

The background of the slide is a photograph of a rock surface covered in ancient petroglyphs. The rock is a mix of reddish-brown and dark grey/black. The petroglyphs are etched into the rock and include various symbols, including what appears to be a stylized bird or winged figure at the top, and several lines of text in a cursive script below it. The lighting is dramatic, with strong shadows and highlights.

International Terminology Working Group

Getty Center, October 25, 2024

Dennis Wuthrich

Farallon Geographics

Arches Lingo

An Application for Building, Modeling, and Using Authority Data

Presenter



Dennis Wuthrich
Farallon
Geographics

Discussion

Arches: Building an Open Source solution for experts

Creating authority data

Modeling terminology with Arches

Arches: Building an Open Source solution for experts

Dennis Wuthrich (me)

Creating authority data

Phil Carlisle; Historic England

Modeling terminology with Arches

George Bruseker, TAKIN.Solutions

Arches

www.archesproject.org

Data Management



Collect & Share

- Mobile app: on/off-line collection
- Robust import / export with notifications



Controlled Vocabularies

- Thesauri management — *Reference Data Manager* (RDM)



Structure & Storage

- Semantic, self-describing, & sustainable data structure
- Dynamic UI-generation
- Multiple ontologies—e.g., CIDOC CRM
- Cloud/server deployable
- API & linked data support
- Multiple data types supported



Controlled Access, Audit & Review

- User & group secure access management
- Granular (node level) permission control
- Detailed audit of changes to data
- Provisional (unpublished) data; data review

Data Discovery & Visualization



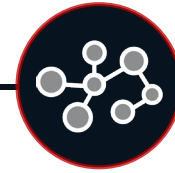
Search

- Semantic & thesauri-enhanced searches
- Searchable annotations
- Support for custom indexing
- Export search results
- Geospatial search
- Saved and Advanced searches



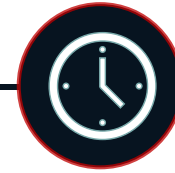
Spatial Data / GIS

- Integrates GIS functionality
- Seamless management of Arches data in external GIS — e.g., esri
- Changeable basemaps—e.g., historical maps
- Overlays supported
- Satellite imagery



Relationships

- Explore relationships between resources —e.g., people, materials, activities, historic events, objects, iconography
- Discovery of previously unknown connections / new knowledge



Time

- Temporal search
- Fuzzy date support
- Visualization of time distribution in entire dataset — *Timewheel*



Reports, Viewers & Annotations

- Customizable reports using *Report Manager*
- IIIF viewers and image annotations
- High-resolution image support
- Extended 3-D viewers
- Interactive spectra charts with comparisons
- Customizable dashboards

Project/Task Management



Workflows

- Comprehensive, flexible workflow (i.e., process) management
- Task tracking
- Notifications
- *Project Status* plugin
- Correspondence management and tracking
- Letter templates with auto completion

Arches is a platform to build applications for:

Data management

Search/discovery

Data visualization

Data integration

Decision support, reporting

Arches for HERs



Historic England

[Home](#)

[New](#)

[Active](#)

[Find](#)

[Manage](#)

[Welcome, Dennis](#)

[\(logout\)](#)

Greater London Historic Environment Record (GLHER)

The online heritage information and management system for London.



On this page

[1. About](#)

[2. How to use](#)

[3. Volunteering with GLHER](#)

[4. Heritage Themes](#)

Arches for Science



Arches/DISCO

[Arches Features](#)

[Search](#)

[Manage](#)

Welcome, admin

[Log off](#)

Arches for Science

A web and mobile platform for
managing your most important conservation information

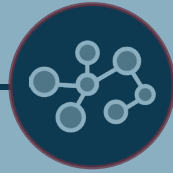


Ok, Back to building software to
manage authority data...

Data Management

Data Discovery & Visualization

Project/Task Management



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Structure & Storage

Controlled Access, Audit & Review

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Controlled Vocabularies

- Thesauri management—*Reference Data Manager* (RDM)

Why Arches?

We want to improve its current
thesaurus management capabilities

Using controlled vocabularies: data management

localhost:8002/add-resource/49bac32e-5464-11e9-a6e2-000d3ab1e588#

Manage ... New Resource

Welcome, admin

Relaunch to update

Find a card...

+ Expand - Collapse Grid

New Resource (Maritime Vessel)

- Names
- Descriptions
- Owner
- Construction Phases
- Location Data
- Asset Dimensions
- Bibliographic Source Citation
- Designation and Protection Assign
- Nationalities and Registration Deta
- Use Phase
- Scientific Date Assignment
- Voyages**
- Status
- Images
- Associated Archives
- Associated Activities
- Associated People and Organizatio
- Associated Consultations
- Associated Digital File(s)
- Associated Monuments, Areas and
- External Cross References
- System Reference Numbers
- Audit Metadata

Related Resources

Manage Permissions

DEBUG
Archives
7.5.5
Project
0.0.0

New Voyages

Current Former Historic

Date of Departure

Expected Date of Arrival

Date of Arrival

Cargo Type

- arsen
- Cargo**
- Chemicals
 - Arsenic
- Construction Materials
 - Spars
- Metal

Date of Loss End

Display Date Languages

Date of Loss Qualifier

Using controlled vocabularies:

localhost:8081/search?paging-filter=1&tiles=true&format=tilecsv&precision=6&total=1

Welcome, admin

Search

Find a resource...

QA Type Resource Type

Results: 7900

Ascending

21 Belgrave Road

Details Edit Map Related Resources

Cedar View Care Centre, 1 Stanhope Road, Croydon, CR0 5NS

Details Edit Map Related Resources

West Thornton Primary Academy, Rosecourt Road, Croydon, CR0 3BS

Details Edit Map Related Resources

R/O 9, 10 & 11 St James's Park, Croydon, CR0 2UT

Details Edit Map Related Resources

14 High Street Colliers Wood London SW19 2AE

Details Edit Map Related Resources

Abell House & Cleland House, John Islip Street, London SW1P 4LH

Details Edit Map Related Resources

Map Filter

Advanced

Related

Details

Date Interval

Type Within

Search all dates Custom date range

From To

YYYY-MM-DD YYYY-MM-DD

Time Wheel

(Click on a block to set a filter, double-click to zoom in, double-click center to zoom out)

Millennium (1000 - 2000) - Half-millennium (1500 - 2000) - Century (1800 - 1900) - 3 hits

Currently: Design, manage concept

The screenshot displays the Reference Data Manager interface. The browser address bar shows the URL: localhost:8002/rdm/35860868-7251-4b10-be4d-3b3cecb53b3e. The interface includes a top navigation bar with a search bar, a user profile (Welcome, admin), and a 'Relaunch to update' button. A sidebar on the left contains various icons for navigation. The main content area is divided into two panels. The left panel, titled 'Thesauri', shows a list of thesauri under the 'FISH Maritime Cargo Types Thesaurus'. A large blue arrow points to the 'Cargo' section. The right panel, titled 'SHINE Vocabulary (en) (ConceptScheme)', shows details for the selected concept scheme. It includes sections for Labels, Notes, Broader/Narrower Concepts, Related Concepts, Values, Images, and Identifiers. The 'Broader/Narrower Concepts' section lists various features with red 'X' icons, indicating they are not yet defined. The 'Identifiers' section shows the Arches ID and the URL.

localhost:8002/rdm/35860868-7251-4b10-be4d-3b3cecb53b3e

Reference Data Manager

Welcome, admin

Search for a concept...

Thesauri Collections Tools

FISH Maritime Cargo Types Thesaurus

Cargo

Animal Fodder

Animals And Animal Products

Ballast

Chemicals

Construction Materials

Containers

Cordage

Fertilizer And Waste

Food

Fuel

General Cargo

Government Stores

Jewels

Mail

SHINE Vocabulary (en) (ConceptScheme) Manage

Labels SHINE Vocabulary (preferred, en) Add label

Notes Add note

Broader/Narrower Concepts SHINE Vocabulary

- Above + below-ground feature(s)
- Above-ground feature(s)
- Below-ground feature(s)
- Degraded below-ground feature(s)
- Structure(s)
- Structure(s) + above + below-ground feature(s)
- Structure(s) + above-ground feature(s)
- Structure(s) + below-ground feature(s)
- Well-preserved below-ground feature(s)

Related Concepts Add related concept

Values Add value

Images Add images

Identifiers

Arches ID: 35860868-7251-4b10-be4d-3b3cecb53b3e

http://localhost:8000/35860868-7251-4b10-be4d-3b3cecb53b3e

Then select concepts for use in data editing

The screenshot displays the Reference Data Manager web application. The browser address bar shows the URL `localhost:8002/rdm/951880a2-5761-36ca-bd6f-fb97f7640a26`. The application header includes a search bar with the text "Search for a concept...", a user profile section with "Welcome, admin", and a "Relaunch to update" button. A dark sidebar on the left contains navigation icons. The main content area is divided into two panels. The left panel, titled "Maritime Cargo Types Thesaurus", contains a list of concepts: "Cargo", "Animal Fodder", "Cattle Fodder", "Oil Cake", "Animals And Animal Products", "Ballast", "Chemicals", "Acid", "Arsenic", "Calcium Carbonate", "Drugs", "Nitrate Of Soda", "Phosphate", "Potassium Silicate", and "Soda Ash". The "Arsenic" concept is highlighted with a blue bar. A large blue arrow points from the left towards the "Arsenic" entry. The right panel displays the details for the "Arsenic (en) (Concept)". It includes a "Member Hierarchy" section showing "FISH Maritime Cargo Types Thesaurus" > "Cargo" > "Chemicals" > "Arsenic". Other sections include "Labels" (Arsenic (preferred, en)), "Notes" (A semi metal, poisonous element used in a variety of industrial processes and in some medicinal preparations.), "Values", and "Identifiers" (Arches ID: 951880a2-5761-36ca-bd6f-fb97f7640a26).

Reference Data Manager

Search for a concept...

Maritime Cargo Types Thesaurus

- ▼ Cargo
- ▼ Animal Fodder
- ▼ Cattle Fodder
- Oil Cake
- Animals And Animal Products
- Ballast
- ▼ Chemicals
 - Acid
 - Arsenic**
 - Calcium Carbonate
 - Drugs
 - Nitrate Of Soda
 - Phosphate
 - Potassium Silicate
 - Soda Ash

Arsenic (en) (Concept)

Member Hierarchy [Add dropdown entry](#)

- ... FISH Maritime Cargo Types Thesaurus
- ... Cargo
- Chemicals
- **Arsenic**

Labels [Add label](#)

Arsenic (preferred, en)

Notes [Add note](#)

scopeNote (en)
A semi metal, poisonous element used in a variety of industrial processes and in some medicinal preparations.

Values [Add value](#)

Identifiers

Arches ID: 951880a2-5761-36ca-bd6f-fb97f7640a26

The Problem

We want to decouple the work of creating/managing thesauri from using them

But really, why Arches?

Arches is designed to manage complex cultural heritage data. Terminology is complex...

←

→

↺

🏠

afs.test.fargeo.com/graph_designer/9519cb4f-b25b-11e9-8c7b-a4d18cec433a

☆

👤

🌸

🗑️

📁

🔒

🔍

⋮

Manage ...

⌘

Physical Thing (Resource Model)

Welcome, admin

🔔

🔍

?

🔄

Find a Resource Model/Branch...

! Unpublish Graph

🔄 Quit Designer

🏠

📁

🔍

📄

🔖

👤

📋

📅

📊

📷

📁

⬅ Graph

📄 Cards

🔒 Permissions

Find a node, datatype, card...

+ Expand - Collapse ⚙ Grid ⓘ Show IDs

Physical Thing (E22)

▸ Part Identifier Assignment (E13)

▸ Destruction (E6)

part of (E22)

depicts (E1)

▸ Production (E12)

material (E57)

▸ Name (E33) ⚙ ↶ ↷ 🗑️

_label (xsd:string)

▸ Textual Reference (PC67)

▸ Removal from Object (E80)

current owner (E39)

▸ Removal from Set (la:terms/Remova

current location (E53)

type (E55)

▸ Digital Reference (PC67)

member of (la:terms/Set)

▸ Addition to Collection (la:terms/Add

ExactMatch (E55)

carries (E33)

▸ Identifier (E42)

▸ Statement (E33)

▸ Dimension (E54)

Name (E33_E41_Linguistic_Appellation - semantic)

Node Identifiers

Node Name

Name

Node Name Alias

name

☐ Use a custom node alias

Relationship to Physical Thing (parent)

P1_is_identified_by

Ontology Class

E33_E41_Linguistic_Appellation

Semantics

Physical Thing (E22_Human-Made_Object; parent) P1_is_identified_by Name (E33_E41_Linguistic_Appellation)

Description

Specific:

General:
It is strongly recommended that every resource that should be rendered to an end user have at least one name. Different types of name can be distinguished using classifications. See:
<https://linked.art/model/base/#names>

Node Data Type and Configuration

Arches provides:

Interactive Modeler

Integrated Semantics

Data Management Services (CRUD)

Search/Retrieval Services

Workflows

API

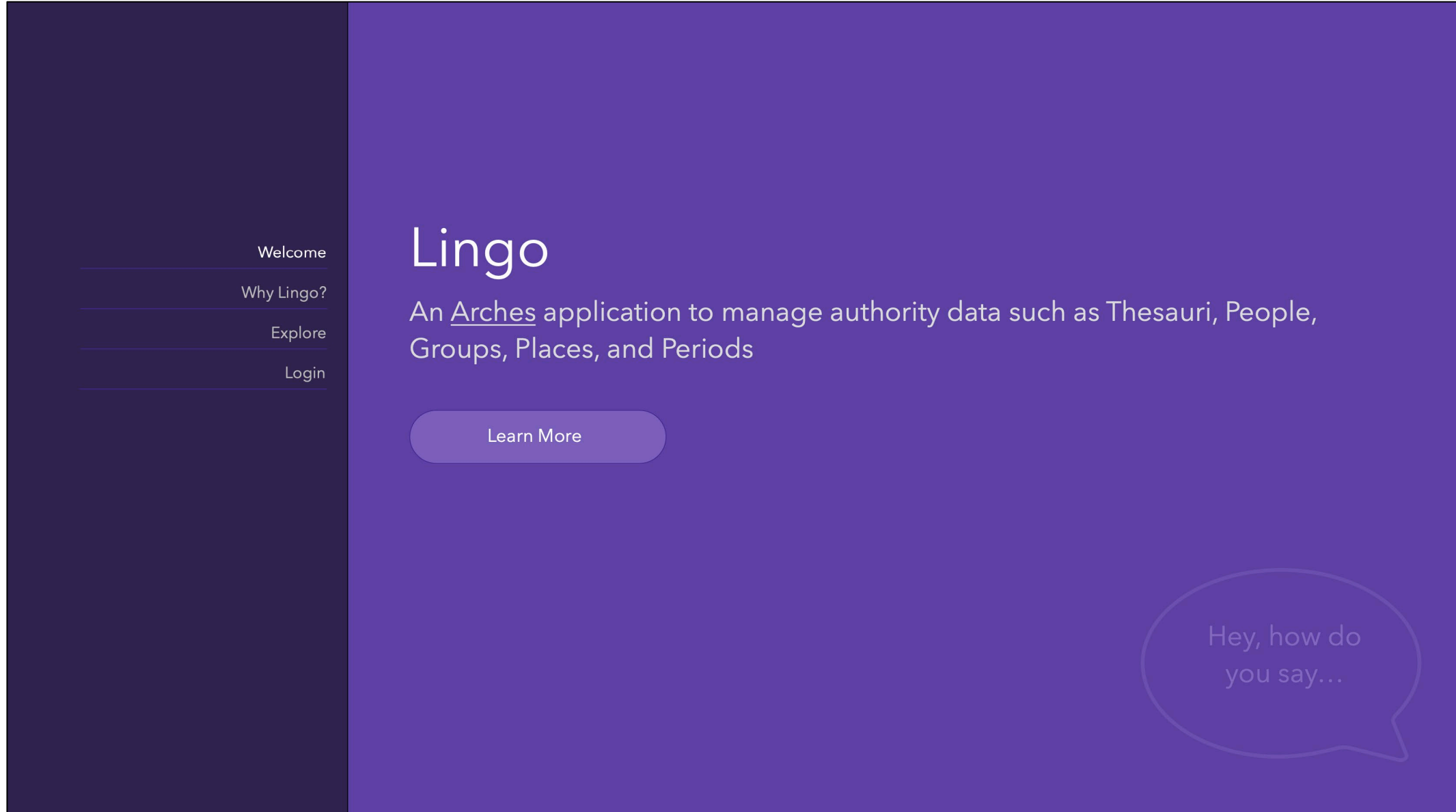
FAIR Principles

Interoperable data require
authoritative vocabularies

Lack of Tools

In our opinion, there are no great
Open Source tools to manage
authority data

Arches Lingo: Authority Data Manager (coming Summer 2025)



Arches Lingo

An Arches application for managing
authority data

Arches Lingo will be for:

Thesauri (schemes, concepts)

Places

People

Periods

Arches References

An application for using trusted authority data to build FAIR heritage data with Arches

Arches References will be for:

Quicky and easily using trusted authority data for any
Arches application

(whether managed in Lingo or other applications)



Phil Carlisle:

How Arches Lingo will support building authority data