

D1.6

Guidelines for Societal Acceptance and Ethical considerations

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Abstract

This document describes the ethical and privacy principles and procedures applied by the EMOTIVE project throughout its different stages and contexts of research. Moreover, in version 2.0 we have added a concrete Data Management Plan as requested in the first periodic review.

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² ATHENA	0.35
³ UGLA	0.5
⁴ EXUS	1



TABLE OF CONTENTS

1	EXECUTIVE SUMMARY.....	3
2	GOALS AND METHODOLOGY.....	4
3	PROCEDURES AND CRITERIA FOR IDENTIFICATION / RECRUITMENT OF RESEARCH PARTICIPANTS	5
4	INFORMED CONSENT/ASSENT PROCEDURES.....	6
5	PRIVACY AND INFORMED CONSENT POLICIES FOR ONLINE/ON SITE EXPERIENCES.....	7
6	DATA MANAGEMENT PLAN.....	8
6.1	Data Set Description	8
6.1.1	<i>Purpose of the data collection/generation</i>	8
6.1.2	<i>Data origination.....</i>	8
6.1.3	<i>Types and formats of generated/collected Data</i>	8
6.1.4	<i>Expected data size.....</i>	12
6.1.5	<i>Data utilization</i>	13
6.2	FAIR Data (Including Metadata)	13
6.2.1	<i>Data Discoverability (making data Findable).....</i>	13
6.2.2	<i>Data Accessibility</i>	14
6.2.3	<i>Data Interoperability.....</i>	15
6.2.4	<i>Data Re-usability.....</i>	15
6.3	Allocation of resources	15
6.4	Data Security	16
6.5	Ethical aspects	16
	ANNEX 1: EMOTIVE INFORMATION SHEET TEMPLATE	18
	ANNEX 2: EMOTIVE CONSENT FORM TEMPLATE (ADULT).....	20
	ANNEX 3: EMOTIVE CONSENT FORM TEMPLATE (MINOR).....	21
	ANNEX 4: EMOTIVE PARTNER ETHICS/DATA MANAGEMENT POLICIES.....	22

ABBREVIATIONS

DDI:	Data Documentation Initiative
DMP:	Data Management Plan
DPD:	Data Protection Directive
EAT:	EMOTIVE Authoring Tool
EC:	European Commission
EWA:	EMOTIVE Web App
FAIR:	Findable, Accessible, Interoperable, Re-useable
FPE:	Floor Plan Editor
MRP:	Mixed Reality Plugin
PI:	Principal Investigator
SBE:	Storyboard Editor
SDE:	Story Design Editor
VSE:	Visual Scenario Editor
WIZ:	Wizards



1 Executive summary

The purpose of this deliverable is to describe the ethics requirements, the data protection procedures and the data management plan that will be applied by EMOTIVE throughout its different stages and contexts of research. These include: 1) end-users' onsite experiences; 2) end-users' online experiences; 3) user-centred design workshops (with cultural heritage and creative industries professionals) and evaluation of the tools and aforementioned experiences (with end-users). End-users include both visitors of cultural sites (i.e. consumers of experiences) and authors.

Most procedures for data management and informed consent procedures linked to the evaluation of experiences and design workshops are similar in their general principles, and only minor details should be adapted to each specific case (e.g. researcher/institution involved, environment, type of evaluation strategy, etc.). Until now, these procedures have been successfully implemented in the following events:

- EMOTIVE experience Design Workshop – University of Glasgow/Hunterian Museum (February 22-23, 2017).
- Evaluation of the Online Chatbot Experience for Çatalhöyük (June 24 – July 13, 2017).
- Off-site formative evaluation at the University of York and On-site formative evaluation at Çatalhöyük (Turkey) of the Çatalhöyük Collaborative Experience (July 11 and August 1-8, 2017).
- On-site Hunterian experience during Explorathon 2017 at the Hunterian Museum (Sept 29, 2017).

Additionally, we take account of the management of user data collected during the EMOTIVE experiences, which requires the automatic acquisition and/or the manual introduction of the user's personal data, both for personalization and/or for the successful development of the activity. These procedures are being developed and tested, in particular, for EMOTIVE's Çatalhöyük use cases, and will be updated in subsequent releases of this deliverable, as well as extended to incorporate other use cases in the future.

The present deliverable includes:

- Details on the procedures and criteria that will be used to identify/recruit research participants for the evaluation of EMOTIVE experiences.
- Details about the measures taken to prevent the risk of enhancing vulnerability or stigmatisation of individuals and/or groups.
- Detailed information on the informed consent procedures that will be implemented for the participation of humans and for the collection, storage and protection of personal data during the evaluation of EMOTIVE experiences.
- The way consent/assent will be ensured in case children and/or adults unable to give informed consent are involved.
- Detailed information on the procedures that will be implemented for data collection, storage, protection and informed consent during EMOTIVE online and/or onsite activities.
- Detailed information on the procedures that will be implemented for data collection, storage, protection, retention and destruction and confirmation that they comply with national and EU legislation.

The document will be revised and updated with new information on the ethics procedures and the templates of the informed consent forms and information sheet, as well as copies of ethics approvals, as the project progresses. Two more releases will be produced in M24 and M36.

2 Goals and Methodology

The principal objective of the EMOTIVE project is to research, design, develop and evaluate methods and tools that can support the cultural and creative industries in creating Virtual Museums which draw on the power of 'emotive storytelling'. The driving force of EMOTIVE is its experience-oriented, user-centred approach, which aims at ensuring that its users' needs are perfectly addressed, thus maximising the acceptance of the tools, systems and experiences developed and their potential for use in pragmatic situations. To support this approach, a user-centred design philosophy is being realised throughout the entire course of the project, both in the design and the evaluation phases. This entails the active participation of end-users (both authors and visitors) at different stages (i.e. workshops in front-end, formative and summative phases) of the iterative development process.

Formative evaluation takes place during the development of the tools and their components. It seeks to provide insight into the design and development work towards these prototypes, translating the scenarios crafted in WP3 into a set of measurable qualities. User-centred prototyping complements other qualitative evaluation techniques (think-aloud protocols, comment cards) in assessing the usability of the tools and tentative concepts as well as fostering a tight evaluation feedback loop.

Following the completion of the prototypes (both the beta and final version of the EMOTIVE integrated system), end-users at the collaborating sites are observed while using them (in situ and remotely) while feedback will also be sought from stakeholders and professionals. The end users may participate in interviews and focus group discussions in order to examine the effectiveness of the developed approach in terms of its museum and communicational goals, as well as the assessment of usability and user experience issues.

It is foreseen that user needs research and evaluation will be undertaken primarily in the partner countries and, in particular, where the cultural and creative partner institutions of the Consortium and the User Group members are located. Users taking part in the project's evaluation studies will be subject to remote or co-located observation, and possible tracking of their interaction with the EMOTIVE systems (e.g., click-tracking in the virtual museum, physical location tracking on a cultural site visit). Observation will be mainly based on video footage and may also include logging of the user's computer / device activity.

The experimental phase of the EMOTIVE project has a social nature and does not imply any direct risk for or intervention in the participants' health. As minors will be accompanied by their legal tutors at any time, their safety should be guaranteed by continuous direct monitoring.

Following the user-centred design method, a concise plan will be drawn for all evaluation experiments and more specific protocols must be built for each event. Approval from the relevant institutional Ethics Committees will be sought before workshops take place. However, EMOTIVE will primarily collect its quantitative and qualitative evaluation data through the following streams:

1. Observations of participants' interactions with EMOTIVE's cultural sites and digital experiences, recorded variously by hand, by audio recording, by video recording, by photography, and/or by screen capture and click-tracking.
2. Semi-structured interviews with participants.
3. Questionnaires delivered by hand or online.
4. Focus groups conducted in person or online.
5. Comment cards delivered by hand or online.

3 Procedures and criteria for identification / recruitment of research participants

The design and evaluation of the EMOTIVE experiences and technical components will be conducted with the participation of: 1) the two cultural partners (YORK and UGLA); 2) a User Group comprising cultural organizations, and creative companies (SMEs); 3) representatives of visitors to the cultural settings involved in the project.

Regarding the User Group, an initial body of cultural and creative organisations had already expressed interest in joining the EMOTIVE User Group by providing Letters of Support in the proposal preparation phase, and other organizations/professionals in the relevant partners' countries (e.g. UK, Greece) are recruited in line with the requirements of each relevant EMOTIVE event. More specifically, this group comprises curators, cultural technologists, interaction designers, or other staff members of cultural organizations (museums or other institutions) and creative companies that are either participating in the project consortium or the User Group, or have agreed to take part in the evaluation efforts of the project.

Participants belonging to general audiences are recruited through the cultural partners and members of the User Group. The users that take part in the evaluation efforts of the EMOTIVE on-line and/or on-site experiences are primarily adult volunteers, or minors accompanied by their adult guardians. As detailed in Section 4 below, only adults able to grant informed consent, and only children accompanied by parents or guardians able to grant informed consent, will be invited to participate in EMOTIVE. The EMOTIVE experience system does not suppose any a priory conditioning regarding origin, gender or cultural background. Consequently, the consortium will ensure that different cultural/social groups are adequately represented and, more specifically, that they are balanced in terms of gender. There is no obvious risk of vulnerability or stigmatisation associated with EMOTIVE's methodology, nor are already-vulnerable individuals or groups a target of EMOTIVE's activities.

In all cases, participants will be recruited in person, or by email, telephone, Voice over Internet Protocol, or other means of online communication by a member of the EMOTIVE team. Participants will be recommended to the EMOTIVE team via either convenience, quota, snowball, purposive sampling or random sampling.

4 Informed Consent/Assent Procedures

During the welcome phase of the events, participants will firstly be informed by the EMOTIVE researchers of the purpose of the project and of the evaluation; of the kind of data collected (video-recording and questionnaires / interview / focus group / observations); of the intended use of this information; of the measures undertaken for the protection of their privacy and data; and of their right to withdraw from the project or to forbid the use of their data at any point. They will be asked if they would like further clarification.

They will subsequently be handed a project information sheet (see Annex 1 for template to be adapted for each use case) and, as appropriate, an adult or minor consent form (see Annex 2 and 3 for templates to be adapted for each use case) to read. They will be asked to note agreement with its terms, and then sign and date the consent form. Special care will be taken when participants are underage. In this case, explanations will be given to both the potential participant and his/her legal guardian (i.e., parents in the case of family visitors, teachers in the case of educational groups, etc.). Afterwards, they will be handed the consent form for minors so that they can read it together and sign it (both the minor and the legal guardian) if they agree with the terms.

The project information sheet contains the aims of the research; the institutions involved; the usefulness of visitors' participation and/or observation; a statement of the confidential and scientific use of data; a statement that participation is voluntary and can be interrupted at any time; a clarification about the lack of compensation (economic or of any other sort); a statement about the exclusive use of the information within and for the project; and an explanation about whom to contact and the procedures to undertake in case of incident or just to obtain more information about the project. The sheet also provides contact details for the relevant institutional Ethics Board under whose auspices the project researchers are working.

The project's consent forms for adults and minors ask for confirmation that participants understand the nature of EMOTIVE, and that their data may be used both now and in the future for research and publicity related to the project. The forms also clarify conditions of anonymity, provide contact details for the project's Ethics Manager, and require signatures from participants and researchers.

As per standard protocol with questionnaire-based evaluation, consent is considered to be granted the moment that participants begin to complete the survey form. Those participating in EMOTIVE's digital experiences will also be automatically prompted to consent to data collection before or as they are navigating (using, experiencing) the digital system.

If a participant chooses not to consent, or wishes to withdraw their participation at any point during the activity, they are free to do so and any data gathered up until that point will be destroyed (by shredding, deletion or other appropriate mode of destruction). EMOTIVE's data collection will be conducted in different countries under the auspices of different project partners over its three-year term. Such data collection is also subject to approval from the relevant Ethics Boards of those partner institutions which are leading the research; namely, ATHENA, University of York, University of Glasgow, INRIA, and CNR. Copies of these approvals will be provided as they become available. Details of EMOTIVE's partners' ethics bodies, policies and contact persons are outlined in Annex 4.

5 Privacy and Informed Consent Policies for Online/On Site Experiences

Privacy and informed consent policies for online/onsite experiences requiring the acquisition and management of the user's personal data were defined from the state-of-the-art practices in the field, as well as from our own experience during the design, development, and testing of EMOTIVE experiences.

The Çatalhöyük Collaborative Experience was the first experience designed by EMOTIVE in which user data management issues arose. The experience comprises three parts:

- Pre-visit: users fill in a questionnaire about their hobbies and interests, from which a profile and a set of objects for the experience are suggested.
- Visit: users explore the site (or, in the future, its digital version) with the help of 3D (printed) objects that they have personalized by "attaching" their profile to it on NFC stickers.
- Post-visit: users can revisit their experience or explore those associated to objects that other visitors have left behind or otherwise "attached" their profile to.

Our preliminary evaluation and previous pilot testing with users (July and August 2017) has confirmed the importance of the following aspects:

1. The user needs to be clearly informed about the purpose of data acquisition and the use of their data throughout and after the experience.
2. The user needs to be informed each time the system collects personal information from her/him (e.g. when entering the experience using a social network page to build a preliminary profile).
3. Every time the user engages with the experience they need to be given the possibility to accept or refuse the acquisition of personal data before the experience goes on.

6 Data Management Plan

This section presents the Data Management Plan (DMP) describing the framework and policies of how the data will be handled in EMOTIVE. Moreover, it describes the expected sources, where the data will be collected, and the principles of making them Findable, Accessible, Interoperable and Re-usable (FAIR). This information is dynamic and is expected to be enriched within the project lifetime. Last but not least this DMP highlights the importance of ethical issues and how they affect the usage of data within the project.

The collected/generated/processed data are categorized in four types:

- Research data and metadata: data retained by and accepted in the scientific community as necessary to validate research findings
- Dissemination data
- Manuscripts: deliverables, publications and internal documents
- Creative data: creative content, i.e. text, images, sound, 3D models etc. that have been produced for the EMOTIVE experiences
- Technical data: Software of the EMOTIVE platform and its components but also experiences and applications.

This DMP is based on the EC guidelines¹.

6.1 Data Set Description

6.1.1 Purpose of the data collection/generation

The data management plan is strongly linked with the objectives of EMOTIVE. We will be collecting data throughout the life of the EMOTIVE project to:

- support the research and development work, working collaboratively among the project partners,
- organize formative and summative evaluation sessions with the end-users
- prepare workshops
- feed into the deliverables,
- write research publications,
- present our work at conferences and other academic, cultural heritage and related fora,
- use for dissemination,
- create creative content.

6.1.2 Data origination

In EMOTIVE numerous data sources of a heterogeneous nature will be taken into consideration for serving efficiently the project's objectives. Some data already exist (e.g. cultural heritage site visitor data) that can be used to inform our initial research questions and develop our experiences. However, as we are developing unique tools and experiences, we will be generating new qualitative, quantitative and creative data as well as software.

6.1.3 Types and formats of generated/collected Data

RESEARCH DATA

Research data will include qualitative and quantitative data recorded as evaluation feedback on the EMOTIVE platform. This data will be of various types and formats, such as:

¹http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

- semi-structured interviews with end users and focus group with end users who have used the experiences to be conducted during the formative and summative evaluation (audio and video recorded in the following formats MP4, wav, jpg, TIFF)
- observation and tracking sheets of end users using EMOTIVE tools(e.g. MS Word docs, PDFs, Google docs, PDF)
- questionnaires completed by end users who have used the experience to gauge their emotional reaction while using the experience, to be completed at the end of the experience (MS Word docs, PDFs, jpg, MS Excel files)
- information sheets and object cards created about the EMOTIVE cultural sites, such as info sheets about the Antonine Wall site or the Çatalhöyük, timeline, maps, images and text with info about specific objects (e.g. MS Word docs, PDFs, Google docs, MS Excel spreadsheets, Google sheets, jpg, png, MS PowerPoint presentations, MS Publisher docs)
- ethics informed consent forms
- video, audio and image files from experience prototyping workshops with users, recording user experiences during formative and summative evaluation (MP4, wav, jpg, TIFF)
- transcriptions of audio and video files (MS Word docs, PDFs, Google Docs.)
- Analogue material and related notes created by both EMOTIVE team members and external participants (users) during these workshops (e.g. A3 sheets, postit notes, visitor comments on postcards). These will be digitised (PDF, TIFF, JPEG)
- Focus group and interview transcripts will be analysed initially in word processing packages (MS Word) and then in a qualitative analysis software (such as NVivo)
- system logs raw data will be aggregated into Excel spreadsheets

DISSEMINATION MATERIAL

EMOTIVE will produce dissemination material including a website, newsletters, social media content on Twitter, Facebook and Instagram, short films, images of the EMOTIVE tools in use by authors and users. Widely used formats such as MOV or AVI will be used for the short films, while JPG, PNG or TIFF will be used for the images. All other dissemination material for user workshops will be shared in PDF format.

MANUSCRIPTS

Manuscripts will consist of all the deliverables, publications and internal documents. Microsoft Word (DOCX) and PDF will be used for the final versions.

The public deliverables of the project are:

No	Title	Leader	Type	Due Date	
D1.6	Guidelines for Societal Acceptance and Ethical Considerations - First Release	YORK	R	12	Oct '17
D1.7	Guidelines for Societal Acceptance and Ethical Considerations - Second Release	YORK	R	24	Oct '18
D1.8	Guidelines for Societal Acceptance and Ethical Considerations - Third Release	YORK	R	36	Oct '19
D2.1	EMOTIVE Website and social media profiles	NOHO	DEC	3	Jan '17

D2.2	Communication material cycle #1	NOHO	DEC	6	Apr '17
D2.3	Communication material cycle#2	NOHO	DEC	22	Aug '18
D2.4	Communication materail cycle #3	NOHO	DEC	33	Jul '19
D3.1	User Requirements & Scenarios - alpha	YORK	R	6	Apr '17
D3.2	User Requirements & Scenarios - beta	YORK	R	16	Feb '18
D3.3	User Requirements & Scenarios - final	YORK	R	26	Dec '18
D3.4	User Workshop #1	YORK	OTHER	4	Feb '17
D3.5	User Workshop #2	ATHENA	OTHER	24	Oct '18
D3.6	User Workshop #3	UGLA	OTHER	35	Sep '19
D3.7	Pilot experience(s) prototypes	NOHO	DEM	12	Oct '17
D3.8	Pilot experience(s) based on platform beta release	NOHO	DEM	23	Sep '18
D3.9	Pilot experience(s) based on platform final release	NOHO	DEM	34	Aug '19
D5.1	Conceptual Framework & Guide - First Release	YORK	R	6	Apr '17
D5.5	Conceptual Framework and Guide - Second Release	ATHENA	R	24	Oct '18
D6.2	Low-cost Physical Artefact Reproduction	CNR	R	12	Oct '17
D6.4	Augmented Reality Experience with Physical Artefacts	CNR	R	30	Apr '19
D9.1	Evaluation Framework & Guidelines	UGLA	R	12	Oct '17
D9.2	Formative Evaluation results	YORK	R	15	Jan '18
D9.3	Summative Evaluation of Beta release (platform and experiences)	UGLA	R	24	Oct '18

D9.4	Summative Evaluation of Final release (platform and experiences)	UGLA	R	36	Oct '19
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CREATIVE DATA

EMOTIVE will generate substantial creative content for the production of EMOTIVE experiences and will also re-use data that already exist in creative and cultural collections.

Title	Description	EMOTIVE component ² that consumes	EMOTIVE component that produces	Format that
Experience scenarios	Stories produced for the experiences	SDE, SBE, MRP, VSE	N/A	Text
Experience images	<ul style="list-style-type: none"> ▪ Images produced for the experiences incl. interactive floor plans, panoramas and images ▪ Existing artefacts from the cultural sites 	SBE, VSE, MRP, FPE	N/A	jpg, png, tiff, svg, gif, ico, bmp, xms, animated GIF
Experience audio	Audio produced for the experiences	SBE, VSE, MRP	N/A	mp3, wav, aif, mid, wma, m4a, ogg
3D models	<ul style="list-style-type: none"> ▪ 3D models produced for the experiences ▪ Existing 3D models from the cultural sites 	SBE, VSE, Mold Generation Tool	N/A	3ds, obj, wrl, collada, dae, fbx
3D prints	<ul style="list-style-type: none"> ▪ 3D printed (meta)molds for producing physical copies of artifacts ▪ 3D printed artefact copies 	N/A	Mold Generation Tool	N/A
Chatbot content	Content produced for the chatbot	Chatbot	N/A	text, jpg, png, tiff, gif, animated GIF
Interpretation Card	Description of the context and interpretation	ICAT	N/A	text

² **EWA**: EMOTIVE Web App, **FPE**: Floor Plan Editor, **ICAT**: Interpretation Card Authoring Tool, **MRP**: Mixed Reality Plugin, **SBE**: StoryBoard Editor, **SDE**: Story Design Editor, **VSE**: Visual Scenario Editor, **WIZ**: Wizards



	information around one or more on-site exhibits			
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TECHNICAL DATA

In EMOTIVE, we will develop the platform and its components therefore different software will be generated will be generated from the different parts and tools of the EMOTIVE platform. The technical datasets table below describes the data generated by each EMOTIVE component are the following:

1. EMOTIVE Authoring Tool software, including software of the ICAT, SDE, SBE, FPE, WIZ, VSE, MRP
2. EMOTIVE Mold Generation Tool software
3. EMOTIVE Mobile Application software
4. EMOTIVE Web Application software
5. EMOTIVE Chatbot software
6. Backend software, stored in BitBucket cloud
7. Portal software
8. SDK software
9. Curiosity Driven Information Exploration software

6.1.4 Expected data size

Some estimations and examples showing the expected size of the technical data within CRISS are provided below by each responsible partner. It is important to highlight the fact that the final size of the data depends on several parameters therefore, it will be more accurately defined by the end of the project.

RESEARCH DATA

One of the three workshops planned for the duration of the project has produced approximately 2 GB of data. We anticipate that all research data will be approx. 10GB.

DISSEMINATION DATA

It is not possible to estimate the size of the dissemination data as each partner of the EMOTIVE consortium can produce them using the type and format they prefer: video, pictures, PPT, Pdf, online documents, etc.

CREATIVE DATA

It is not possible to estimate the size of the creative data that will be produced during the project lifetime. Up to now we have produced approximately 5GB of data.

TECHNICAL DATA

Emotive will produce a technical platform including the different components developed during the project. Hence, technical data will include not only the tools developed during the project but also experiences and applications.

At the moment we are not able to give a precise estimation of the size of this technical data. Indeed, it will depend on the experiences to be carried out before the end of the project and on the evolution of each component of the technical platform. Nevertheless, at this point we can foresee that this content will not exceed 10GB.



6.1.5 Data utilization

Most of the collected and generated data will be used by the EMOTIVE team members for evaluation reasons while the creative data will be consumed by the EMOTIVE platform.

Finally, the data collected will be used to generate articles, posters, presentations or documentation related to the widespread communication of news and other project results through social networks.

- ⚠ The project has opted out of the H2020 Open Access pilot but we are keen to provide access as widely as possible to suitable and appropriate research data.

6.2 FAIR Data (Including Metadata)

6.2.1 Data Discoverability (making data Findable)

In order for the data to be findable and be later reused and exchanged, we need to describe them with sufficient metadata. During the formative evaluation phase the metadata procedure and file formats for note-taking, recording, transcribing, storing visual data from participatory techniques, and anonymising semi-structured interview and focus group discussion data will be developed and agreed.

We will make use of **Digital Object Identifiers** as recommended and created by the digital repository. Initially research data metadata, **naming conventions and versioning** will be explained in a text file that accompanies the data. A methodology text file will accompany the data in order to help future researchers understand its creation.

In the case of manuscripts, the owner of the document will be the one controlling the version of the document, while files created by partners adding contributions to the original will be named by attaching “_initials” to the filename:

Date[YYMMDD]_**[DescriptiveTitleIfNecessary]**_PartnerOrPersonInitials.ext

For example,

20180322_D3.1_UGLA.docx or

20170630_D3.1_Scenarios_YORK.docx

Other aspects concerning document and version numbering of reports and deliverables are described in the EMOTIVE Handbook and Quality Assurance Plan (D1.1) Regarding the **structure**, all data will be stored using a folder structure following WPs, deliverables and tasks whenever possible and depending on the chosen storage system. Thus, every file will be stored under its corresponding WP Folder and subsequent Work or Deliverable folder.

In order to facilitate **easy discoverability** of the data we will use clear metadata when depositing the final data set. This will include Title of dataset; Creator/s; Dates of creation; Place; Content; format and file type.

We will record metadata in a .txt file that accompanies the data collection. We will include information that will describe key aspects of the data, using **DDI best practice**, including:

- Principal investigator
- Funding sources
- Data collector/producer
- Project description
- Sample and sampling procedures (if appropriate)
- Substantive, temporal, and geographic coverage of the data collection
- Data source(s)
- Variables

- Technical information on files
- Data collection instruments
- Citations to related publications
- Technical information on files, e.g., information on file formats, file linking
- Data collection instruments
- Interviewer guide
- Coding instrument

A **data list** will be created and will accompany the qualitative data such as interviews and image collections. This data list will include:

- interview ID
- age
- gender
- occupation, organisation
- location
- place of interview
- date of interview
- transcript file name
- recording file name

Regarding the technical data and software, the data will be stored, by each responsible partner, following their internal policy guidelines and providing metadata making them discoverable.

6.2.2 Data Accessibility

EMOTIVE project partners are committed to the Open Access approach to maximise the impact of the project results and corresponding exploitation and dissemination items.

EMOTIVE will follow the green Open Access approach whenever possible and will upload its deliverables to the project's website and institutional repositories set-up at several partner's sites and will also exploit the contractual right to a post-print online publication after a grace period (e.g. 6 or 12 months). Open access journals and conferences (Gold Open Access) will be targeted for dissemination as long as appropriate publication options, with high levels of impact are available. As Open Access publication rights are complex in particular if the green road is followed the partners will rely on their internal Open Access consultant offices. Some of the consortium members already have a policy in place for open access to publications and cover the possible publisher publication fees institutionally.

The data will be made available for independent verification and re-use through the project's website and also through partners' repositories for at least two years after the end of the project. Moreover, we shall store the relevant data also at some of the suggested places: Registry of Research Data Repositories³, OpenAIRE⁴, etc. to ensure that the scientific community has long-term access to the data.

The data collected from users will be stored at partner institutions. Physical data, such as videos, questionnaires and transcriptions, will be stored in a locked cupboard in a locked room at each institution. Only the PI of each institution and researchers with appropriate clearance will have access to the data. On the other hand, storage and security of electronic data will be achieved through the security and data protection software that each institution has. In general, electronic data belonging to the EMOTIVE project will be located within a secured environment with controlled access, and protected by powerful firewalls and antivirus software managed by the institutions. A backup service will be provided so as to

³ <http://www.re3data.org/>

⁴ <https://www.openaire.eu/>



prevent data loss from accidental deletion or corrupted file systems. Data coming from the EMOTIVE project (Word, Excel, SPSS files) will be coded anonymously and stored in a specific password-protected folder within the partners' servers. The computers used for the storage of experimental data will be specially secured against non-authorized access. Only authorized personnel (mainly the PI and authorized researchers) will have access to the records.

The Consortium has identified some data that may be retained by project partners in accordance to the grant and consortium agreement. This is likely to be data from technical partners and will be private due to the potential for commercialisation under a licensing agreement and risks of IPR infringements. If applicable, the technical data will be accessed following the internal policy guidelines of each responsible partner.

The Consortium has also identified some of the data to be preserved since they can be further used by the partners and because the data can be of interest of the research community for different reasons. Data which is able to be made publicly available will be made available at the end of the project via the data repository. It is not foreseen that any special software tools will be needed to access the data.

Some individuals may be reluctant to have their data shared. Such concerns will be resolved for the interviews and focus groups by ensuring all transcripts are anonymous and identifying detail are removed or given pseudonyms in the transcript.

6.2.3 Data Interoperability

The most appropriate means of exchange of the data generated through the project will be online, through the data repository.

Standard vocabulary for all data types in the data set will allow inter-disciplinary interoperability.

The resources used in EMOTIVE are fully interoperable since they are based on standard image, text, 3D models, audio or video formats:

- Supported image formats: JPG, JPEG, PNG, GIF, Animated GIF, TIF, ICO, BMP, XMS
- Supported audio formats: MP3, WAV, AIF, MID, WMA, M4A, OGG
- Supported video formats: MP4, MPG, MOV, WMV, RM, FLV
- Supported 3D models formats: 3DS, OBJ, WRL, COLLADA, DAE, FBX
- Supported text formats: PDF, DOC, PPT

6.2.4 Data Re-usability

Copies of all licenses will be included in the relevant data files in order to retain and satisfy appropriate reuse of material. For those data that will be made available for use, EMOTIVE will keep them open for re-use for 5 years as stated in the Grant Agreement.

6.3 Allocation of resources

EXUS, as coordinator, is responsible for implementing the data management plan (DMP) and metadata standards. In principle, all partners are responsible for data generation, and data quality. PI at each institution will direct the data management process for that institution, with the relevant Research Assistant responsible for ensuring metadata production, day-to-day cross-checks, back-up and other quality control activities are maintained. The lead country researchers will be responsible for routine supervision of the dataset development.

Dataset storage and backup, data archiving and sharing will be in the majority of cases the responsibility of the partners who owns the data. However, the University of Glasgow has provided One Drive for Business for collaborative research projects free of charge to share and store their data securely.



Exploiting the available facilities from each partner will not put any additional costs for storing and preserving EMOTIVE data.

6.4 Data Security

Data security ensures that the data is accurate and reliable and is available when those with authorized access need it. A data security plan includes facets such as collecting only the required information, keeping it safe, and destroying any information that is no longer needed.

The procedures related to protection of personal information that EMOTIVE will follow in order to duly comply with the Data Protective Directive 95/46/EC (DPD) are explicitly described in sections 3, 4 and 5.

Storage and maintenance of EMOTIVE data will be handled according to the data category, privacy level, need to be shared among the consortium, and its size.

In EMOTIVE every partner who will create their own data will be responsible for storing them using its own company's storage facilities and following already in place internal procedures for the security and preservation of the data. Participants who will provide the data will be informed of the data collected, the purpose of the data collection and where their data are stored.

The EMOTIVE Consortium has opted to use the University of Glasgow's Microsoft One Drive For Business cloud based file sharing platform, containing large raw data sets meant to be shared among the Consortium (e.g. audio files of evaluation interviews, object images, video recordings of observations). Microsoft OneDrive for Business is approved for storing all types of University data. Data is stored in the EU. All research partners have been granted access to the University of Glasgow's EMOTIVE One Drive for Business account via the University of Glasgow PI and so transfer of any sensitive data is managed via this system. Our data on One Drive will be backed up regularly by the University of Glasgow and Microsoft servers.

Especially for the technical data, communication protocols between the local servers and the EMOTIVE ecosystem will have to be secured to ensure data transfer privacy either based on FTPS, HTTPS protocols.

6.5 Ethical aspects

Data collection will be done in compliance with article 8 in the Charter of Fundamental Rights in the European Union (specifically the article concerning the protection of personal data). In addition to the EU charter, the collection of data will be done in compliance with data protection acts, legislation, and directives, both at European and national level (for example, Directive 95/46/EC of the European Parliament and the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data). The primary data-gathering partners of EMOTIVE are bound by the data management and protection policies of their individual institutions. Details of these policies and relevant institutional authorities are outlined in Annex 4.

The EMOTIVE project is very sensitive to privacy issues and will consider these with great care. No personal data will be processed or analyzed without the users' prior permission. Such permission will be sought through the reading and retention of a project information sheet (see Annex 1 for template, which may be adapted slightly for each use case) and signing of a project consent form (see Annex 2 and 3 for templates, which are adapted slightly for each use case). In the specific case of data collection, participants will be: 1) asked to consent to the processing of data that are gathered during in-person sessions or that result from their online activities (article 7); 2) informed that restrictions to the processing apply (article 8); and 3) informed that they may access those data (both in physical as well as digital format) at all times (article 12). See Annex 2 and 3 for the generic templates of the project's consent forms for adults and minors.

At no time will the user be asked to enter her/his real name or any other information of that nature unless explicitly agreed to on EMOTIVE's project consent forms. Participants in the evaluation studies will be



guaranteed their anonymity through the use of typical methods such as the allocation of personal, confidential identification numbers or, more often and as specified on the consent forms, pseudonyms. If needed, at the user's request, age, gender identification and other sensitive personal data may be encrypted to protect the private nature of the collected data.

Information will only be used for the purposes covered by the project and future research derived from the project, which includes analysis, dissemination in scientific papers and outreach and publicity activities. No person-specific information will be made public (unless explicitly agreed to on EMOTIVE's project consent forms) or given to a third party. Given the professional obligations to retain primary data (e.g., after publication in scientific journals or for project audits), data will be securely held by the EMOTIVE consortium for present and future research-related use. This fact is clearly stated in the consent form. The destruction of the data will be irreversible.

The authentication and authorization policies put in place will guarantee the protection of personal data during the EMOTIVE lifetime. After the end of the project, the "Right to be forgotten" Directive will be fully satisfied. Any personal data (such as names, emails, contact details) of people who have participated in the interview activities or answered the online questionnaire will be destroyed.

Protection of personal data in EMOTIVE relies on following legal basis:

- Charter of Fundamental Rights of the European Union, and more specifically Article 8 Protection of personal data (http://www.europarl.europa.eu/charter/pdf/text_en.pdf).
- Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:en:HTML>).
- EMOTIVE Grant Agreement (H2020 research and innovation programme, No 727188) and more specifically Article 39 — Processing of Personal Data.

Ethical approval has been granted by the University of Glasgow and the University of York. See deliverables D10.1 "H Requirement 1" and D10.2 "POPD Requirement 2" for more information regarding individual institutional ethical requirements.

Informed consent for participation in user workshops and evaluation scenarios will always be sought using the EMOTIVE consent forms for either adults or minors. These consent forms ask participants to consent to the long term preservation of their data for future research purposes and publications. See deliverables D10.1 "H Requirement 1" and D10.2 "POPD Requirement 2" for more detail on the consent and ethical requirements.

Last but not least, EMOTIVE has established an Ethics Committee to oversee all aspects of data collection, protection and dissemination. It is led by the project's Ethics Manager and comprised of one representative of each of the main data gathering partners – ATHENA, University of York and University of Glasgow – as well as the Project Coordinator. In advance of each project deliverable entailing research participation, the committee will review the ethical implications of related activities, ensure relevant ethics approval has been granted by each institution, and handle any concerns that arise in the course of research.

ANNEX 1: EMOTIVE INFORMATION SHEET TEMPLATE

What are the aims of the EMOTIVE Project?

EMOTIVE aims to create digital experiences that are useful to cultural and creative professionals and visitors to cultural sites.

For visitors, EMOTIVE will offer dramatic, emotional stories that can be experienced while at a cultural site or remotely. Wherever visitors are, they can follow storylines, look for clues and explore environments alone or with family and friends.

For heritage professionals, the EMOTIVE application will provide a powerful storytelling engine and a set of rich digital media tools that can be used to create detailed characters and narratives featuring archaeological sites or collections of artefacts.

Your participation in evaluating this project will enable EMOTIVE to develop the most appropriate and meaningful digital experiences of cultural sites for different types of users around the world.

Who is doing the research?

EMOTIVE is an international project composed of teams from 8 organisations spread across 6 European countries (Greece, England, Scotland, France, Italy and Ireland). The teams are based at the [ATHENA Research Center](#), [University of York](#), [University of Glasgow](#), [EXUS](#), [INRIA](#) (French Institute for Research in Computer Science and Automation), [CNR](#) (National Research Council of Italy), [DIGINEXT](#), and [NOHO](#). Each excels in their respective fields, including academic scholarship and research, industry, and cultural/visitor experience..

How will I be asked to provide data?

You will be asked to participate in one or more of the following activities aimed at collecting quantitative and qualitative evaluation data:

- (1) observations of your interactions with EMOTIVE's cultural sites and digital experiences
- (2) interviews that we conduct with you in person or online
- (3) questionnaires that you are asked to fill out by hand or online
- (4) focus groups that we conduct with you in person or online

Data from these activities may be recorded by members of the EMOTIVE team on paper (by hand), online (by digital data entry), by audio recording, by video recording, by photography, and/or by screen capture and click tracking.

Your permission for this will be sought before data collection begins, through the signing of a consent form or completion of a digital user agreement. Your participation is voluntary and no compensation – economic or of any other sort – will be provided.

Will my participation be confidential?

You will have the opportunity to remain anonymous if you participate in EMOTIVE. Your preferred form of identification can be specified on EMOTIVE's Project Consent Form. When involved in online data collection, you will be informed each time the system collects personal information. At no time will you be asked to enter your real name or any other identifying information, unless you explicitly give your consent.

Anonymity will be maintained through the use of a confidential identification number which will be assigned to you personally. Non-anonymous data will not be made available outside of the project team to any individual unless you explicitly give your consent.

What will happen to my data?

The data will be recorded and, if necessary, transcribed for use in EMOTIVE's project outputs, including its website, other forms of media, publicity, reports, conferences and publications.

Data collection will be done in compliance with article 8 in the Charter of Fundamental Rights of the European Union. In addition to the EU charter, the collection of data will be done in compliance with the data protection acts, legislation, and directives of our EMOTIVE team institutions. You have the right to access your data at any time by contacting any member of the EMOTIVE team, including its Ethics Manager (see contact details below).

Data will be securely stored at the EMOTIVE team's home institutions, and will be retained in the long term for use in future research and publicity. Physical data, such as videos, questionnaires and transcriptions, will be stored in locked cabinets in locked rooms at each institution. Copies of the data will also be stored electronically on both password-protected hard drives and a password-protected online storage account.

EMOTIVE will hold copyright over any publications, presentations, productions, videos, photographs, recordings, and other forms of media and publicity produced as a result of this project.

Can I withdraw from the project?

You may choose to withdraw from EMOTIVE at any point without consequence, even after your data have been collected. Should you wish to withdraw, all references to your data can be removed at your request and the data destroyed.

Who should I contact if I have questions?

Should you have any questions or concerns about the research or your contribution to it, please contact EMOTIVE's Ethics Manager, Dr Sara Perry, at sara.perry@york.ac.uk or at the Department of Archaeology, University of York, King's Manor, York, UK, YO17EP. This research has also been approved by the Ethics Committee of [REDACTED]. A representative of this committee can be contacted on [REDACTED].

ANNEX 2: EMOTIVE CONSENT FORM TEMPLATE (ADULT)

PARTICIPANT NAME:

PARTICIPANT EMAIL ADDRESS:

PARTICIPANT SIGNATURE:

DATE:

Please read and tick the boxes below to indicate your agreement:

- I have read and understood the project information sheet [insert date/version/no] and have had the opportunity to ask questions about the research.
- I agree to take part in EMOTIVE and for data collected by EMOTIVE team members and/or produced by me during EMOTIVE activities (hereafter called my data) to be used to inform the project's findings and publicity.
- I understand my participation is voluntary and I may withdraw at any time without consequence.
- I understand that EMOTIVE will hold copyright over any publications, presentations, productions, videos, audio, photographs, recordings, and other forms of media and publicity, both print and online, produced as a result of this project.
- I understand my data will be retained in secure storage for use in future academic research and publicity.

I give consent for my data (including photos, video or other audio and visual records) to be used in research, presentations, publications and other media and publicity arising from EMOTIVE, both print and online, under the following conditions of anonymity (mark **ONLY ONE** as appropriate):

- I agree to be identified as follows [redacted] when my data are circulated. I understand that I might be recognisable in photo, video and other visual and audio records.
- I agree for my data to be used under condition of anonymity. I understand that my identity will be altered/obscured in photo, video and other visual and audio records.
- I ask to be consulted further before my data are used.

EMOTIVE RESEARCHER NAME:

EMOTIVE RESEARCHER SIGNATURE:

If you have any questions or concerns, please contact EMOTIVE's Ethics Manager, Dr Sara Perry, at sara.perry@york.ac.uk or at the Department of Archaeology, University of York, King's Manor, York, UK, YO17EP.



ANNEX 3: EMOTIVE CONSENT FORM TEMPLATE (MINOR)

PARENT/GUARDIAN NAME:

PARENT/GUARDIAN EMAIL ADDRESS:

PARENT/GUARDIAN SIGNATURE:

RELATION TO PARTICIPANT:

PARTICIPANT NAME:

DATE:

Please read and tick the boxes below to indicate your agreement:

- I have explained the project information sheet **[insert date/version/no]** to the above-named participant and acknowledge that they understand the research and have had the opportunity to ask questions about it.
- I give permission for the above-named participant to take part in EMOTIVE and for data collected by EMOTIVE team members and/or produced by the participant during EMOTIVE activities (hereafter called the above participant's data) to be used to inform EMOTIVE's findings and publicity.
- The above-named participant understands that their participation in EMOTIVE is voluntary and they may withdraw at any time without consequence.
- I give consent for the above-named participant's data to be used in research, presentations, publications and other media and publicity arising from EMOTIVE under condition of anonymity.
- The above-named participant understands that EMOTIVE will hold copyright over any publications, presentations, productions, videos, audio, photographs, recordings, and other forms of media and publicity, both print and online, produced as a result of EMOTIVE.
- I understand that the above-named participant's data will be retained in secure storage for use in future academic research and publicity.

EMOTIVE RESEARCHER NAME:

EMOTIVE RESEARCHER SIGNATURE:

If you have any questions or concerns, please contact EMOTIVE's Ethics Manager, Dr Sara Perry, at sara.perry@york.ac.uk or at the Department of Archaeology, University of York, King's Manor, York, UK, YO17EP.



ANNEX 4: EMOTIVE PARTNER ETHICS/DATA MANAGEMENT POLICIES

	Name of the individual/committee with oversight of the ethics process at EMOTIVE partner institutions	Contact email address for the ethics officer/committee at institution	Web address for the ethics committee institution	Access point for institutional ethics policy	Access point for institutional data management policy	Links to other relevant documentation	
UNIVERSITY OF YORK	Department of Archaeology Ethics Committee & Arts and Humanities Ethics Committee	hrc-ethics@york.ac.uk	https://www.york.ac.uk/hrc/ahec/	Code of practice and principles for good ethical governance: https://www.york.ac.uk/staff/research/governance/policies/ethics-code/	University of York's Data Protection Act: University Policy, Procedures and Guidelines https://www.york.ac.uk/records-management/dp/policy/	University of York Information classification & handling scheme: https://www.york.ac.uk/about/departments/support-and-admin/information-services/information-policy/info-policy-and-you/classification/	
Çatalhöyük (cultural partner)	as above (falls under York's purview)	as above	as above	as above	as above	as above	
UNIVERSITY OF GLASGOW	Dr Iain Banks- College of ArtsEthics Research Officer	arts-ethics@glasgow.ac.uk	http://www.gla.ac.uk/colleges/arts/research/ethics/college%20research%20ethics%20committee/	http://www.gla.ac.uk/colleges/arts/research/ethics/ethicspolicy/	http://www.gla.ac.uk/services/datanagement/rdm-at-gu/	University of Glasgow Ethics Policy http://www.gla.ac.uk/colleges/arts/research/ethics/ethicspolicy/	
HUNTERIAN MUSEUM/ANTONINE WALL (cultural partner)	as above (falls under Glasgow's purview)	as above	as above	as above	as above	as above	
ATHENA	Athena R.C. Ethics Committee	d.kassianidi@athena-innovation.gr	under construction	under construction	under construction	under construction	The ATHENA ethics committee is being established at this period.
INRIA	Operational Committee for the Evaluation of Legal and Ethical Risks	N/A	https://www.inria.fr/en/institute/organisation/committees/coerle/presentation-of-the-coerle	N/A	N/A		
CNR	Commission for the Ethics of the Research and the Bioethics	cnr.etica@cnr.it	https://www.cnr.it/en/node/78	https://www.cnr.it/sites/default/files/public/media/doc_istituzionali/linee-guida-integrita-nella-ricerca-cnr-commissione_etica.pdf?v=1			