Plan Overview

A Data Management Plan created using DMPonline

Title: Project Nivica Archaeology

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Project abstract:

Project Nivica Archaeology, a key component of the broader 100+ Fshatrat initiative in Albania, focuses on archaeological exploration and community development in the Kurvelesh region, specifically around the village of Nivica. This project integrates cutting-edge three-dimensional recording and reconstruction techniques from the planning stage through the entire lifecycle of archaeological investigations.

The project's primary aim is to uncover and understand the influence of coastal Illyrian and Epirote cultures on the material culture of the inland mountain regions, challenging contemporary notions of isolation and connectivity. It seeks to unravel how Nivica's inhabitants have historically shaped their identity in response to various external powers, including the Epirote Republic, the Roman Empire, and the Ottoman Empire. Beyond its archaeological focus, Project Nivica Archaeology aligns with the United Nations Sustainable Development Goals, promoting heritage practice and community engagement.

Another aspect of the project is to study is the built landscapes of the upper Kurvelesh region, with a focus on the villages of Nivica and Rexhin with an aim to produce three-dimensional reconstructions centred on a domestic structure damaged in the First Balkan War in the old village of Nivica or 'Kala' site.

Operating since spring 2018, the project is supported by a collaboration of international and local institutions and community leaders. Despite challenges posed by global events, the project continues to contribute significantly to the cultural and historical understanding of the Upper Kurvelesh region, while also fostering community development and sustainable heritage management in like with the United Nations Sustainable Development Goals.

ID: 137960

Start date: 19-06-2016

End date: 20-11-2023

Last modified: 13-11-2023

Project Nivica Archaeology

Project Summary

Provide a brief description of the project and the research being carried out. State if research is part of a larger project, department(s) and funders involved and where data fits in.

Project Nivica Archaeology, a key component of the broader 100+ Fshatrat initiative in Albania, focuses on archaeological exploration and community development in the Kurvelesh region, specifically around the village of Nivica. This project integrates cutting-edge three-dimensional recording and reconstruction techniques from the planning stage through the entire lifecycle of archaeological investigations.

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Data Types

What types of data will be involved?

The data collected and produced will be the following:

- Geospatial survey data:
  - Total Station and/or GNSS GPS data.
  - UAV data.
  - Find and excavation data.
  - Geophysical survey data.
  - Created geospatial data from plans.
- Vector Drawings:
  - Plans and sections of buildings and trenches where applicable.
  - Harris Matrix for excavations where applicable.
  - Extended Harris Matrix for reconstructions.
  - Drawings of artefacts.
- Raster Images:
  - Photographs from UAV surveys.
  - Photographs from terrestrial surveys and excavations.
  - Photographs of artefacts.
  - Rendered images of reconstructions.
- Documents:
  - Reports from invasive and non-invasive archaeological work.
  - Reports from lighting analysis.
  - Reports form photogrammetry surveys.
  - Reports from structural analysis.
  - Reports from terrestrial and aerial surveys.
  - Reports of reconstruction paradata.
- Tabular data:
  - Database of building and landscape survey data.
  - Database of excavation and find data
  - Results from structural analysis.
  - Results from lighting analysis.
  - Calibration data for Photogrammetry.
  - Metadata for files.
  - File tree data for project folder.
- Three-Dimensional Reconstructions and Records
  - Three-dimensional model files.
  - Texture files for three-dimensional models.

What file formats will be used?

Data will be stored, recorded, and organised according to the best practices outlined by the Archaeology Data Service (ADS) for the storage and archiving of digital data, including raster and vector data, geophysical data, geospatial data, three-dimensional data, and alpha-numeric documentary data.

Data Type	Archival File Types
Alpha-numerical data	Plain Text (.txt) Delineated Text (.csv)
Documentary data that may consist of just text, or text and pictures.	Plain Text (.txt) Portable Document Format (.pdf/A)
Raster imagery data	Tag Image File Format (.tiff) Portable Network Graphics(.png) Adobe Digital Negative(.dng)
Vector imagery data	Scalable Vector Graphics (.svg) Portable Document Format (.pdf/A) Drawing Exchange Format (.dxf) Graph Modelling Language (.xgml)
Geodatabase	Shapefiles (.shp) [this is accompanied by up to eleven reference files that are equally archival] Delineated Text (.csv) GeoTIFF (.tiff)
Three-Dimensional models (Records or Reconstructions)	Wavefront (.obj) Stereolithography (.stl)
Code	R Code (.R)
Compressed Files	.zip
Metadata & Paradata	Delineated Text (.csv) Plain Text (.txt) Portable Document Format (.pdf/A)

What will be the size of the files?

Data Type	Estimated File Size (Uncompressed)
Alpha-numerical data	< 01 GB
Documentary data that may consist of just text, or text and pictures.	< 01 GB
Raster imagery data	< 40 GB
Vector imagery data	< 05 GB
Geodatabase	< 05 GB
Three-Dimensional models (Records or Reconstructions)	< 40 GB
Metadata & Paradata	< 01 GB
Total (Uncompressed)	< 90 GB
Total (Compressed)	~ 54 GB

Data Storage and Preservation

How will the data be stored and kept safe?

Data prior to processing will be stored on University of Bristol SharePoint servers with two off-site backup of all data.

Once archived all data will be stored in The University of Bristol Research Data Storage Facility (RDSF), which provides secure, long-term storage for research data. This major investment provides nightly backup of all data, with further resilience provided by three geographically distinct storage locations. A tape library is used for backup purposes and also for long-term, offline data storage. Only authorised users can access data stored within the RDSF. The RDSF is managed by Bristol's Advanced Computing Research Centre (ACRC) which has a dedicated steering group and a rigorous data storage policy (https://www.acrc.bris.ac.uk/acrc/RDSF_policy.pdf). The RDSF upholds and reinforces Bristol's wider Information Security Policy(www.bris.ac.uk/infosec/policies/docs/isp-01.pdf).

Data Organisation

How will data be organised?

Primary Folder - Level One	Level Two	Level Three	Level Four	Level Five	Level Six
3D_MODELLING					
	PROJECT FOLDER				
		EXPORTED MODELS			
			#0		

				CAMERAS	
				LIGHTS	
			REF_DIGI		
				REF_CAD	
				REF_DIGI	
				REF_HUMAN	
				REF_GEOREF	
			LANDSCAPE		
				PHASE01	
			COMPONENTS		
				PHASE01_STRUCTURE	
					STRUCTURE_STRUCTURAL ARI REINFORCEMENT_AREAREIN
					STRUCTURE_STRUCTURAL BEA SYSTEMS_STRUCTURALFRAMII
					STRUCTURE_STRUCTURAL COLUMNS_STRUCTURALCOLUI
					STRUCTURE_STRUCTURAL CONNECTIONS_STRUCTCONNE
					STRUCTURE_STRUCTURAL FAE REINFORCEMENT_FABRICREIN
					STRUCTURE_STRUCTURAL FOUNDATIONS_STRUCTURALF
					STRUCTURE_STRUCTURAL FRAMING_STRUCTURALFRAMII
					STRUCTURE_STRUCTURAL PAT REINFORCEMENT_PATHREIN
					STRUCTURE_STRUCTURAL REI
					STRUCTURE_STRUCTURAL STIFFENERS_STRUCTURALSTIF
					STRUCTURE_STRUCTURAL TRUSSES_STRUCTURALTRUSS

				PHASE01_ARCHITECTURE	
					ARCHITECTURE_CASEWORK_C
					ARCHITECTURE_CEILINGS_CEI
					ARCHITECTURE_COLUMNS_CO
					ARCHITECTURE_DOORS_DOOF
					ARCHITECTURE_FASCIAS_FASC
					ARCHITECTURE_FLOORS_FLOC
					ARCHITECTURE_FURNITURE_F
					ARCHITECTURE_GUTTERS_GU
					ARCHITECTURE_LANDING_STA
					ARCHITECTURE_RAILINGS_RAI
					ARCHITECTURE_RAILINGS_STA
					ARCHITECTURE_RAILINGS_RAI
					ARCHITECTURE_RAMPS_RAMP
					ARCHITECTURE_ROADS_ROAD
					ARCHITECTURE_ROOF SOFFITS
					ARCHITECTURE_ROOFS_ROOF
					ARCHITECTURE_ROOMS_ROOM
					ARCHITECTURE_STAIRS_STAIR
					ARCHITECTURE_STAIRS_STAIR
					ARCHITECTURE_SUPPORT_STA
					ARCHITECTURE_SUPPORTS_RA
					ARCHITECTURE_TERMINATION
					ARCHITECTURE_WALL SWEEPS
					ARCHITECTURE_WALLS_WALLS
					ARCHITECTURE_WINDOWS_WI
				OTHER	
					OTHER_PIPE ACCESSORIES_PIF
					OTHER_PIPE FITTINGS_PIPEFIT
					OTHER_PIPE INSULATIONS_PIP
					OTHER_PIPES_PIPES
					OTHER_PIPES_PIPECURVES
					OTHER_PIPING SYSTEMS_PIPIN
		MATERIAL LIBRARIES			
		RENDER OUTPUT			
		RENDER PRESETS			
		SCENE ASSETS			
			IMAGES		
				ANIMATIONS	
				IMAGES	

	STRUCTURAL ANALYSIS STUDY FOLDER				
		EXPORT			
		IMPORT			
		PARTS			
		ASSEMBLIES			
		REPORTS			
	LIGHTING STUDY FOLDER				
		MODELS			
		RESULTS			
			DATA		
			FIGURES		
3D_RECORDING					
	POINT-CLOUDS				
	MODELS				
	CONTROL POINTS				
	CALIBRATIONS				
DATA_DATABASE					
DATA_GEODATA					
	DATA_SHAPEFILES				

		EXCAVATION			
		GEOGRAPHY			
		GEOLOGY			
		SURVEY_PROCESSED			
		SURVEY_RAW			
		GRIDS			
	DATA_RASTERS				
		RASTER_DTM			
		RASTER_ORTHOPHOTOS			
DATA_GEOPHYSICS					
	GEOPHYSICS_PROJECT#				
		DATA_GEOPHYSICS			
			WORKING FILES		
			PRESERVATION FILES		

			IMAGE FILES		
		DOCUMENTS_GEOPHYSICS			
			PROJECT NOTES		
			PROJECT REPORT		
		METADATA_GEOPHYSICS			
			METADATA_GEOPHYSICS		
			GEODATA_GEOPHYSICS		
			METADATA_PROJECT		
			METADATA_FILEDESCRIPTION		
DATA_SURVEY					
	SURVEY_PROCESSED				
	SURVEY_RAW				
DOCUMENTS_FIELDWORK					
	MASONRY				

	EXCAVATION				
	BUILDING				
DOCUMENTS_REPORTS					
	REPORTS_SEASONAL				
	REPORTS_BUILDING				
	REPORTS_ANALYSIS				
	REPORTS_3D				
	REPORTS_CATALOGUES				
VECTOR_CAD					
VECTOR_TECHNICAL					
VECTOR_ILLUSTRATIONS					
RASTER_ARTEFACTS					
RASTER_SITEPHOTOS					
RASTER_UAV					
RASTER_PHOTOGRAMMETRY					
RASTER_RECTIFIED					

Data Documentation and Description

What documentation will you keep?

Data will be stored, recorded, and organised according to the best practices outlined by the Archaeology Data Service (ADS) for the storage and archiving of digital data, including raster and vector data, geophysical data, geospatial data, three-dimensional data, and alpha-numeric documentary data.

Project Level Metadata

Human Name	Metadata Name	General Description
Project Title	PROJECT_TITLE	The title (and any alternatives such as site codes) for the dataset.
Description	PROJECT_DESCRIPTION	A brief summary of the main aims and objectives of the research project from which the data collection arose together with a brief summary description of the content of the dataset.
Subject	PROJECT_SUBJECT	Keywords for the subject content of the dataset (qualified using controlled terms such as those supplied by the Forum on Information Standards in Heritage (FISH))

Coverage	PROJECT_COVERAGE	This is both spatial and temporal coverage. For spatial coverage it should include the current and contemporary name(s) of the country, region, county, town or village covered by the data collection and, where possible, a standardised reference should be used. If names or administrative units were different during the time period covered by the data they should be recorded separately. Site coordinates can also be entered as a National grid reference in a number of different ways e.g., as a point (useful to describe a small project area via a central coordinate); as a line (e.g., at least two coordinates to represent the linear limits of the site); as a polygon (for a more complex site area, three or more coordinates are used to describe the boundaries). If applicable, the full postal code for the site can be included. For temporal coverage it should include the dates/period covered by the dataset (using existing thesauri where possible such as the Forum on Information Standards in Heritage (FISH) Period List).
Projection System	PROJECT_PCS	Projected Coordinate System used.
Coordinate System	PROJECT_GCS	Geographic Coordinate System used.

Creators	PROJECT_ CREATORS	Details of the creator(s), compiler(s), funding agencies, or other bodies or people intellectually responsible for the data collection. Information should include forename, surname, affiliation, address, phone, fax, email, or URL.
Publisher	PROJECT_PUBLISHER	Details about any organisation which has published this data.
Contributors	PROJECT_CONTRIBUTORS	Other individuals or organisations who have contributed to the resource.
Identifiers	PROJECT_PROJECTID	Project or reference numbers or site codes used to identify the dataset.
Dates	PROJECT_DATES	Dates indicating when the dataset was created, when the archaeological project was carried out, processing dates, or computerisation dates as appropriate.
Copyright	PROJECT_COPYRIGHT	The name of the copyright holder for the dataset. If the collection was created during work by an employee, the copyright holder will normally be the employer. If the material is covered by a specific copyright (e.g., Crown copyright) please indicate this.

Relations	PROJECT_RELATIONS	If the data collection was derived in whole or in part from published or unpublished sources, whether printed or machine-readable, this element should include references to the original material, details of where the sources are held and how they are identified there (e.g., by accession number). If the collection is derived from other sources include an indication of whether the data represents a complete or partial transcription/copy and the methodology used for its digitisation. Also include full references to any publications about or based upon the data collection.
Language	PROJECT_LANGUAGE	Indication of which language(s) the dataset is in (e.g., English, French, Spanish).
Resource Type	PROJECT_TYPE	Whether the dataset is best described as primary data, processed data, an interpretation of data, or a final report.
Format	PROJECT_FORMAT	The formats the data within the project is saved in (e.g., WordPerfect 5.1, HTML, AutoCAD).

General File Level Metadata.

Human Name	Metadata Name	General Description
File Name	FILE_NAME	The name of the file e.g., report.doc
File Format	FILE_FORMAT	The file format e.g., PDF/A or Open Office Document
File Location	FILE_LOCATION	The file path i.e. directory and filename e.g., /adsdata/cottam_ba/jpg/fwking_plan.jpg
Software Name	FILE_SOFTWARE	The software used to create the file e.g., Microsoft Word 2007
Hardware used	FILE_HARDWARE	The hardware used to create the file, this is more significant when files are created directly by survey equipment such as laser scanners or GPS devices.
Operating System Used	FILE_OPSYS	The operating system under which the file was made e.g., Windows XP or Mac OS X 10.5.
Date of Creation	FILE_CREATED	When the file was made.
Date of Last Update	FILE_UPDATED	When the file was updated.
Linked Files	FILE_LINKED	This element should be used to highlight relationships between files.
Identifiers	FILE_IDENTIFIER	This element should be used to highlight whether a file is a source file or derived from another.
Creator	FILE_CREATORS	The file path i.e. directory and filename e.g., /adsdata/cottam_ba/jpg/fwking_plan.jpg.
Copyright	FILE_COPYRIGHT	Details of copyright or other rights and holder details.

Raster & Vector File Metadata.

Human Name	Metadata Name	General Description
Title	FILE_TITLE	The title of the image or a suitable caption.
Description	FILE_DESCRIPTION	Description of the image.
Coverage	FILE_COVERAGE	Site location and description. The address, or coordinates for the subject and a description of the subject. Coverage should also include any relevant period terms.
Projection System	FILE_PCS	Projected Coordinate System used.
Coordinate System	FILE_GCS	Geographic Coordinate System used.
Keywords	FILE_KEYWORDS	Keywords e.g., period, site or feature terms. Use suitable thesauri where they exist.
File Format and Version	FILE_VERSION	e.g., TIFF 6.0.
File Size	FILE_SIZE	Size of the file in bytes.
Resolution	FILE_RESOLUTION	The resolution of the image measured in pixels per inch (ppi).
Dimensions	FILE_DIMENSIONS	Dimensions of the image in pixels e.g., 400 x 700px.
Colour Space	FILE_COLOUR	The colour space used in the image e.g., RGB or grayscale.
Bit Depth	FILE_BITDEPTH	e.g., 24bit or 8bit.

Three-Dimensional Record File Level Metadata.

Human Name	Metadata Name	General Description
Subject	FILE_SUBJECT	Keywords for the subject content of the dataset (qualified using e.g., the English Heritage NMR Monument Type Thesaurus or the MDA Object Type Thesaurus.
Intended accuracy	FILE_Accuracy	The originally intended accuracy or scale that the survey was to achieve.
Coverage	FILE_COVERAGE	Site location and description. The address, or coordinates for the subject and a description of the subject. Coverage should also include any relevant period terms.
Projection System	FILE_PCS	Projected Coordinate System used.
Coordinate System	FILE_GCS	Geographic Coordinate System used.
Keywords	FILE_Keywords	Keywords e.g. period, site or feature terms. Use suitable thesauri where they exist.
Dates	FILE_DATES	Dates indicating when the dataset was created, when the archaeological project was carried out, processing dates, or computerisation dates as appropriate.
Identifiers	FILE_PROJECTID	Project or reference numbers or site codes used to identify the dataset.
Resolution	FILE_RESOLUTION	The resolution of the image measured in pixels per inch (ppi).
Dimensions	FILE_DIMENSIONS	Dimensions of the image in pixels e.g., 400 x 700px.
Colour Space	FILE_COLOUR	The colour space used in the image e.g., RGB or grayscale.
Bit Depth	FILE_BITDEPTH	e.g., 24bit or 8bit.

Three-Dimensional Record Control Point Metadata.

Human Name	Metadata Name	General Description
Coordinates	CONTL_X, CONTL_Y, CONTL_Z,	List the three-dimensional coordinates for each control point.
Covariance	CONTL_CX, CONTL_CY, CONTL_CZ	Provide full correlation if available (from survey adjustment or GPS baseline solution), otherwise provide estimated standard deviation or variance of each coordinate.
Location	CONTL_Location	Textual description of location.
Dates	FILE_DATES	Dates indicating when the dataset was created, when the archaeological project was carried out, processing dates, or computerisation dates as appropriate.
Identifiers	FILE_PROJECTID	Project or reference numbers or site codes used to identify the dataset.
Coverage	FILE_COVERAGE	Site location and description. The address, or coordinates for the subject and a description of the subject. Coverage should also include any relevant period terms.
Projection System	FILE_PCS	Projected Coordinate System used.
Coordinate System	FILE_GCS	Geographic Coordinate System used.

Geographical Information System File Metadata.

Human Name	Metadata Name	General Description
Scale	FILE_SCALE	Scale/resolution of data capture, e.g., 1:1250
Method	FILE_Method	Method of original data capture, e.g., Total Station Survey, etc.
Dates	FILE_DATES	Dates indicating when the dataset was created, when the archaeological project was carried out, processing dates, or computerisation dates as appropriate.
Identifiers	FILE_PROJECTID	Project or reference numbers or site codes used to identify the dataset.
Coverage	FILE_COVERAGE	Site location and description. The address, or coordinates for the subject and a description of the subject. Coverage should also include any relevant period terms.
Projection System	FILE_PCS	Projected Coordinate System used.
Coordinate System	FILE_GCS	Geographic Coordinate System used.
Identifiers	FILE_PROJECTID	Project or reference numbers or site codes used to identify the dataset.
Resolution	FILE_RESOLUTION	The resolution of the image measured in pixels per inch (ppi).
Dimensions	FILE_DIMENSIONS	Dimensions of the image in pixels e.g., 400 x 700px.
Colour Space	FILE_COLOUR	The colour space used in the image e.g., RGB or grayscale.
Bit Depth	FILE_BITDEPTH	e.g., 24bit or 8bit.

Three-Dimensional Model File Metadata.

Human Name	Metadata Name	General Description
Number of Vertices	FILE_VERT	The number of vertices (points) in the model
Number of Polygons	FILE_POLY	The number of triangles or polygons in the model

Geometry Type	FILE_GEOMTYPE	The type of geometry used within the model (wire frame, parametric, etc. if applicable).
Scale	FILE_UNITSCALE	What scale is represented by 1 unit.
Coverage	FILE_COVERAGE	Site location and description. The address, or coordinates for the subject and a description of the subject. Coverage should also include any relevant period terms.
Projection System	FILE_PCS	Projected Coordinate System used.
Coordinate System	FILE_GCS	Geographic Coordinate System used.
Basic, Technical, or Extended	FILE_TYPE	Is the model the master model produced just after raw data processing, or is it a derived model produced from the master (e.g. after hole filling, simplification, smoothing, etc.)?
Level of Detail	FILE_LOD	How detailed is the model, what is the resolution of the scan.
Layers	FILE_LAYERS	Does the model use layers? How many?
Colour and Texture	FILE_TEXTURES	Does the model contain colour or texture information? How is this stored? If raster texture files are used then these have to be archived separately.
Material	FILE_MATERIAL	Information about the material properties of the model and whether they match the physical properties of the actual object.

Light Source(s)	FILE_LIGHT	Number and accuracy of light sources used in the model.
Shader	FILE_SHADER	Have special or extended shaders been used?
Animation	FILE_ANIMATION	Whether animation is used in the model along with description of type (keyframe, motion capture).

Data Sharing

What are your plans for publishing data?

Data will be published through the University of Bristol Research Data Repository (data.bris). The data.bris Repository offers a means for Bristol's researchers to openly share non-confidential research data, without the need for external data users to undergo any form of authentication. Each deposit is accompanied by appropriate metadata and is assigned a unique Digital Object Identifier (DOI) via the DataCite scheme. All data published by the Repository is available under a permissive re-use license.

Are there any ethical, commercial, legal or IPR issues which might apply when publishing your data?

There are no commercial, legal or IPR issues with publishing this data, and no ethical issues relating to human participants or identifiable information of individuals. The location spots of finds of local and potentially national importance have, however, been provided in two formats. The first is a general location, simplifying the find-spot to 100m, and is available for the public. Precise find-spots have been restricted on a request basis.