Digital preservation and the CHERISH Project

Delivered by Dr Lesley Davidson
Research Archaeologist: Data Scientist
The Discovery Programme
ADS TNA training school November 2024

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33 years and counting of excellence in archaeological research

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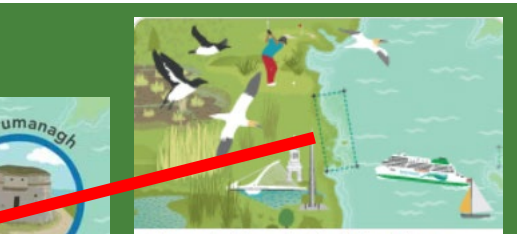
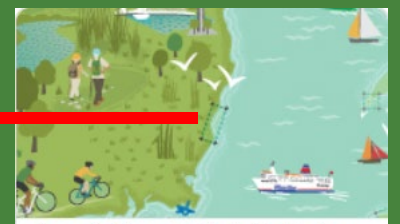
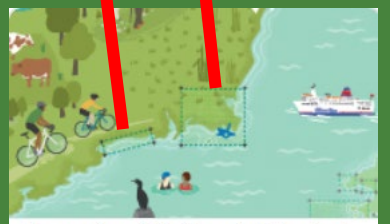


Area 1 - County Dublin sites



Area 4 - County Waterford sites

Area 5 - County Kerry sites



Areas 2 and 3 - County Wexford

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CHERISH toolkit

1. Lidar
2. UAV
3. Satellite coastal mapping
4. Aerial reconnaissance
5. Geophysical survey
6. Palaeoenviro survey
7. Terrestrial metric survey (GNSS)
8. Excavation – cliff face
9. Terrestrial laser scanning
10. Excavation - traditional
11. Marine survey
12. Diving
13. Coastal zone assessment
14. Desk-based assessment
15. Scientific dating
16. Permanent marker survey
17. Community recording

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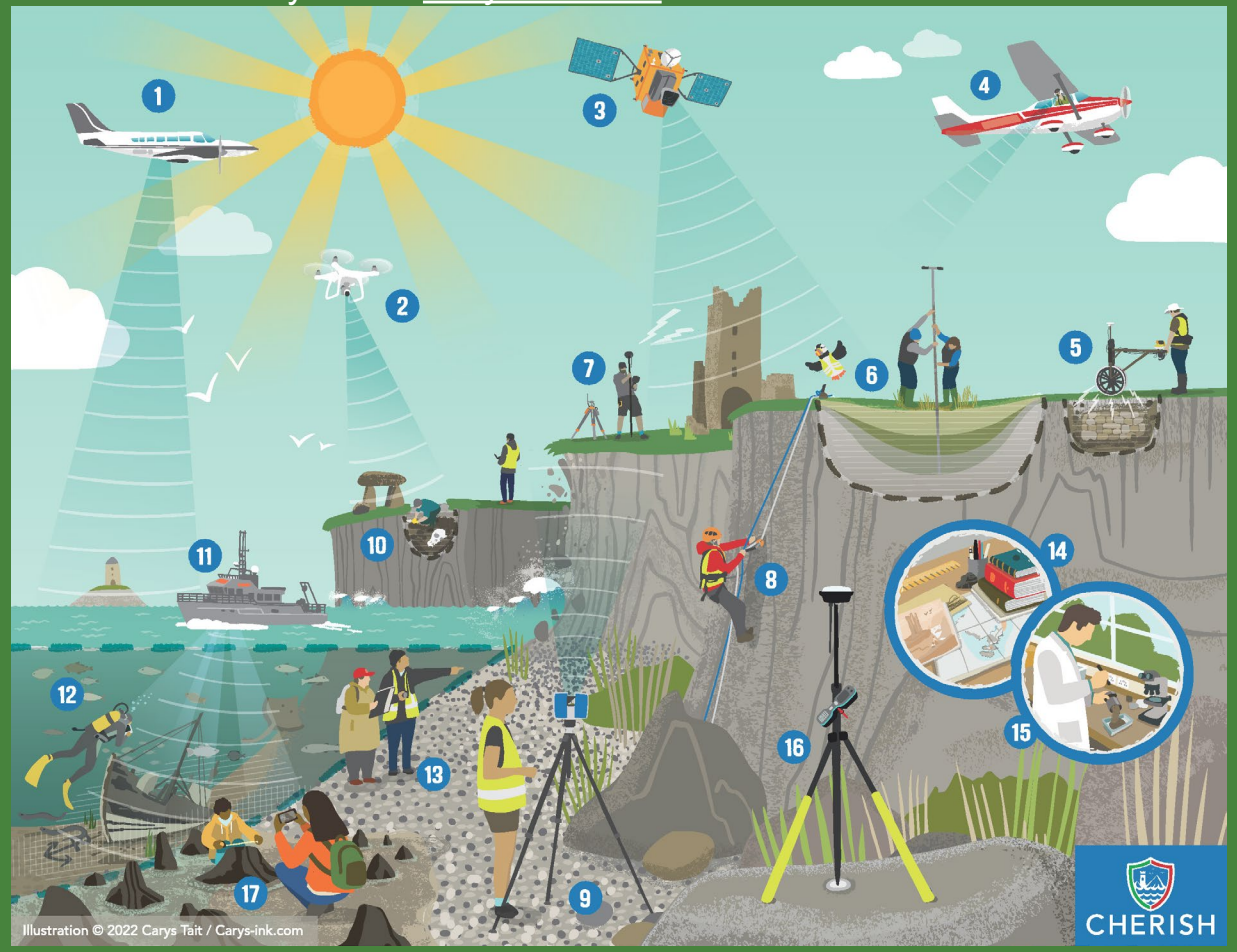

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CI 1 – GOOD PRACTICE GUIDANCE

The CHERISH team will provide integrated guidance on how to survey and record heritage sites threatened by climate change in targeted coastal communities, using the latest innovative technologies and remote sensing techniques.

CI 2 – FIXED SURVEY MARKERS

A key legacy of the operation, CHERISH will provide the first 3D baseline fixed survey points and data for selected heritage assets specifically aimed at future monitoring of climate change.

CI 3 – ENHANCED HISTORIC ENVIRONMENT DATA

Through its activities, CHERISH will enhance and update national historic environment datasets, which help to inform priority lists for statutory designation.

CI 4 – ENHANCED PALAEOENVIRONMENTAL DATA

CHERISH will generate multi-proxy palaeoenvironmental data within a robust chronological framework, developed from selected locations to reconstruct past environments and inform future adaptation strategies.

CI 5 – SEAMLESS ONSHORE/OFFSHORE DATA

A number of innovative digital 'real maps' derived from LiDAR and photogrammetry, will provide 3D data geomatic data for planning and management in the terrestrail, intertidal and marine environemnts.

CI 6 – TRAINING THE CITIZEN SCIENTIST

Engaging conferences, workshops, seminars and outreach events to raise awareness and train the citizen scientist in survey and recording, heritage at risk, climate change and storminess impacts.

CI 7– EXCAVATIONS ON HERITAGE ASSETS AT RISK

Community excavations will be run during CHERISH to train citizen scientists in local communities to record heritage sites at risk.

CI 8 – SHARED WEB PORTAL

A key tool of CHERISH for information delivery and awareness-raising and an important legacy of the operation for future adaptation strategies.

CI 9 – LANDOWNER MANAGEMENT PLANS

Detailed management plans and GIS datasets for reefs, islands and headlands under study showing cultural heritage assets and climate change threats.

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About Us

The Digital Repository of Ireland – certified trustworthy digital repository for the preservation of Ireland's humanities, cultural heritage, and social sciences data

What does DRI do?

The Digital Repository of Ireland (DRI) is a CoreTrustSeal-certified trustworthy digital repository for the preservation of Ireland's humanities, cultural heritage, and social sciences digital data for long-term access.

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Estimated **3+** terabytes of data and counting...

- **4** Counties
- **5** study areas
- **818** site records updates
- Potentially **81** new sites discovered
- Updated records for **180** structures/buildings
- Detailed survey of **20+** sites
- **42** UAV digital photogrammetry surveys
- **7** terrestrial digital photogrammetry surveys
- **24** terrestrial laser scanning surveys
- Geophysical surveys at **7** sites
- **3** excavations (traditional and cliff-face)
- Paleonviro sampling at **7** sites
- Permanent marker surveys at **8** sites
- **19** three-dimensional models
- **3** intertidal surveys
- Marine surveys at **3** sites
- **1** coastal zone assessment
- **4** landowner management plans

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UAV digital photogrammetry

Glascarrig North, WX017-008---- Castle – motte and bailey
UAV digital photogrammetry survey 16/06/2021

- 100's to >1000 of overlapping near vertical and oblique aerial images captured by UAV (JPEG) per site
- ITM grid coordinates for ground control points (TXT) captured using GNSS with correction service
- ~~Digital photogrammetry processing file (PSX + files)~~
- Othromosaic and Digital elevation model output (GEOTIFF)
- ~~Dense point cloud (LAS? XYZ?)~~
- Topographic relief visualisations (GEOTIFF)
- Figures (TIFF)
- Metadata and paradata
- Processing and fieldwork reports

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Terrestrial laser scanning

Clonmines, WX045-012003- Religious house – Augustinian friars
Terrestrial laser scanning survey18/06/2018

- Raw laser scan files (FLS or RWI/RWP)
- ITM grid coordinates for ground control points (TXT) captured using GNSS with correction service
- ~~Processing file(s)~~
- Point cloud (E57? XYZ?)
- Orthoimages (plan view and elevations) (TIFF)
- Figures (TIFF)
- Metadata and paradata
- Registration and fieldwork reports

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Metadata

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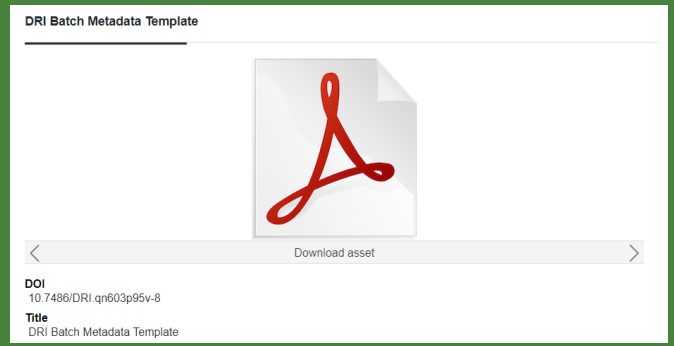
Taisclann Dhigiteach na hÉireann



Dublin Core™ Metadata Initiative

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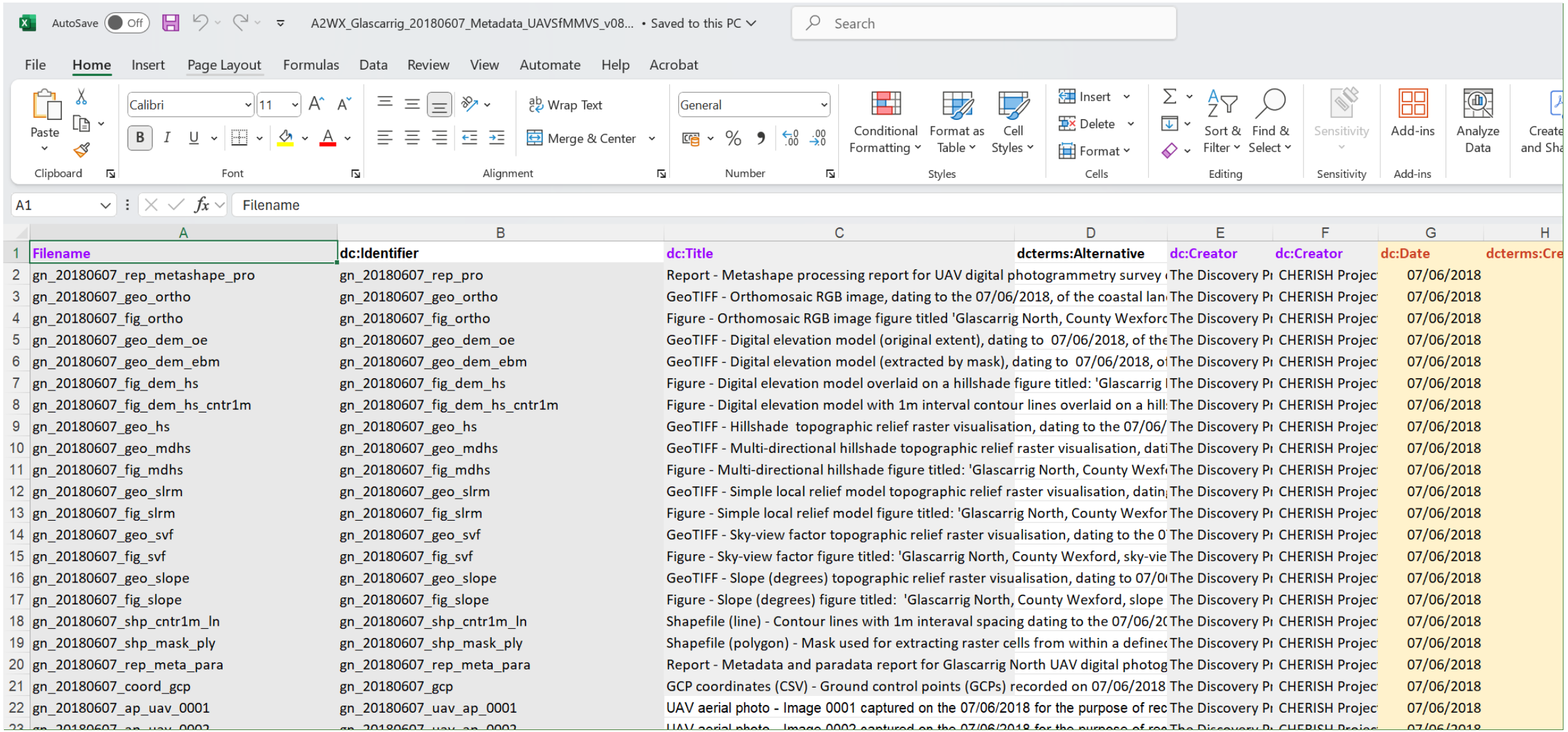

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3	gn_20180607_geo_ortho	gn_20180607_geo_ortho	GeoTIFF - Orthomosaic RGB image, dating to the 07/06/2018, of the coastal lan		The Discovery Pı	CHERISH Projec	07/06/2018	
4	gn_20180607_fig_ortho	gn_20180607_fig_ortho	Figure - Orthomosaic RGB image figure titled 'Glascarrig North, County Wexforc		The Discovery Pı	CHERISH Projec	07/06/2018	
5	gn_20180607_geo_dem_oe	gn_20180607_geo_dem_oe	GeoTIFF - Digital elevation model (original extent), dating to 07/06/2018, of the		The Discovery Pı	CHERISH Projec	07/06/2018	
6	gn_20180607_geo_dem_ebm	gn_20180607_geo_dem_ebm	GeoTIFF - Digital elevation model (extracted by mask), dating to 07/06/2018, of		The Discovery Pı	CHERISH Projec	07/06/2018	
7	gn_20180607_fig_dem_hs	gn_20180607_fig_dem_hs	Figure - Digital elevation model overlaid on a hillshade figure titled: 'Glascarrig		The Discovery Pı	CHERISH Projec	07/06/2018	
8	gn_20180607_fig_dem_hs_cntr1m	gn_20180607_fig_dem_hs_cntr1m	Figure - Digital elevation model with 1m interval contour lines overlaid on a hill		The Discovery Pı	CHERISH Projec	07/06/2018	
9	gn_20180607_geo_hs	gn_20180607_geo_hs	GeoTIFF - Hillshade topographic relief raster visualisation, dating to the 07/06/		The Discovery Pı	CHERISH Projec	07/06/2018	
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11	gn_20180607_fig_mdhs	gn_20180607_fig_mdhs	Figure - Multi-directional hillshade figure titled: 'Glascarrig North, County Wexf		The Discovery Pı	CHERISH Projec	07/06/2018	
12	gn_20180607_geo_slrm	gn_20180607_geo_slrm	GeoTIFF - Simple local relief model topographic relief raster visualisation, datin		The Discovery Pı	CHERISH Projec	07/06/2018	
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22	gn_20180607_ap_uav_0001	gn_20180607_uav_ap_0001	UAV aerial photo - Image 0001 captured on the 07/06/2018 for the purpose of rec		The Discovery Pı	CHERISH Projec	07/06/2018	

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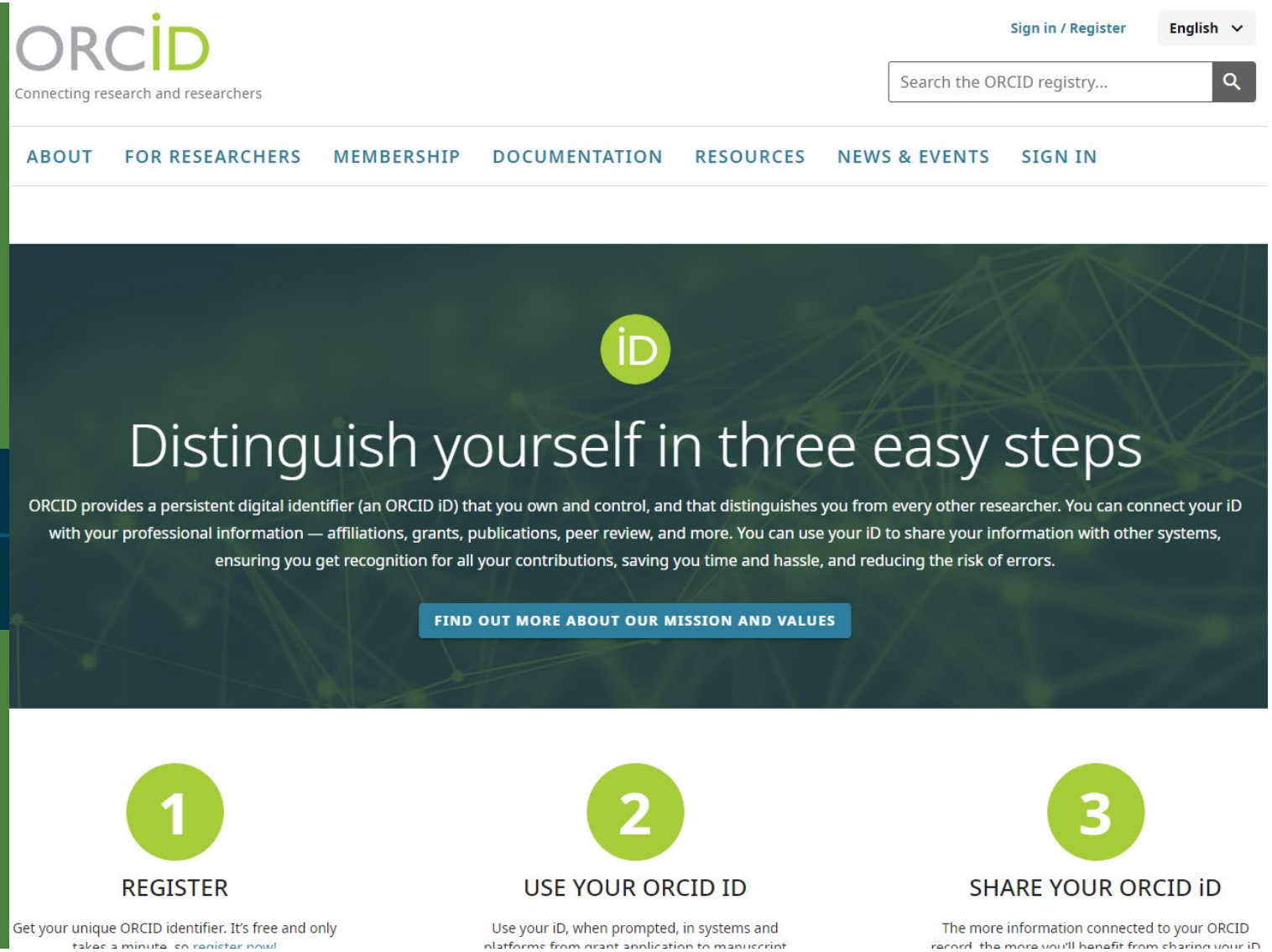
Contributor

Lesley Davidson

https://orcid.org/0009-0008-3243-5988

https://orcid.org/



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Temporal

Prehistoric

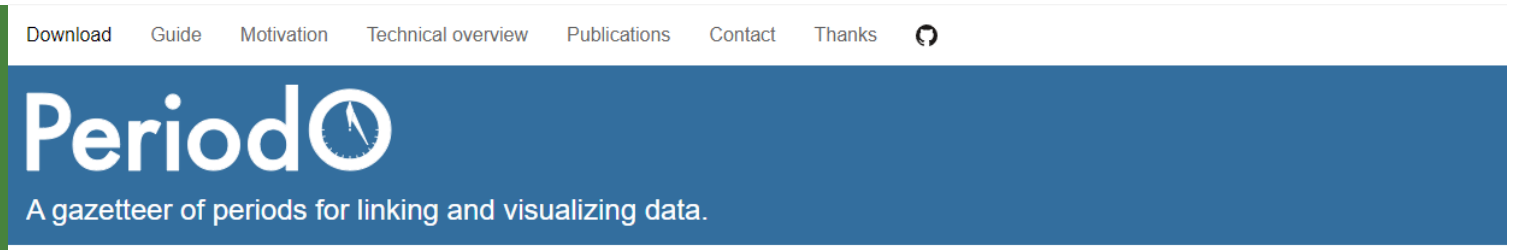
12700 BC – 400 AD | Island of Ireland

Defined by Carlin, Neil et al. Archaeological periods for the island of Ireland. 2022.

Permalink http://n2t.net/ark:/99152/p06hps8pg6n

Download JSON, Turtle

https://perio.do/en/



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Spatial

Permanent link

https://www.logainm.ie/52853.aspx

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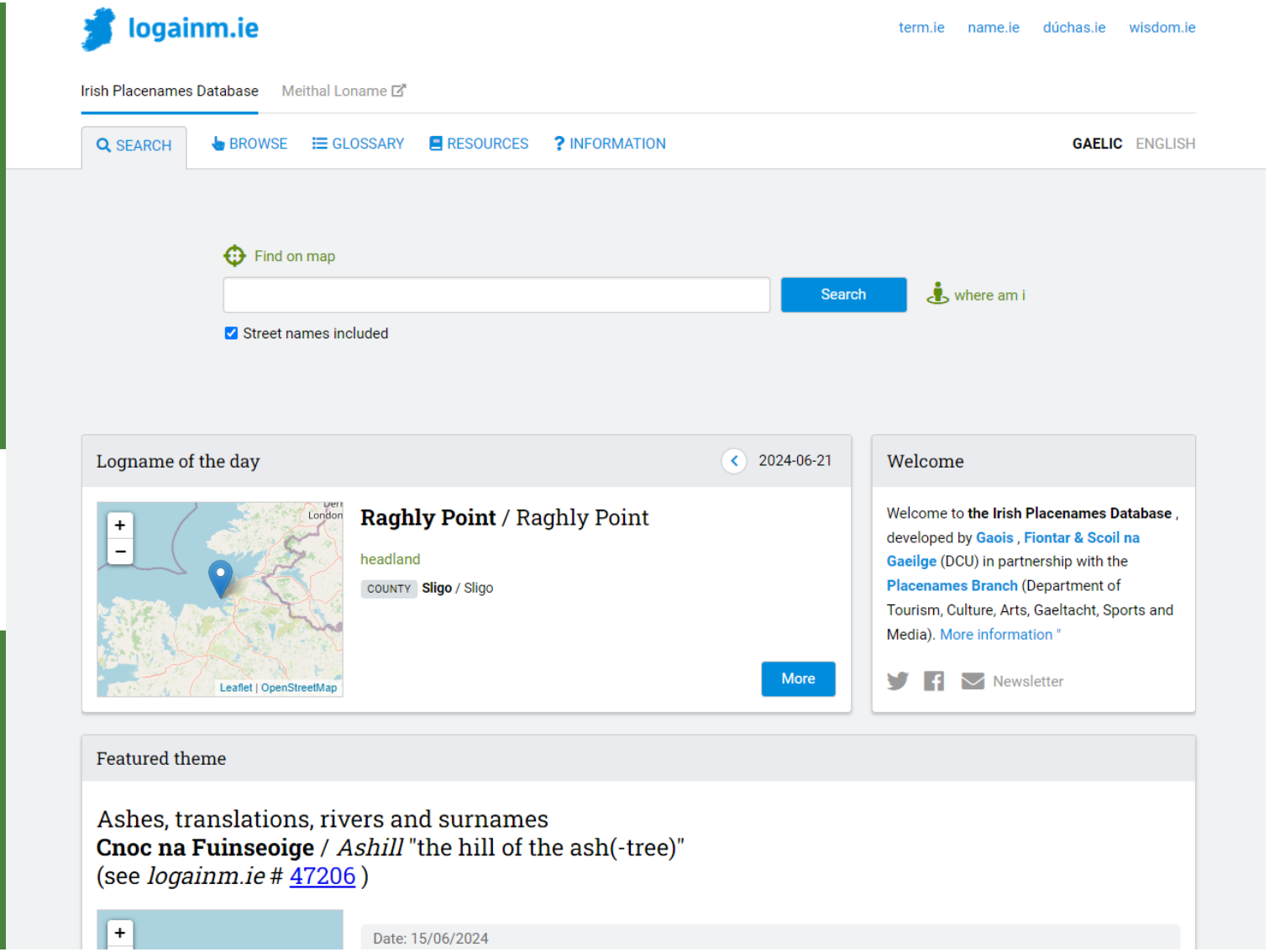

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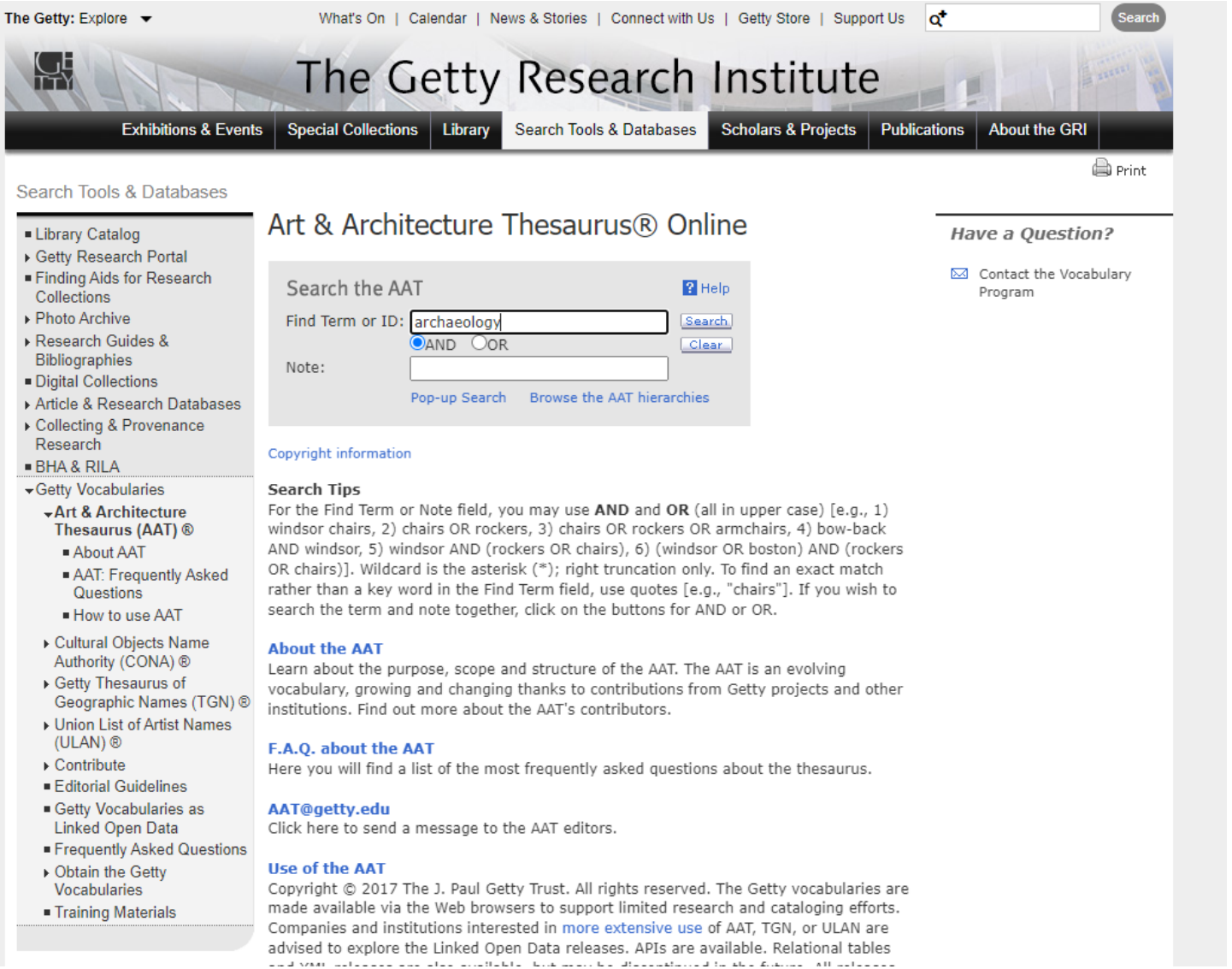
Subject

ID: 300054328
Page Link: http://vocab.getty.edu/page/aat/300054328

archaeology (social sciences, disciplines (concept), Disciplines (hierarch

https://www.getty.edu/research/tools/vocabularies/aat/?find=heritage&logic=AND&note=&page=1



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Athrú Aerálde agus Oidhreacht Chultúrtha

EU Funds: Ireland Wales Programme 2014-2020

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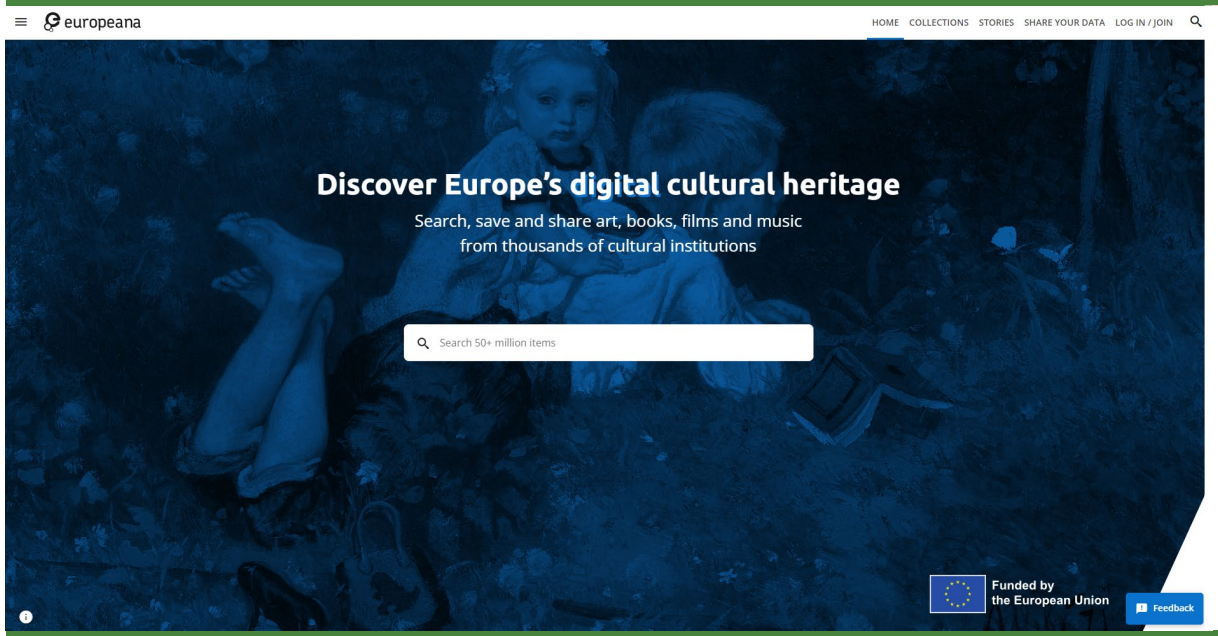

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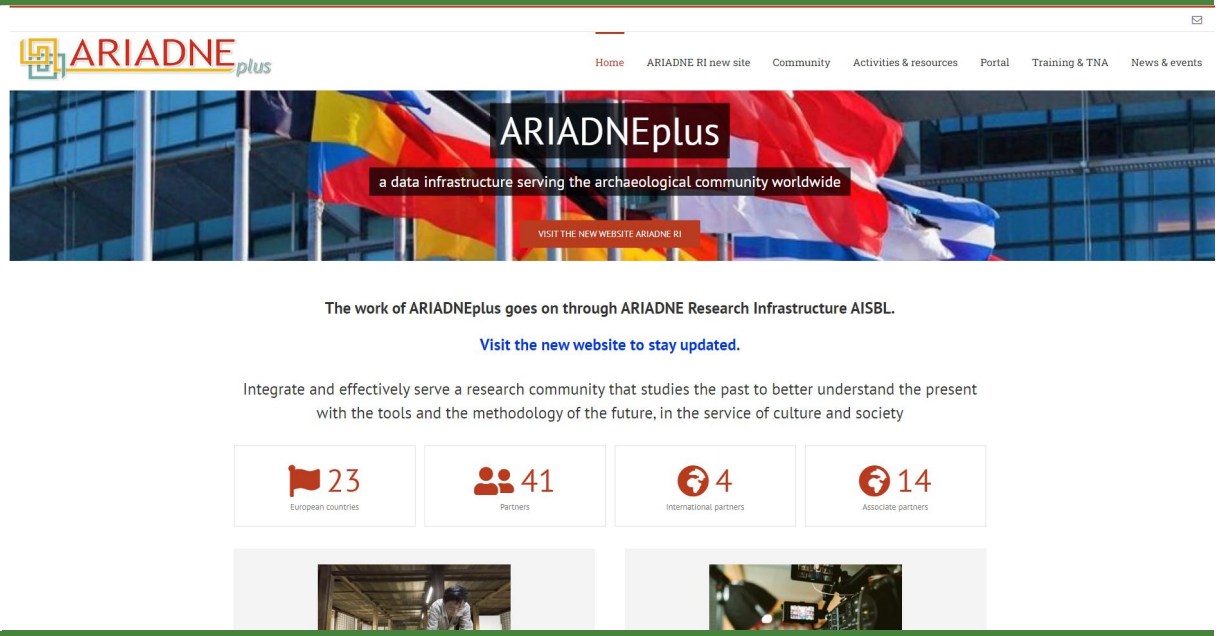

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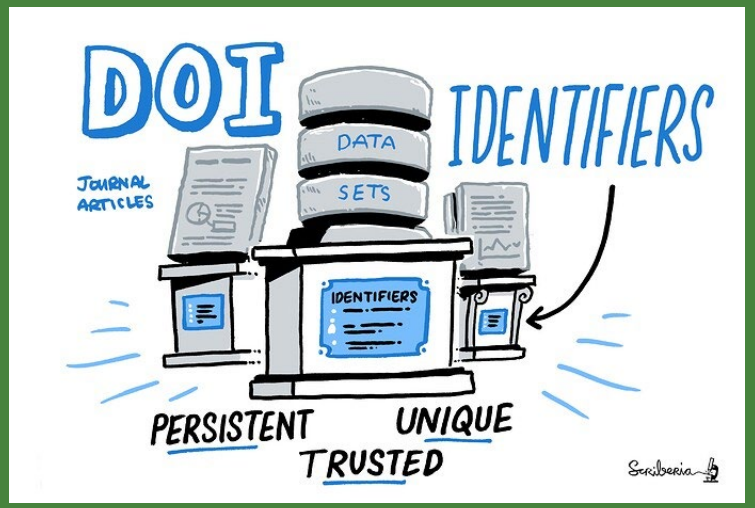

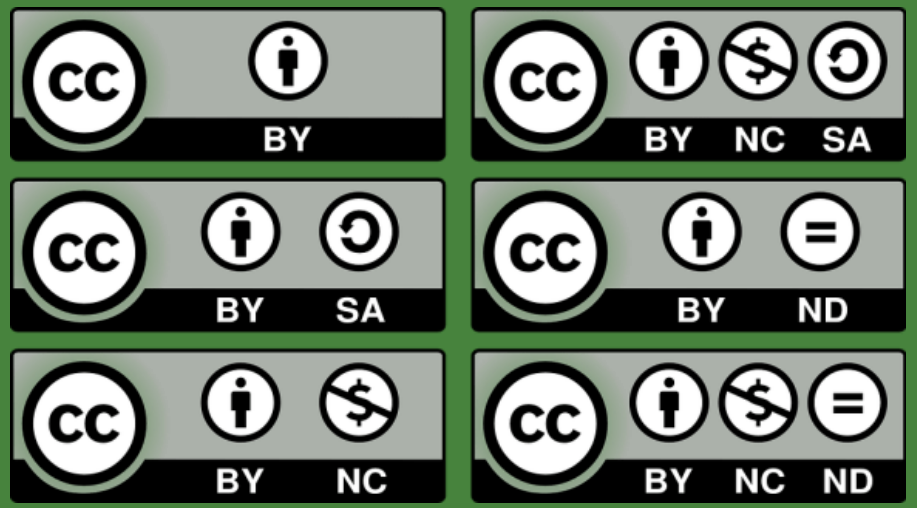

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Thank you

lesleydavidson@discoveryprogramme.ie

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