Request a user name and password from the OCCAMS administrator (email: cdhr@anu.edu.au). Simply type those details into the home screen as illustrated below and hit the <<Login>> button.

![OCCAMS login interface](image)

The home page of OCCAMS is laid out with a tool bar across the top and the two major portals in the centre of the screen. There is also a Help portal for your convenience. You can access the Digital File Library by clicking on either link as exampled. The same is true for the Project Workspace and Help pages.

![OCCAMS home page](image)
The Digital File Library homepage will appear as below. The next section will discuss the basic functions of the DFL in the order of operations. This will be the bare minimum you will need to do in order to utilise OCCAMS. The next section will discuss the additional functions within the DFL.

**BASIC FUNCTIONS**
The basic order of operations that will be covered in this first section are: creating directories, uploading digital files and editing file metadata. Additional features are covered afterwards.

**New Dir**
Directories or folders help organise your digital files. You can add as many directories as you need – as many as it takes to organise your data and for you to find it. Click on <<New Dir>> to begin.

![New Dir](image)

You will be given a pop up dialogue box as in the below screen shot. Type in the name of the directory. Underscores are used for optimum database maintenance but you can use regular spacing if you like. Try to avoid full stops ‘.’ as those can be confused with file types (e.g. ‘.jpeg’ or ‘.docx’, etc.)
When you are finished, just hit the green tick button and your new directory will be created. If you change your mind, the <<X>> button (both on the top and bottom of the dialogue box) will exit you from this action.

You can create sub-directories by making sure the parent directory is highlighted and repeating the above steps.

Directories can be moved if they later become subdirectories if your organisation hierarchy changes. Moving directories is discussed on page 49.

**Upload from Computer**

Once you have your directories created, you can start populating them with your digital files. This is done using the Upload function. Clicking on <<Upload>>, you get a drop down menu as illustrated below. The basic workflow assumes you are uploading from the computer. For discussion on uploading from remote servers, see page 45.
The <<From Computer>> option is like any upload option you would have used before. The dialogue box that pops up has a 'Browse' feature that allows you access into your computer files. You can monitor the number of files, the size of those files and the progress of the upload.

Clicking the <<Options>> button shows the size limit per file and any special settings you might need to add.

Once you have selected your files, click on <<Upload to Server>> to complete the process. You can upload hundreds of files at a time but be aware that the more you upload at a time, the longer it takes to complete the process.
Once completed, a populated Digital File Library may look like the image below. The DFL ‘remembers’ the last folder you worked on and prioritises it to the top – making your folders occasionally look out of order.

Thumbnails in OCCAMS look as follows for each of the four major digital file types.

**Metadata Editor**

Once you have uploaded your digital files, you have the option of adding information about those files. Metadata editor allows you to edit the file metadata. This function can be accessed in the main toolbar or as an option in the Open In… drop down menu.
The Metadata Editor opens up to this screen, allowing you to populate the fields with information about the file. As discussed previously, the file metadata is about the file – not the object or cultural asset the file represents. Thus, the creator of this file is the photographer, not the weaver of the basket (as in this example).

If for example, you inherit or have documented assets that list the creator as the maker of an object and not the photographer of the object, do not worry as OCCAMS is able to account for this when information is moved from the DFL to the PW.

One of the most useful features of the Metadata Editor is the ability to make the file name the title of the file. This is done by clicking on <<Set file name(s) as record Title(s)>> (circled). When you have moved this file into the Project Workspace, the title will travel with it and saves you from having to add it manually.

You can also batch edit the metadata of several files at once. This is done by selecting the files and opening the Metadata Editor. The view changes slightly as below.

The fields will appear blank – whether they have data in them or not. It will be important for you to know exactly what fields need populating when editing multiple files. Type in the common information (for example, keywords or copyright details, etc.). NOTE: In order for the data to be
added, you **must** tick the small square positioned at the bottom right hand corner. If you do not tick the square, the data will not be added.

One of the added features of the DFL is the ability to add latitude and longitude details. This is generally used to indicate where an object was created and OCCAMS assumes this is the case. On the Metadata Editor page, scroll all the way down and you’ll see the fields for lat/long information. Click on <<Locate on Map>>.

A map will appear that will allow you to zoom in to any part of the world where the object was made. This is the same as any Internet map interface you will be familiar with.
Once you have zoomed into the appropriate location, click on where you want to drop a pin and it will appear with the lat/long coordinates. If you need to move the pin to somewhere else, you can at any time. When you are satisfied with where the pin is, click on <<Update Coordinates>>.

You will be brought back to the Metadata Editor window. Click on <<Save>> and the details will be added.

Mapping between the DFL and the Project Workspace
These next steps will take you through how to move assets from the Library to the Project Workspace. ‘Mapping’ is the concept of taking the file metadata of assets in the DFL and matching those fields with appropriate the fields in the Project Workspace. The purpose of this is to limit the amount of typing; metadata available in the DFL is made available in the PWS. An important point of consideration is that not all fields match. For example, file metadata such as ‘Creator Email’, ‘Creator URL’, address, city, region, etc. are not considered research metadata. When mapping an asset from the DFL to the PWS, such metadata is not lost, nor is it invisible in the PWS. It is viewable but simply not editable.

Creating a Project
In order to move files into the Project Workspace, you must have already created a project. Navigate to the OCCAMS homepage by clicking on the <<Home>> link at the top of the toolbar.
The homepage will appear as below. Click on the <<Project Workspace>> at either of the two options indicated.

At the top left hand corner of the homepage of the Project Workspace, the action panel has the option to <<Create a new project>>. Click on this link.

This action will take you to the “create a new project” page. Simply fill in the information below, noting that only the Project Name and Description are required fields to populate. As the project creator, you are considered the Owner. Date Created and Modified are automatically populated. Click <<Save>> and you will have created your own project. All this information is editable and is described on page 65. You are now ready to move assets from the DFL to the PWS.
There are four mapping rules that are predefined for users. In previous versions of OCCAMS, fields were manually mapped and this required a lot of effort on the user as each mapping exercise required users to move each field – there was no ‘memory’ of mapping preferences. Now, it is simply clicking on the rules that apply to your assets and the metadata you want to move from the DFL to the PWS. Moving assets from the DFL to the PWS changes them in terminology from ‘files’ to ‘records’.

Only six record types can be mapped from the DFL to the PWS. Those record types are: Cultural Object, Natural Object, Photographic Object, Video Object, Audio Object and Document Object. When mapping, make sure all the fields you need are populated with data. Once a file is moved from the DFL to the PWS, any future moves will create duplicates. You can always add any missing data in the PWS afterwards if any changes are required.

Finally, mapping is one way from the DFL to the PWS. You cannot map from the PWS to the DFL.

**Basic**

The basic mapping rule is a requirement for all assets moving from the DFL to the PWS. This rule maps the title, keywords and description of the asset. If these fields are blank, the file name will be used for the title, while keywords and descriptions are left blank.

In the small table at the base Cultural Object, Natural Object, Photographic Object, Video Object, Audio Object and Document Object, this mapping rule is highlighted in green. On the pages introducing the record types, those fields populated with data from the DFL are highlighted in green.

**Extended 1**

The Extended 1 mapping rule assumes the user has used ‘Creator’ as the Creator of the Object. If the user has used Creator as the Creator of the file, this mapping between the DFL and the PWS should not be used (see Basic Extended 2). Along with the Creator of the Object, Creation Date and Creator Copyright details are included.
In the small table at the base Cultural Object, Natural Object, Photographic Object, Video Object, Audio Object and Document Object, this mapping rule is highlighted in blue. On the pages introducing the record types, those fields populated with data from the DFL are highlighted in blue.

**Extended 2**

The Extended 2 mapping rule assumes the user has used ‘Creator’ as the Creator of the Object. If the user has used Creator as the Creator of the file, this mapping between the DFL and the PWS should not be used (see Basic Extended 2). Along with the Creator of the Object, Creation Date and Creator Copyright details are included.

In the small table at the base Cultural Object, Natural Object, Photographic Object, Video Object, Audio Object and Document Object, this mapping rule is highlighted in violet. On the pages introducing the record types, those fields populated with data from the DFL are highlighted in violet.

**Extended 3**

The Extended 3 mapping rule assumes the user has used ‘Location’ as the location of where the object was made. If the user has used location to mark some other spatial relationship, then this mapping between the DFL and the PWS should not be used. Along with Production Place (or equivalent), Latitude and Longitude coordinates are also mapped.

In the small table at the base Cultural Object, Natural Object, Photographic Object, Video Object, Audio Object and Document Object, this mapping rule is highlighted in orange. On the pages introducing the record types, those fields populated with data from the DFL are highlighted in orange.

The actual process of mapping is as follows. First, highlight the files you want to move. Make sure they are all of a type. For example, you need to select all the documents or all the video or all the cultural objects. If you mix the selection, the fields will not map properly. After you have selected the files, click the <<Import>> button as shown.
A screen like below will appear. This screen is the mapping screen and shows the list of objects selected and the crosswalk for mapping assets.

First, choose your project. If you have multiple projects created, you can select any one of them. If you only have one project, the default will be that project. OCCAMS will also remember the last project you selected.

Second, select the record type you want to map on to. OCCAMS can anticipate document, video and audio files but cannot differentiate between cultural, natural or photographic objects. To the database, all these files are just ‘digital images’. You will need to select which type of record you are mapping on.

Finally, you need to choose your mapping rules, as outlined above.

**Importing Only Files**
The mapping rules take an asset from the DFL to the PWS – from a file to a record. If for example you have multiple views of an object, you may want to avoid having multiple records as they would all have essentially the same research metadata. There is also the concern of having so many records as to become unwieldy. For example, if you are working with 10 sculptures but have 20 photographs of each work, you are suddenly working with 200 records instead of 10. To avoid this, you can move assets from the DFL to the PWS as files only. Once imported as files, these assets can be linked to records as alternative views (to be discussed on page 52).
The steps are the same as above with a few exceptions. First, you can select a mix of assets (documents, videos or digital images) as they are not being mapped. You do not have to select the project. After importing, the file will be visible and/or linkable to people have file read/write permission in PWS. The record type will also not need to be selected as the file itself is just being made visible and linkable in the PWS. Just click on <<Import File>>. You will have successfully moved the files over as files.

**ADDITIONAL FUNCTIONS**

There are additional functions featured in the DFL. This section will go through these in more detail. First, the parts of the DFL are laid out as below.

On the left hand side of your Digital File Library home screen are login details.
Working from right to left along the Action/Tool bar, additional functions within in the DFL are described next.

**Left Pane Visibility**
This feature hides the _Folder_ and _Metadata Preview Windows_. This creates a bigger screen area for your _File Preview Window_ as illustrated.

[Before (top) and after (bottom) views when using the Left Pane Visibility feature.]
**Display**
Changes the File Preview Window from thumbnails to list or from list to thumbnails.

**Upload From Remote Server**
If you have assets on an external HTTP server, you can upload them into the DFL. Simply type in the URL and hit the green tick button.

**Download**
Download allows you to take a digital file from OCCAMS and export it onto your computer while maintaining the metadata attached to it.

**Open In...**
This function allows you to open a digital file in different views and in different applications.
**Image Preview**

Image preview opens the image for viewing the file metadata while being able to zoom in and out of the chosen image. **NOTE:** this view can also be accessed by clicking on the file (either in thumbnail or list view).

There are several features found in Image Preview. On the right hand column, the entire thumbnail of the image is illustrated with the red square indicating the area zoomed in. Below that thumbnail is the file metadata. The darker grey bar to the left of the thumbnail allows you to scroll down and view more metadata. **NOTE:** This panel can disappear if the description of the file exceeds 100 words. This is easily retrievable by moving your cursor to the far left of the screen and dragging the panel back into view.

The tool bar at the base of the main image provides further features, as detailed below.
Import Editor

Import Editor maps file metadata and associated image file into the Project Workspace. This function can also be accessed in the main toolbar. This function will be discussed in more detail on page 37 under “One of the added features of the DFL is the ability to add latitude and longitude details. This is generally used to indicate where an object was created and OCCAMS assumes this is the case. On the Metadata Editor page, scroll all the way down and you'll see the fields for lat/long information. Click on <<Locate on Map>>.

A map will appear that will allow you to zoom in to any part of the world where the object was made. This is the same as any Internet map interface you will be familiar with.
Once you have zoomed into the appropriate location, click on where you want to drop a pin and it will appear with the lat/long coordinates. If you need to move the pin to somewhere else, you can at any time. When you are satisfied with where the pin is, click on <<Update Coordinates>>.

You will be brought back to the Metadata Editor window. Click on <<Save>> and the details will be added.

Mapping between the DFL and the Project Workspace.

**Exif Reader**
This function is currently unavailable.
External Window
This feature opens up another internet tab in order to view the image.

Choose Other...
This feature allows you to open the image in an application of your choice. (In development)

Share
Share allows you to set the access rights to folders. Permissions in OCCAMS – both within the DFL and the PWS – are explained in their own section. See page 89 for more detailed information.

Rename
Rename allows you to rename the file. Note that this is different from the ‘title’ you might give the object. For example, if you want to keep the file name from an Institution identification number such as ‘IRN12345’ but you want to title the object ‘Painting Clouds’, you have the option of doing so. Changing the name of the file does not change the title of the asset.

Copy
Copy allows you to make a copy of a file.

Move
Move allows you to move files from one director/folder to another. You can also do this manually by dragging the selected files to the desired directory/folder.

Delete
Deletes a selected file or files
Chapter 3: The Project Workspace

The Project Workspace’s home page looks as shown above. Other projects currently in OCCAMS are visible by title (obscured in the manual for privacy). You may see other people’s project titles but unless you are given access to those projects, you cannot access them. What you will see on the left panel is a list called “My Projects”. This is a quick way to navigate to your project. Either click on the My Projects link or the link in the main Project Workspace panel to access your project.

Files from the DFL are Records in the PWS. The homepage of your project will look like this when you have populated it with the various kinds of files from the DFL. There are four ways of viewing your records in the homepage: by Record Type, by Thumbnails, in List view, via Timemap and by Timemap with spatial coverage.

This section of the manual is divided into three parts: Basic Research Tools, Advanced Research Tools and Manage Project.
BASIC RESEARCH TOOLS
There is no particular order of operations for the Project Workspace. Within the Project Workspace, there are several research tools at your disposal. The PWS was designed to be flexible for researchers. This section describes the basic research tools: editing research metadata, linking files, relating records, annotating records and using the Timemap features. Additional and more advanced tools are discussed in the section following this one.

Clicking on the folder <<Cultural Object>> reveals all records that have been imported.

Editing Research Metadata
You can edit research metadata by either clicking on the thumbnail of the object or the name of the object. This allows you to edit the metadata as well as link and relate records and annotate the current record.
Linking Files
As discussed in the DFL section of the manual (see page 42), assets can be sent over to the PWS as files only. This is enable you to link multiple files to a single record and thus share the research metadata. This feature is most commonly used when showing detailed views of the same object. First, open up a record so that you are in the edit record page.

You are already in the <<Linked files>> tab. Just click on <<Add [+]>.

You will directed to a page showing your folders in the Digital File Library. Only those files that you have sent over as files or files that you have sent over as records will be visible. Navigate to your desired files by clicking on the folder.
Opening your folder will give you a view of all the files you have available. Select all if required or simply select the individual files as illustrated. Afterwards, click on <<Link to record>>.
Your linked images will appear as illustrated. This view allows you to see the object in various views, in a single record, while not duplicating the metadata. You can also select each one individually for annotation.

The top image – the image showing the complete view of the object – is the parent image. The parent image is the vortex around which linked and related documents revolve. The relation is based on the make-up of the parent image.

Parent image are the first images in the list and the thumbnails in the Project Workspace.

If you initially work with a partial image and then later get a more complete image, you can change the parent image so that the desired view of an object is prioritised. The example below shows a detail as the parent image and the complete photo below. To change this, click on the <<Edit/Delete Link>> of the image you want as the parent image.
On this page, you can either delete the link altogether (remove the file from the record) or set the file as the parent image by ticking the box “Set as primary linked image”.

Hit <<Save>> and the new image will be set to the top of the screen and made the thumbnail in the PWS.

Relating Records
Related records are those other records that entail a different set of research metadata but are related in some way to the parent record. Examples of potential related records include: current museum photographs of objects and historical photographs of that same object; video about a place and photographs of that same place; paintings by an artist and the photograph of that artist; documents about an object or artist, audio recordings that talk about the object, artist or place; and any imaginable combination of relations between cultural objects, the people who made them and the places, events and histories that entail them.

The example that will be used for Relating Records is a cuff that is based on a historical basket. I want to show the relationship between the two objects. Other examples of Related Records could be (but are not limited to):

- A set of records in the same collection
- A set of records created by the same person
- A set of records in the same exhibition
- A set of records used to tell the same story
- A set of records tied to the same place
First, bring the record up in detailed view (clicking on the thumbnail or the record name link).

Click on the <<Related records>> tab. Then click on <<Add [+]>.
You will be guided to the PWS homepage as shown below. Click on your project – be sure to click on this link and not the “My Projects” link.

Navigate to the appropriate record and tick the box. You can also add a description of the relationship. Click on <<Add related record/s>> to complete the action.
Once you have related a record, it is attached to the parent record as shown.

In this view, you have the option of adding more records or editing the relationships be existing records. Related records are related to the parent object only and not to each other. If you need to relate all records to each other as well as the parent object, you can <<Batch relate all records above>>. This avoids having to repeat this step for each record.

**Annotating Images**

This function is only available in the Project Workspace. Annotating images allows you to add notes about any aspect you choose to highlight. To begin, click on any image in any category or folder within your Project. You should be directed to the edit screen as shown below in detail. Click on the link <<View/Annotate (0)>>. The number indicates the number of annotations currently noted.
A larger view of the image will appear in the annotation view of the Record. To the left of your image is the grey <<Annotate Detail>> button.

Clicking on the <<Annotate Detail>> button will provide you with the annotation dialogue box as shown. The black box on the upper left corner of the dialogue box is the outline for your annotation and is adjustable. To adjust the outline area, simply move your cursor to an edge until you get this arrow symbol: then move to the desired size. You can move the entire dialogue box anywhere within the picture frame by placing your cursor in the middle of the outline box until you get this symbol:.

Once positioned and sized according to your needs, you might have something that looks like the figure on the left below. You can now add whatever text you want. Afterwards, hit <<OK>>. Your annotation will appear highlighted in green as shown on the right. Alternatively, you can add text first and then size the outline. The order of things is entirely up to you.
To make edits to your text, simply move your cursor into the middle of the outline box and click. You will get another dialogue box as shown below where you can edit your text or delete the annotation altogether.

Your completed annotation might look as follows. Once you are finished annotating the image, simply press the your browser’s back button to return to the Editing Screen.
You will now notice that your image indicates the number of annotations that have been added.

**Annotating Audio**

For annotating an audio object, click on the appropriate record and then navigate to the <<View/Annotate>> page as illustrated in the previous example.

Your annotation window looks as shown below. Play the audio by clicking on the play button.
Once the recording gets to a point of interest, hit the play button again to pause the recording. In the field provided, type in an appropriate notation. Click on <<Annotate>> to capture the data. **NOTE:** If you are annotating a simultaneous transcription/translation that you wish to follow the audio as exactly as possible, aim to pause the recording just before the chosen text in order to make your annotation. This will result in the annotations highlighting accurately along with your audio.

The annotation is assigned a time or position within the audio. Resume play for further annotations.

Annotations are recorded in the table as shown and positions within the audio are captured as well. You can navigate to any position by clicking on the time. You can also delete an annotation if desired.
Annotating Video
Annotating videos is the same process as audio. The interface allows you to view the video, pause it and annotate sections just like in audio.

Timemap
To use Timemap effectively, two pieces of information should be included in your object records. The first is the date of when the object or file was created, and the second is GPS information. In providing the date, you must use one of two standards for representing data in the “Date Created” field.

1. YYYY-MM-DD – Year-Month-Day: 1974-02-04

The standard for location information is:
- Latitude format: degrees,minutesN/S
- Longitude format: degrees,minutesE/W

These standards are visible in the Project Workspace for ease of compliance. Information on adding GPS to a record is covered in the Digital File Library section of this manual (see page 35).
Go to the main page of the project, and click on ‘Timemap’ in the tabs above your record. Once date and GPS data is entered, the data generates a map as shown below. The top register indicates the time of creation. The bottom register illustrates where the objects were created. You can zoom in and out of the map to view the location in more detail. You can also click on the drop pin to see the object it represents. By clicking on the name of the object, you are navigated directly to the editing screen for that record.

ADVANCED RESEARCH TOOLS
This section will review the more advanced research tools available within OCCAMS. These include: customising your project (including customising your record types and creating controlled vocabularies), advanced Timemap functions, comparing records, creating new records and creating categories.

Project Settings – customise your project
Project Settings allows you to customise your project. There are six tabs in the Project Settings: Project Details, Project Metadata, Add Users, Controlled Vocabulary Lists, Controlled Vocabulary Relationships and Record Link Lists. The Add Users tab is about permissions.
Permissions in OCCAMS is handled separately in the manual. See page 89 for more information.

**Project Details**
The Project Details tab provides the description of the project. It includes: Project Name, Description, Owner, Contributor(s), Permissions, Locations, Timespan and automated fields for the date created and modified. You can modify this information at any time by navigating to this tab and then hitting <<Save>>.

**Project Metadata**
In the Project Metadata tab, researchers can customise the Record Types. Record Types, their definitions and fields are discussed in more detail on pages 14 through 23. On the main view of the Project Metadata tab, a list of those Record Types appears along with two options – editing (or customising) and exporting. This section will go over editing Record Types before talking about exporting customised Record Types.
Customising Record Types
As already discussed, OCCAMS Record Types come with a set of fields, compiled from a variety of disciplines and industry standards. This stock set is a benchmark from which projects can be created. One of the main features in OCCAMS is being able to customise the Record Types to fit the project. Fields can be deleted if they are extraneous, edited for more project-specific wording, moved around so that the order fits the researcher’s own logic and more fields can be added. To customise a Record Type, click on the <<edit>> link corresponding to the desired Record Type.

<table>
<thead>
<tr>
<th>Record type</th>
<th>Description</th>
<th>Edit metadata</th>
<th>Export settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Object (2014 Definition)</td>
<td>An object someone has made that has significance</td>
<td>edit</td>
<td>export</td>
</tr>
<tr>
<td>Natural Object (2014 Definition)</td>
<td>An object that is not made but has significance.</td>
<td>edit</td>
<td>export</td>
</tr>
<tr>
<td>Photographic Object (2014 Definition)</td>
<td>Photographs sourced from researchers, collaborators, collectors and/or institutions</td>
<td>edit</td>
<td>export</td>
</tr>
<tr>
<td>Video Object (2014 Definition)</td>
<td>Video sourced from researchers, collaborators, collectors and/or institutions</td>
<td>edit</td>
<td>export</td>
</tr>
</tbody>
</table>

After hitting the <<edit>> button of your chosen Record Type, the list of fields will appear as illustrated below. More fields are visible by scrolling down and the total fields visible are entirely dependent on your browser set up.

Navigate back to the main Project Metadata tab by either clicking on the tab itself or the hyperlink <<Record Types>> as pointed out by the arrow.

There are seven columns of information: Field Name, Description, Source Type, Mapping, Action, Select and Move. The “Field Name” is what appears in the Project Workspace. The “Description” does not appear in the Project Workspace but describes briefly the type of
information the field was designed for. The definitions are short and open for modification if the project demands a more nuanced or detailed definition. “Source Type” dictates the type of data to be entered. If you select “Filled In”, then any amount or type of data can go into the field. The other option is to select “Controlled Vocabulary” for when you want drop down menus to appear. Controlled Vocabularies are discussed on page 70.

The “Mapping” column assigns the field a metadata mapping code for interoperability with other databases. OCCAMS has several standards available to choose from. If you are creating new fields, you will need to assign a mapping code to the field. If you are unfamiliar with metadata mapping, review Error! Reference source not found. on page 102. This provides you with a basic set of elements. If you are not sure about the type of code to use, please contact an OCCAMS administrator for guidance. If you are keen to learn more about metadata mapping, review Appendix C: Further Reading into Metadata Mapping.

The last three columns are actions: Action (or Delete), Select and Move. These actions refer to the fields themselves and will be detailed next.

Deleting Fields
To delete a field, simply hit <<Delete this field>>. A pop up screen confirming the action will appear <<Are you sure you want to delete this field?>>. Hit <<Cancel>> if you have changed your mind or hit <<OK>> to delete the field.

There are fields you should not delete because their absence will cause issues when mapping between the Digital File Library and the Project Workspace. These fields are: Title, Description, Keywords, Creator, Created Date, Place Created, File Copyright, Institution/Holder: File, Institution/Holder: File Identifier, Latitude and Longitude. These fields have been prevented from being deleted. Any other customisation required for record types is available.

Editing Fields
You can edit any part of the field that is necessary. Let’s say that you are working with a Museum that does not use the term “Technique” but prefers the term “Methods” and you want your project to match what the terms of the Museum. Click on the field name you wish to edit

After clicking, the field will open for editing. You can expand the view of a field element – such as the description – by placing your cursor over the arrow as illustrated and dragging down.
You can now edit each element. Simply place your cursor in the appropriate element box and type in the new text.

Afterward entering in the new text, hit <<save>> and then <<close>>. **NOTE:** If you hit <<close>> before save, your changes will not take. Your new text will look like this.

**Moving Fields**
Let's say your project has a focus on methods and you want it in a more prominent position. Hovering your cursor over a row will make a blue diamond appear.
Grab this diamond with your cursor and this will allow you to move the entire row wherever you want it, pushing the other fields down in order. The end result is illustrated below.

Creating New Fields
To create a new field, navigate down to the bottom of the page. After the field “OCCAMS Author” will be “Create new metadata field”. Click on this link.

This will activate blank elements for the creation of a new field as illustrated below.

For this exercise, let’s say that the project focuses on bead types. There are several main types as well as subtypes of beads so two additional fields will need to be added. They will be named “Bead Type” and “Bead Sub-Type”. Type in the field name (“Bead Type”) and description (“Type of bead used in work”). Use the default of “Filled In”. For the mapping code, there are several choices. DC:Type is the most appropriate. Hit <<Save>>.
A new field has been successfully created. Repeat the steps for the “Bead Sub-Type” field and then move them to where is most appropriate.

The end result is a Record Type that is customised to the project you are working on. Add as many fields as the project requires.

**Exporting Record Types**

Once you have customised the Record Types, you may find them useful for another project. Rather than having to add those same fields to a new project, you can export the customised Record Type to a new project. Simply select the fields you want to export (usually, the new ones, customised for your project) by clicking on the box in the Select column. Click <<Export Selected>>. The fields will be exported as a text file. Save the text file with a name you will recognise. Next, select the Record Type you want to add those fields to, browse for the text file and import it. You can then move the new fields to their appropriate positions in the list.

**Controlled Vocabulary**

All fields in OCCAMS are designed for “natural language vocabularies”. This means that any form of typed data can be entered. However, there may be the occasion where a “controlled vocabulary” is required. Controlled vocabularies are ways in which the data entered can be predefined with only authorised terms or phrases are allowed. According to the Getty’s *Introduction to Controlled Vocabularies: Terminology for Art, Architecture and other Cultural Works*, the purpose of controlled vocabularies is to “organize information and to provide terminology to catalog [sic] and retrieve information. While capturing the richness of variant terms, controlled vocabularies also promote consistency in preferred terms and the assignment of the same terms to similar content” (2000: 12). In this way, the researcher can maintain quality control over spelling variations and terminologies used in a research project. This step results in the creation of drop down menus that can either be interactive and additive or restrictive and controlled. An example is below:

---

*Project metadata*

Record types> Cultural Object (2014 Definition)

Upload File:  Browse...  Import Metadata Types from file

---
In this example, there is a selected field that has a predetermined set of answers. In strategising lists for controlled vocabularies, ask yourself the following questions:

1. Do you have complex names or terms specific to the project that are used repeatedly?
2. Do you want to limit the range of options for a field?
3. Do you have terms in foreign languages that are often used?

Once you have thought about the types of vocabularies used in your project, you will next have to identify those fields affected by those terminologies. There are two ways of producing controlled vocabularies: you can upload a set of controlled vocabularies or you can manually input the terms.

Here is an outline reflecting the types of controlled vocabulary needed for a research project on beads. The fields most affected by these terms regard bead types and subtypes (as already created in the previous section “Creating New Fields”).

- Czech Seeds
- Japanese Round
  - Myuki
  - Matsumo
- Toho
  - Treasures
  - Aikos
  - Triangle
  - Takumi
  - Magatama
- Japanese Cylinder
  - Miyuki Delicas
- Charlottes
- Drop
- Bugle
  - Straight
  - Twisted

This first tier represents the general type of bead. I’ll want this information to appear in the field “Bead Type”.

This second tier represents the subtype of the original type of bead. I’ll want this information to appear in the field “Bead Sub-Type”.

This outline illustrates what will be a drop down menu in OCCAMS. Once a main bead type is selected, if there are subtypes, those should automatically appear as choices, limiting the drop down list and making it more user friendly. In order to achieve this, there are two steps: first, coding for all the types need to be created and then second, the relationships between those code lists needs to be established. This is actually quite easy as the next steps will show.

Creating Lists
The first task is to code the terms you want to use. The format for coding is as follows:

Name; Description; 1/0: term, term, term, term
The ‘Name’ is the name of the list. Be explicit in naming the list of terms, as this will help you identify the type of controlled vocabulary you are using. I default to the field name I am using within the Record Types. This triggers what list goes with what field. The ‘Description’ is a brief phrase that describes the list. The Name and Description will appear in OCCAMS so it is good to be accurate. The ‘1/0’ is a choice you must make. ‘1’ means that the list is ‘locked’ and only those terms you have included can be used. ‘0’ means that the list is ‘open’ and in addition to the terms you have selected, additional terms can be added to the list in the data entry process. ‘Terms’ are those terms that make up your controlled vocabulary. They are separated by a comma and are automatically ordered alphabetically in OCCAMS so there is no need to stress on how they are ordered in the coding.

Examples of successfully coded lists – using the example of Bead Types and Bead Sub-Types – are as follows:

List 1
Bead Types; types of beads used; 1: Czech Seeds, Japanese Round, Japanese Cylinder, Toho, Charlottes, Drop, Bugle

List 2
Bead Subtype; subtypes of beads used; 1: Myuki, Matsumo, Treasures, Aikos, Triangle, Takumi, Magatama, Miyuki Delicas, Straight, Twisted

In List 1, I have created the controlled vocabulary for ‘Bead Types’ that include the general types of beads available on the market – this reflects that first tier in my outline. I have also created a Bead Subtype list – tier two in the outline. I used ‘1’ because I want to control new terminology that might be introduced into the project. Note that I am not concerned at this stage about what subtype connects with what main type – that comes later.

The next step is to create a text file for each example. To create a text file, open up a new Word Document, cut and paste the single line of code and save as ‘Plain Text (.txt)’ under the name of the list. You should have documents that look like this:

The next step is to upload these into OCCAMS and then create the kind of relationships needed for the drop down menus.
In the Project Settings, go to the “Controlled Vocabulary Lists” tab. You will get a screen as shown below. Click on <<Browse>>.

Navigate to where the text files have been saved and select one.

Next, click on <<Import Controlled Vocabulary from File>> link. You will get a confirmation that the controlled vocabulary has been imported. Click <<okay>>.
Repeat these steps for the other lists you want to upload. When you are finished, you should have a list of controlled vocabularies such as below. You now have the option to <<view list>>, <<delete list>> or <<export>> the list.

If you find that you need to add more to your list or that there is an error in spelling, click on <<view list>>. You will see the list of terms that will appear in the field “Bead Types”. If you need to add another term, click on <<Add new item>>.

Type in the new term and hit <<save>>.

If you need to edit an existing term, click on the term
The term will open up for editing. Edit the text as you like and then hit <<save>>.

If you have already used “Drop” in your records, they will automatically be updated to the new term “Tear Drop”. To delete a term, click on <<delete>> and this will delete any reference to the term already used and prevent it from being an option in the future. **NOTE:** If the term has been used or entered in any record metadata, it cannot be deleted. To delete the term, delete the instances of the term from metadata in records first. Simply search for those records using the term and delete the instances.

It is possible that over time, a project will yield a rich controlled vocabulary that would be useful in other projects. For this reason, there is the option of exporting the lists and then uploading them to new projects. Click on the <<Export>> link and a text file document will appear with the complete list of controlled vocabulary. Export each list separately and save as separate text files for uploading as already described.

Additionally, if you have coded the list as <<1>> or “do not allow items to be added in research space”, you can change your mind if later in your project, it becomes necessary. Instead of recoding your lists, you can simply click on the List Name. For example, clicking on <<Bead Subtype>>, opens up the list for editing as illustrated below.

Simply untick the box and you can now add new information in the Project Workspace. This new information will be added to your list and is editable as if it had always been included. When you choose to export the list, all new material will be included as well.
The next step is to assign fields with the appropriate controlled vocabulary. To do this, go to the Project Metadata tab and click on the appropriate Record Type. In this instance, I have chosen “Cultural Object”. Scroll to the field that has been designated for a drop down menu. Edit it so that the “Source” is changed from “Filled In” to “Controlled Vocabulary”.

Additional options will appear to select the list type. Make sure the correct list is selected. This is why naming the list as the field can be very helpful as there is less confusion.

Below the list type is the option to allow multiple selection of terms/items. Click this off or leave as selected (default) depending on the project needs.

Repeat these steps for all fields where controlled vocabularies have been created. The end result should be as below. As you can see, the list type matches the field name and you can clearly check that the correct type has been assigned.

Creating Relationships
Creating controlled vocabulary relationships allows for one type to be selected and only those subtypes associated with that first type (those with relationships) appear in the drop down menu. First step is to navigate to the “Controlled Vocabulary Relationships” tab. Click on “Create a new relationship”.

A new level of actions will appear. Each step will activate the next column.

First, select the Record Type where you have already designated fields as “Controlled Vocabulary”.

The next step is to select the appropriate list type. In this example, “Bead Type”, as the primary list, has been selected.
The next step is to choose the sub-type or secondary list. In this case it is “Bead Sub-Type”.

Now select a primary type. For this example, “Japanese Round” has been selected.

Finally, highlight those secondary terms that are sub-types of “Japanese Round”. Hit <<save>>.

Once saved, your relationship will look like this:
Repeating the process for another relationship such as below…

…will yield the same list of relationships. Do not let this throw you. Both sets of relationships are there.

Checking the relationships in a record reveals a successful attempt.

Timemap with Spatial Coverage
This feature allows the user to add extra geospatial information to their object record. Here you can add additional GPS locations, draw tracks, polygons or rectangles to accompany the object record.
This is provided in order to fully represent the geographic impact of an object. Perhaps someone from place X is singing in place Y about place Z – and more GPS points are required to encapsulate that. Perhaps a person is speaking a particular language group, and you wish to represent the geographic coverage of people speaking the same language. These are just some of the reasons for which Spatial Coverage can be of use.

To use Spatial Coverage, go to the Spatial Coverage field in the object metadata. Click on the square below the Spatial Coverage field:

![Spatial Coverage](image)

A map screen will appear. In this screen you can draw the features you need by clicking on the tools in the top left pane provided:

![Map Screen](image)

Once you have drawn everything you need, click on the update button in the top right corner. This will save your information and close the window. This information is then stored with your record.

To see these annotations on Timemap, go to the main project page, and click on the above tab entitled “Timemap with Spatial Coverage”. Then your visualisations and records will appear.

If you wish to just see single GPS points, click on the “Timemap” tab instead.
Compare Records

Compare records allows you to open two records at a time and compare views and metadata. There are many ways to select the two records you want to view. One quick way is to search for records in order to bring up only those records under consideration. In the upper right hand section of your project homepage, type in a keyword or annotation or other marker through which to filter your records.

![Search bar for records](image)

The search will bring up the desired records. Simply select the two records as indicated and then click on <<Compare records>> link in the Actions panel.

![Comparison of records](image)

A new tab in your Internet browser will be created, showing the two objects side by side as shown. You can scroll down to compare information in the metadata.
Create New Records
There are several other types of records available in OCCAMS. You can link images to them if you like using the steps described on page 52. Potential records you can create in OCCAMS are: Person, Organisation, Place, Event and Internet Reference. You can also create in the PWS Cultural, Natural, Photographic, Video, Audio and Document records. All individually created records do not require a link to an image and you can add metadata to any of them as well as relate them to other records.

In the Actions panel, click on the “Create a new record” link as demonstrated.

You will be navigated to a screen where you will be able to select – through a drop down menu – the different records available. Click on the one you want to create, such as Organisation, and the page will reload with the appropriate fields.
Fill in the fields with the details of your new record. Afterwards, scroll down to the bottom of the screen and click <<Create new record>>.

New records without linked data appear in the edit screen as below. You can add a photo of the organisation or leave it blank. All new records are created in this same way in the PW, regardless of their type.
Project Categories
Project categories are just another way of managing your records. Categories are managed in the far right panel as shown. If you cannot see this panel, simply click on the >> symbol and the panel will appear. Likewise, if you want to hide the categories panel, click on the symbol again.

Categories create folders. To create a new category, simply type in the name of the folder and then hit <<Create>>. Your new category will appear as shown.

You can also make subcategories. Simply right click on the parent category and a list of options will appear. You can rename the category if you need to as well as delete it (only the category, not the records in it). Click on <<Create subcategory>> to add a subcategory. Type in the name and hit return.
You can create a number of categories that will help you filter your records.

MANAGE PROJECT
There are a few additional functions for your consideration when managing your project. This section will go over how you can manage your records once they are in the Project Workspace.

Manage Records
Manage records is the function in the Actions panel where you can batch edit your records. To manage your records, select the link the Action panel as indicated. **NOTE:** You must have selected records in order to use this function.
You will be presented with this screen.

**Batch Delete**
Batch Delete is just that – all selected records are deleted from the project. This does not delete the files in the DFL. **NOTE**: this action cannot be undone.

**Batch Categorise**
Batch Categorise allows you to move several records into a category in one action. Move your cursor over the blue cross, click and hold and then drag your cursor over to the desired category. The cross will turn green, letting you know that you can release and finish the action.
**Batch Edit Records**

Batch Edit Records allows you to add the same research metadata to all like records. This means that you can only batch edit one record type – Cultural, Video, Document, etc. – at a time. After selecting a record type to batch edit, scroll down to edit fields. Make sure all the boxes are ticked so that the fields will be updated. Click &lt;&lt;Save&gt;&gt;.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>Keywords</td>
<td>loomed, beadwork, Nee Perce</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Date Photographed</td>
<td></td>
</tr>
<tr>
<td>Place Photographed</td>
<td></td>
</tr>
<tr>
<td>File Format</td>
<td></td>
</tr>
<tr>
<td>Original File Format</td>
<td></td>
</tr>
<tr>
<td>Colour Condition</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>Measurement Unit</td>
<td></td>
</tr>
<tr>
<td>Institution/Holder file</td>
<td></td>
</tr>
<tr>
<td>Institution/Holder file id</td>
<td></td>
</tr>
<tr>
<td>Institution/Holder object</td>
<td></td>
</tr>
<tr>
<td>Institution/Holder object id</td>
<td></td>
</tr>
<tr>
<td>Collector</td>
<td>Gretchen Storte</td>
</tr>
<tr>
<td>Date Collected</td>
<td></td>
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<tr>
<td>Place Collected</td>
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</tr>
<tr>
<td>Creator Copyright</td>
<td></td>
</tr>
<tr>
<td>File Copyright</td>
<td>Gretchen Storte</td>
</tr>
<tr>
<td>Latitude</td>
<td></td>
</tr>
<tr>
<td>Longitude</td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>OCCAMS Author</td>
<td></td>
</tr>
</tbody>
</table>

Click &lt;&lt;Save&gt;&gt;.
Chapter 4: Setting Permissions

Permission in the DFL
You can share folders in the DFL with other OCCAMS users. Open up the DFL and make sure you can see all your folders in the main view panel as shown. You can do this by selecting “My Files” in the Folders Panel as indicated.

Select the folder you want to share by highlighting the folder. Click once on the folder and then click on the <<Share>> button as shown.
The share dialogue box will appear. The Label indicates the folder name being shared. The Rights are a choice of three options: Read, Read & Write and Upload Only. Read indicates that the shared folder can only be viewed by the user. Read & Write means that the user can view and manipulate the file metadata. Upload Only means that the user can only add to the folder and cannot see what is inside. Share with is simply typing in the user’s name. **NOTE:** the user must already have an OCCAMS account.

Once complete, simply hit the green tick and a special green icon will appear on your folder. Clicking on <<Share>> again, will reopen the dialogue box and allow you to delete or change the settings or add additional users.
On the user's end of things, accessing shared files is as simple as clicking on the green arrow in the user's DFL page.

NOTE: "Share folder" should be used in conjunction with "Add Users" in the Project Workspace project settings. A user, who has permissions to the view or edit records in the PWS, does not necessarily have the permissions to the files these records are linked to. The system gives you control over record metadata and the related digital files (image/video/document/audio). Example: You can choose to give access of record metadata to someone but not the access of the image file it describes when the image might be sensitive in this case. Only the "Read" and "Read & Write" permissions will be used in this situation.

Permissions in the PWS
Permission settings in the PWS are done in the Project Settings under the Add Users tab. There are three permission levels: Reader, Editor and Author.

The Author role is automatically assigned to the project creator. The Author role has full access (read & write and admin access) to the project. There is no restriction on the number of users who are assigned Author role.
The Reader role is similar to the Reader role in the DFL. Users can only ‘see’ the records and cannot edit the research metadata. Editor roles allow you to edit the research metadata but come with none of the administrative permissions such as project settings.

While permissions set in the Project Workspace for a particular project interact with the access rights set by the Share process in the Digital File Library to provide this access, they are not the same. Share rights relate specifically to the files in the Digital File Library and permissions relate specifically to roles project records and digital objects which have been imported into a project.

User who has been given permissions to view/edit the records in the project will not automatically have the permissions to the files in the Digital File Library that these records link to. The OCCAMS system gives you control over project record metadata and the related digital files (image/video/document/audio). For example, you can choose to give access to record metadata to a user but not the access to the image it describes because the image might be sensitive.

It is important that users have been assigned appropriate rights through the Share process in the Digital File Library. After you assign project permissions to someone, you may want to consider assigning the same person permissions to the files the project records link to.

To assign permissions, simply click on <<Add User>> and type in the username. Assign a role – Reader, Editor or Author – and then click on <<Save>>. **NOTE:** A user must already have an OCCAMS account.

```
Permissions

Users

<table>
<thead>
<tr>
<th>User name</th>
<th>Reader</th>
<th>Editor</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>capella</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

Save
```

**NOTE:** If you have more advanced permission needs or concerns, please contact a systems administrator who can help you strategise the best way to protect your research while sharing it.
Chapter 5: Reporting in OCCAMS

There are two methods of reporting in OCCAMS: Object Summary and Object Summary Complete. These reporting methods allow you to report on an individual record or several records. The differences and directions for each method follow. **NOTE:** Reporting is not an option from the Digital File Library.

**OBJECT SUMMARY (PDF)**

This type report has the ability to be done as a single object/asset selection or as a batch selection, including several if not hundreds of objects. There are several ways of selecting objects:

- **Search:** searching under a keyword or annotated phrase – for example “baskets” – result in all objects with the ‘baskets’ somewhere in the fields appearing the in the main PWS panel. Users can then select them all or a partial list of the search results and create a report.

- **Category Folder:** all items in a category folder can be selected for reporting options.

- **Record Type:** all Record Types (all photographs, cultural objects, etc) are able to be selected and created into a report.

- **Random/Custom:** users can randomly select objects in the main viewing page of the PWS for reporting.

Object Summary is a report generated around a record without the annotations or related records that might be part of it. On the PWS homepage, select one or several records and then click on `<<Record(s) Summary>>`. 
The interface you see next will vary according to the type of computer you are using. For a MAC, a separate browser tab will open and you will see this screen. Adjustments to page settings will depend on your individual system. It is recommended that you print the document as a PDF for maximum value.

**COMPLETE RECORD REPORT (PDF)**

When you have an object pulled up, you have the option of a Complete Record Report. A Complete Record Summary shows all Related Records and Linked Files as well as annotations of records and all completed in fields.

To access this reporting option, you must first open up a single record. The reporting link is located in the upper right hand corner as shown. **NOTE:** Complete record reports must be done for each parent object and cannot be batched across multiple records.

The first page of the report shows the Object Summary of the 'parent object'. OCCAMS already has a feature where the user can indicate the parent object. Related Records and Linked Files appear as a whole on the next page, giving an overview of all the related images connected with the parent object. Following this are Linked Files followed by Related Records each with its individual Object Summary.
APPENDIX A: BATCH PROCESSING YOUR PHOTOS IN PHOTOSHOP

This is a simple, step by step process for batch editing RAW files so that you can upload them into OCCAMS. RAW and TIFF files are great for long-term archiving because their data is not compressed like a JPEG. However, those formats are also quite memory heavy and can a long time to download. The recommended format for all digital images in OCCAMS is JPEG.

This method of batch processing is done in Photoshop under the program’s <<Actions>> function. After launching Photoshop, go to the <<Windows>> tab, found on the tool bar at the top of your screen. There will be a list of functions you can access – one of them <<Actions>>. This is a toggle function – click to have the tool appear, click again to make it disappear. You may already have this appearing in your Photoshop window.

The Actions function’s frame is as shown:

There are a wide variety of Actions you can use in Photoshop and one of the perks is being able to create your own custom Action. First you need to program the new Action. This tutorial will take you through those steps.
The first step is creating and naming your new Action. At the bottom of the function frame is a symbol that looks like a square inside a square – this is the <<create new action>> button. Click on that symbol as shown.

Clicking on the <<create new action>> symbol will bring up this dialogue box

For clarity, name the new Action accurately. For example, “RAW to JPEG”. You can create another Action “TIFF to JPEG” later using this same process but there are a few extra steps when converting RAW to JPEG that is best to clarify first. Just make sure you keep all new Actions clearly labelled. After you have named your new Action, click <<Record>>.

Do not feel that you have to rush at this point. Recording does not capture the total amount of time you are taking to complete this process – just the steps in the process itself.
First thing now is opening up a RAW file in Photoshop. Navigate to your <<File>> tab and <<Open>> one RAW file.

RAW files have the extension .cr2. You only have to choose one file at this point. Once the Action is programmed, you can then do multiple files all at once.

Once you have opened a RAW file, Photoshop will launch Camera Raw as shown. These next steps automate the compression of the file into a JPEG format.

First, make sure Camera Raw default settings are used. This automatically adjusts the image. To do this, click on the icon that looks like a table of contents symbol, shown:
A popup of possibilities will appear. Click on <<Camera Raw Defaults>>.

The next step is to open the Workflow Options Dialogue Box. This is done by clicking on the line of text at the bottom of your current dialogue box – it looks like a line of text and is next to the <<Open Image>> button.

Adobe RGB (1998); 8 bit; 5616 by 3744 (21.0MP); 240 ppi
The Workflow Options Dialogue Box allows you to set the pixels per inch of your JPEG (or TIFF or whatever you would like). OCCAMS can handle a fairly large JPEG and 400 pixels per inch allows for a good zoom capacity and is a good place to start. Click <<OK>> once you’ve set your pixel size.

Once the Workflow Options dialogue box is closed, you can now open your image in Photoshop. Click <<Open Image>>.

This will open the image and give you this screen.
Next, you save the image as a jpeg.

Make sure to close the file. If you do not, when running the action, you will be left with the images open in Photoshop. This might not be bad when working with 10-15 images but when working with 100+ images, you will want the files to close.

Now that all steps of the action have been recorded, you can click on the red button and finish the recording.

Now you can run the action and batch edit your files from RAW to JPEG.
APPENDIX C: FURTHER READING INTO METADATA MAPPING

World Wide Web Consortium (W3C)
Home page: http://www.w3.org/
Semantic Web: http://www.w3.org/standards/semanticweb/
All Standards and Drafts: http://www.w3.org/TR/

Dublin Core
Dublin Core Metadata Element Set, Version 1.1: http://dublincore.org/documents/dces/

VRA Core
VRA Core Schemas and Documentation: http://www.loc.gov/standards/vracore/

Getty Museum
Getty Metadata Crosswalk:
http://www.getty.edu/research/publications/electronic_publications/intrometadata/crosswalks.html

FOAF
FOAF Vocabulary Specification 0.99: http://xmlns.com/foaf/spec/#term_accountName

Schema.org
Organisation of Schemas: https://schema.org/docs/schemas.html

vCard
vCard Ontology - for describing People and Organizations: http://www.w3.org/TR/vcard-rdf/
Online Cultural Collections and Analysis Management System

Discussion Paper: Linking Databases

Dr Gretchen M Stolte
Dr Rebekah Plueckhahn
INTRODUCTION
There have been expressions of interest for OCCAMS to ‘connect’ to databases. This notion is an abstract one and the concept of ‘connecting’ to a database has to be carefully defined and scoped. It is important to understand how OCCAMS would ‘connect’ with other databases. It is necessary to define what ‘connection’ means and in what ways the process is articulated. Further, it is also important to scope the types of databases OCCAMS would target for such connections. Finally, a connection of databases would need to have a clear concept on what such an interface would ‘look’ like as well as identifying the kinds of cross-institutional protocols required for such linkages.

This Discussion Paper is a preliminary presentation of the concepts surrounding the need to ‘connect databases’ and how OCCAMS can potentially fit into the global trend of metadata sharing that has been happening in the USA and Europe. This paper will first outline the steps already taken to ensure OCCAMS is open to potential connections. Second, the foundational understandings needed to progress such connections will be outlined. Third, this paper will present three case studies on how such connections have happened around the world. These case studies include: the Smithsonian American Art Museum’s Linked Data Cloud project; the Europeana Data Model; and the HuNI Humanities Networked Infrastructure in Australia. The concluding section of this paper will outline the necessary steps forward if such connections with databases are required in future OCCAMS endeavours.

OCCAMS OVERVIEW
Metadata mapping standards or schemas allow the sharing of metadata between different databases. Standardised schemas allow programs to communicate and recognise similar sets of fields between databases. However, there is no metadata schema currently developed for ethnographic or anthropological data capture. Using existing schema for OCCAMS would have placed limitations on the researcher working with various forms of material, visual and performative culture. One of OCCAMS’s strengths is the development of a rich set of metadata fields – an OCCAMS schema – that cater to the variety of information attached to cultural collections. However, to ensure that the OCCAMS metadata schema is recognisable to other databases, each data field has been mapped onto the most standardised metadata standards used worldwide. These include: Dublin Core, Dublin Core Terms, FOAF, BIO and VCard. Mapping onto these schemas ensure that OCCAMS has interoperable capabilities that can be utilised and added to in the future.

There are two important considerations when considering sharing between databases:

1) The first is that there are many different types of metadata standards, and each cultural institution either uses one that suits their collection, develops a new one (like OCCAMS) or both.
2) Each database has specific rules and technical requirements that need to be taken into account when wanting to share information between databases. There may be existing API’s set up for this purpose, or new additional functions will need to be programmed.

CONNECTING DATABASES
This section will briefly discuss some of the connotations ‘connecting to databases’ might invoke. Case studies will go into greater detail about the specific articulations of existing connections. The following discussion points are ones that have been brainstormed as a way of anticipating how to define ‘connecting’. In point of fact, there are a myriad of ways OCCAMS could potentially connect with databases. As the case studies will illustrate, this is a field of innovation and creativity and the CDHR should not feel limited to any approaches discussed in this paper.

Professional Connections
Professional connections include researchers and academics communicating and establishing a professional, person-based relationship between institutions. Regardless of any other definition of connection that might be
employed, this type of professional connection is crucial. Several institutions will have their own security concerns and systems of data sharing that will need to be understood and negotiated.

Some concerns include:

- Sensitive institutional information (e.g. financials, acquisition practices, collection hierarchies etc.)
- Sensitive collection information (e.g. skeletal remains, disputed objects, repatriation issues, etc.)
- Cultural copyright of materials (such as from source communities institutions are collaborating with)
- Commercial copyright of materials (e.g. digital files of objects, photographs, installation views, etc.)
- Quality of files and standards (e.g. high res, low res, multiple views, large video files etc.)
- Extent of metadata shared (e.g. collector’s notes, historical documentation, name/naming variations, etc.)
- The role of the particular institutional database (e.g. replicating their database elsewhere might not suit their mission and specific role as a targeted cultural institution)
- And many more as yet unforeseen issues that can arise when dealing with cultural institutions

Personal relationships with institutions will help mitigate these concerns and create an atmosphere of trust, respect and shared goals in relation to sharing database information. As OCCAMS is essentially a tool used by researchers, rather than an archival database, it is largely in this professional liaison capacity that sharing might be arranged between OCCAMS and other databases. It might be that a particular researcher wishes to upload a selection of images previously located in a larger museum collection. In this case, this researcher would liaise with museum staff over the extent of this data sharing, and possible technical requirements in order to make this happen. This would likely require collaboration between the researcher, the sharing institution’s curators and technical staff, and OCCAMS developers.

### Importing Exported Metadata

Most cultural institutions have databases with the ability to report on their collections. These reports can come in many formats such as PDF, Word and Excel. OCCAMS currently has in place the ability to upload data from an Excel spread sheet. This is done by matching columns in a spread sheet with fields in an OCCAMS record. This is a behind the scenes process where researchers give such spread sheets to an OCCAMS systems administrator to upload.

The process works as follows:

- A researcher working with a cultural institution collects a list of objects pertinent to their project
- The cultural institution produces an Excel spread sheet with the metadata of the objects
- The researcher then matches the column names in the spread sheet to fields in OCCAMS' record types
- The Excel spread sheet is then passed on to an OCCAMS system administrator who uploads each row as its own record
- Records are now visible in the researcher’s project to add more metadata or link to other objects, documentation, etc.

This process requires an OCCAMS' system administrator to complete and is currently being utilised by researchers at ANU. This is the current system set up in OCCAMS for sharing metadata between databases.

### Hyperlinks within Databases

Hyperlinks are a link from a document to another location, activated by clicking on a highlighted word or image. Hyperlinks most commonly connect to a webpage. OCCAMS currently includes this feature as a general data tool but it is limited.

For example a user is researching an online catalogue. Once an object is found, the URL can be copied and pasted into a record within OCCAMS. Only the URL will be visible and the user will have to click on the hyperlink to go to the object. No metadata is transferred and would have to be manually added by the user.
There are many drawbacks to this approach as URLs are not always reliable and can be unstable. Currently in OCCAMS, there is a record type that allows for the capture of information about Internet resources.

There have been suggestions of a hyperlink being used in OCCAMS to link to actual data in another database. So far, as the case studies will show, this is not common and there are a host of copyright and sensitivity issues (as discussed previously) that are in play. This kind of sharing requires a level of partnership between institutions that can only result from clearly outlined and shared memorandums of understanding.

CLOUD CONNECTIONS

Cloud computing is, “storing and accessing data and programs over the Internet instead of [a] computer's hard drive”.¹ It is in other words, just another name for the internet but the implications are more specific in that sense of sharing data. When it comes to database cloud connections – or linked data clouds – an intermediary database is set up with other databases feeding into and accessing it. This form of connecting databases will be discussed in more detail in the following case studies.

The case studies

The desire for museums to publish information about their objects has led to a global sharing of information and is sometimes referred to as “Linked Open Data” or LOD. As researchers have written, “some notable efforts include the Europeana project, which published data on 1,500 of Europe’s museums, libraries, and archives, the Amsterdam Museum, which published data on 73,000 objects, and the LODAC Museum, which published data from 114 museums in Japan.”² These case studies will explore some of these examples including the capability of OCCAMS to link to the HuNi Project.

An important point to consider in reading these case studies is who OCCAMS would share data with and how. Pivotal to this concept of sharing is making data in OCCAMS projects open and accessible. This is dependent on researchers allowing their data to be open to the public. Currently, OCCAMS data is closed, allowing for researchers to keep sensitive information private.

Smithsonian American Art Museum

Currently, the SAAM (Smithsonian American Art Museum)³ share their cultural collections (and subsequent metadata) using the Linked Data Cloud or Linked Open Data (LOD) systems. The process SAAM used is illuminating for this discussion and outlines a similar process OCCAMS would have to go through if metadata was to be shared to an existing LOD system.

1. Map the Data to RDF – RDF stands for Resource Descriptive Framework. It is part of the World Wide Web Consortium (W3C) that manages international standards for the Internet. OCCAMS metadata standards are based on Dublin Core and select other types of scheme – a few of the hundreds of schema from which the RDF stems. OCCAMS metadata needs to be mapped to the RDF in order to share with other cloud database systems. This involves selecting what data from OCCAMS would be mapped and shared. Not all metadata is public or appropriate for sharing and researcher notes can potentially include raw observations that are not for public consumption. Aside from privacy considerations, as researchers have already pointed out, “the process is complicated because many museums have rich, hierarchical or graph-structured data… that are unique to a particular museum [and is] often inconsistent and noisy because it has been maintained over long periods of time by many individuals”.⁴ Without getting too technical, such mapping is not as simple as a click of a button.

³ Szekely (2013) page 1
⁴ Szekely (2013) page 2
SAAM developed KARMA – a tool to “map structured data to RDF according to an ontology of the user’s choice”. Ontology in this use means metadata schema. KARMA creates an interface where users could map their data themselves but without having to trouble themselves with the “complexities of the underlying technologies”.

2. Link to External Sources – once a user has their material mapped to the RDF, the next step is choosing a useful dataset and linking it to a LOD. For example, SAAM focused on linking artists to DBpedia and the Getty Union List of Artist Names (ULAN). SAAM matched people using their names and this required “high-precision algorithms” as “people’s names are recorded in many different ways, multiple people can have the same name, and birth dates and death dates are often missing or incorrect”. The lesson from this step for OCCAMS is that once the complicated task of mapping metadata to the RDF is completed, there are still many hurdles left for mapping information and connecting to other databases.

3. Curating the Linked Data – the final step is making sure all these processes were done correctly. SAAM’s KARMA system allowed museum personnel to assess the accuracy of the RDF by “graphically showing how database columns map to classes and properties in the ontology”. Additionally, museum staff had to make sure that links to external sources were correct. SAAM used the PROV ontology to represent provenance data and concluded that it was a suitable technology for curating the links. PROV ontology is another data model developed by the W3C.

Europeana Data Model
Europeana Data Model (EDM) is “the metamodel used in the European project to represent data from Europe’s cultural heritage institutions”. It uses the following ontologies: “SKOS for the classification of artworks, artists and place names; Dublin Core for the tombstone data; FOAF and RDA Group 2 Elements to represent biographical information; ORE from the Open Archives Initiative, used by EDM to aggregate data about objects”. These different schemas represent the complexity of the EDM as well as the versatility. The stated goals of the EDM was to provide “extra expressivity and flexibility” in the representation of data. EDM adheres to the principle of a semantic web – “there is no such thing as a fixed schema that dictates just one way to represent data”.

EDM identifies seven ‘noticeable requirements’:
- R1. distinction between “provided objects” (painting, book, movie, archaeology site, archival file, etc.) and their digital representations
  This is first requirement is currently met within OCCAMS.
- R2. distinction between objects and metadata records describing an object
  This is second requirement is currently met within OCCAMS.
- R3. multiple records for the same object should be allowed, containing potentially contradictory statements about this object
  This is third requirement is currently met within OCCAMS.
- R4. support for objects that are composed of other objects

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5 Szekely (2013) page 5
6 Ibid.
7 Szekely (2013) page 10
9 Szekely (2013) page 11
11 For further information, see http://www.w3.org/TR/prov-o/
12 Szekely (2013: 3)
13 Ibid. (original emphasis).
15 Ibid.
This is fourth requirement is currently met within OCCAMS.

- R5. compatibility with different abstraction levels of description (e.g. if a provider wishes to submit descriptions that follow the distinctions introduced in FRBR Group 1 [FRBR])

   This is fifth requirement needs more worth within OCCAMS. More information is required to fulfil this requirement.

- R6. EDM provides a standard metadata format that can be specialized

   This is sixth requirement is currently met within OCCAMS.

- R7. support for contextual resources, including concepts from controlled vocabularies.

   This is seventh requirement is currently met within OCCAMS.

Despite being well poised to engage with the EDM, OCCAMS would still need to go through the mapping of its data to the RDF. Relationships with EDM staff or board would have to be set up and the goals of such a sharing would have to be clearly scoped.

There is one more point of consideration in this example. Each OCCAMS user creates a project and each project can be modified according to the researcher’s needs. These modifications can include new fields or multiple fields of description and this can create added complexity with regards to mapping data to the RDF. Each project would have to be tailored to connections with the cloud interfaces such as the EDM. Even if OCCAMS was up and connecting with the EDM, these connections would not cut across all projects in OCCAMS. OCCAMS flexibility and expressivity – highly prized by users when researching cultural collections – can create further complications when connecting to LODs. Thus, any connection between databases has to be taken on a case-by-case basis.

HuNI

If the above cases demonstrate the potentials within OCCAMS to connect with databases, the HuNI Project (Humanities Networked Infrastructure) represents a case where OCCAMS has already been set up in order to engage with a larger collection of datasets. HuNI is a project that integrates 28 of Australia’s most important cultural datasets into a ‘virtual laboratory’. These datasets comprise more than two million authoritative records. It is funded by The National eResearch Collaboration Tools and Resources (NeCTAR).16

Given the combined collection of Australia’s cultural datasets in the one virtual repository, it has been an ongoing priority for OCCAMS to ensure that the data within OCCAMS can be mapped in compliance with the data mapping model used by HuNI. Preparing for this in advance reduces further technical intervention required in order for OCCAMS data to be shared to this repository.

HuNI is a virtual combination of collections across multiple databases and as such, they have set up a general methodology of mapping databases to their own system, including having a tool that speeds up this process.17 HuNI advises that metadata must align with their overall data model and OCCAMS has taken this model into consideration with this data model mapped on OCCAMS code. HuNI is made up of six entities: Person, Place, Event, Organisation, Work and Concept. Within these entities in HuNI, data is centred around several main fields: ID, Name, Type, Description, Start Date and End Date. Sub fields can be created that suit a particular database. This framework provides the backbone to make any sharing possible.

In order for sharing to occur, OCCAMS data to be shared with HuNI is first uploaded to the ANU Data Commons. A connection between OCCAMS and the ANU Data Commons has already been established. HuNI can then extract the OCCAMS data from the ANU Data Commons into HuNI.

16 For more information, go to NeCTAR’s webpage at https://nectar.org.au/.
17 For more information, see http://wiki.huni.net.au/display/DS/Simplified+Mapping+File+For+Defining+Solr+Transforms?src=contextrnavpgetreemode
These fields have already been entered and mapped within OCCAMS’s code to ensure that future uploading to HuNI is possible. Such foresight on specific sharing requirements helps mitigate future technical requirements should researchers wish to share data.

Conclusions/Ways Forward
Metadata schemas and ontologies are dynamic and changing. OCCAMS can and should prepare for future interoperability but is able to do so only in the very abstract. New record types – or any new coding of OCCAMS – need to be created with the concept of mapping in mind, even if it is only with a general framework. Specific examples and engagements with LODs need to be carefully and critically scoped. Further investments in interfaces such as KARMA need to be explored. If sharing between US or European cultural institutions is required then specific technical requirements will need to be researched and scoped by researchers as well as technical staff. However, taking into account the specificity of sharing requirements, features within OCCAMS have been installed that lay the very broad groundwork for the development of such future sharing requirements.

There are three main considerations for moving OCCAMS forward: publishing, importing and exporting. Publishing functions in OCCAMS are currently limited. OCCAMS can publish to Wordpress but only one record at a time. This function needs more development and testing. Importing functions are also limited. As discussed earlier in this paper, OCCAMS can handle data downloads from cultural institutions but only in the format of an Excel file. There is the need to go beyond Excel and investigate other formats such as XML and RDF. Exporting data is also limited mainly because researchers chose to have their data locked from public view. Only those projects that are open can participate and share with LOD systems. OCCAMS as an entity is not uniform – there are many parts that will want a say in how the data is shared. Additionally, there is a need for more investigation into the types of formats in which OCCAMS should export data. Research into the most useful formats needs to be undertaken to allow for ultimate capability and interoperability.

All these points aside, OCCAMS is an excellent first step towards these higher functionalities and data sharing. It is a considerable task however that will take time and resources to develop further.