D6.7 Data Management Plan

WP6 Management

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1. Summary

This is Deliverable 6.7 the Data Management Plan (DMP) for the CHAMELEONS project. CHAMELEONS is a 2-year project which aims to design, deliver and evaluate a range of interdisciplinary, intersectoral and international modules which will broaden PhD graduate skills, improve their employability in both academic and non-academic environments and equip them to solve societal challenges in the area of connected health.

This DMP describes the data which will be acquired or generated during the course of the CHAMELEONS project, it illustrates how we will manage, describe, analyse, and store this data, together with the mechanisms we will use at the end of our project to share and preserve the data.

The DMP is a living document which will be reviewed during the project in order to facilitate updates. The DMP is reviewed at each Consortium Meeting. These meetings are convened twice a year and are attended by a representative of each partner at a minimum. The agenda for these meetings includes an update from each Work Package (WP) leader, a coordination plan for the next period as well as a review of the DMP.

2. Introduction

The objective of CHAMELONS is to develop new and innovative educational interventions to improve the learning experience offered by higher education with the intention of shaping more adaptable, entrepreneurial and employable graduates, ready to meet the challenges of the future. Ten years from now, jobs will be more knowledge and skills-intensive than ever before. Globalisation and technological advances indicate that there will be changes in sectoral structure and demand for new types of skills we are not even currently anticipating. By 2020, 35% of all jobs will require high-level qualifications.

Typically, less than half of doctoral graduates will be employed in academia immediately after graduation, with less than 10%-15% achieving a long-term academic career.[1] This leaves 85-90% of PhD graduates seeking employment outside the academic setting, for example in industry and government. It is therefore clear that these graduates need to possess many of the required skills for purposeful employment outside academia. A gap has, however, been identified in that current doctoral curricula which does not foster big thinkers and creative problem-solvers, graduate attributes that society needs. Indeed, it has been suggested that "PhDs are manufactured; they drop off the end of a conveyer belt, but no one cares what happens to graduates after that." It is becoming apparent that there is a growing need to re-imagine a PhD education that incentivises doctoral students to engage with research consumers, not only within their discipline, but also, across other disciplines and sectors to have real social impact for an improved society.

At a professional and research level, international, interdisciplinary and inter-sectoral networks are on the increase with established researchers collaborating within and across disciplines to increase and improve innovation, creativity and knowledge. More recently, this is being mirrored by the establishment of interdisciplinary and inter-sectoral doctoral research networks. the intention of which is to train PhD graduates for careers both within-and outside

academia and who are equipped to address societal challenges. The EU already has an excellent early-stage researcher training program, the Marie Sklodowska-Curie ITN program, which trains early stage research in an interdisciplinary, intersectoral and international context however CHAMELEONS offers additional opportunities for PhD/Post-Doctoral students to further develop their skills widening their opportunities to create a bespoke education program tailored to their own and society's needs. Such collaborative doctoral programs can assist the knowledge society in finding innovative ways of approaching the world's problems by asking creative questions and finding creative solutions within multiple employment contexts.

However, to date, there is a lack of research in the area of the interdisciplinary, inter-sectoral doctoral education and the question remains: how do we best design these programs to ensure that the PhD students develop into big thinkers? How do we cultivate the knowledge and skills to be innovative and creative? These essential skills will not only open up and maximise employment outside academia, they will also address the EU's societal challenges. Europe has **high-level skills needs** in many EU Member States there is an unmet demand for graduates in a number of areas including science, technology, engineering, and the medical professions. However the question remains how do facilitate doctoral students to develop into big thinkers? How do we cultivate the knowledge and skills to be innovative and creative? These essential skills will not only open up and maximise employment outside academia, they will also address the EU's societal challenges. Europe has **high-level skills needs** in many EU Member States there is an unmet demand for graduates in a number of areas including science, technology, engineering, and the medical professions.

3. Definition of Data

Research data comprises all recorded descriptive, numerical, or visual material collected and used in the conduct of research within CHAMELEONS, irrespective of medium. It may include physical and electronic records, digital images, audiotape, videotape, and photographs. Data will be collected for the purposes of the CHAMELEONS project only.

4. Data being Collected/Generated within CHAMELEONS

There are 5 academic institutions within the CHAMELEONS consortium: University College Dublin (UCD), Maynooth University (MU) University of Porto (UP), University of OULU (OULU), and Aristotle University of Thessaloniki (AUTH). There are 5 industry partners including Beacon Hospital (BEAC), Salumedia (SALU), Escuela Andaluza De Salud Publica (EASP), Irish Platform for Patient Organisations, Science and Industry (IPPOSI) and Santa Casa Da Misericordia Da Amadora (SCMA). The work within CHAMELEONS has been divided into **7 work packages**. Each academic institution will lead or take some part in each work package (WP) and will be responsible for the data collection and storage management of those data. WP5 will be led by SALU and all beneficiaries will contribute to this WP.

The Work Packages include:
WP1: Define the Gap (MU); **WP2:** Design (OULU); **WP3:** Deliver (UP); **WP4:** Evaluate/Recommend (UCD); **WP5:** Communication, Exploitation and Dissemination (SALU) **WP6:** Management and **WP7**: Ethics (UCD).

Data that will be collected in CHAMELEONS is detailed in Table 1.

CHAMELEONS will recruit four discrete groups of participants:

- Doctoral/Post-Doctoral students who will be recruited to CHAMELEONS from across five academic institutions within Europe: University College Dublin (UCD), Ireland; Maynooth University (MU), Ireland; Aristotle University (AUTH), Greece; University of Oulu (OULU), Finland; and University of Porto Portugal.
- Doctoral Graduates and Doctoral programme Co-ordinators from across the five academic institutions.
- Potential employers of Doctoral/Postdoctoral graduates from across the world.
- Employers of CHAMELEONS graduates.

All individuals who agree to participate in CHAMELEONS will be required to give informed, written consent to their participation.

Doctoral and Postdoctoral applicants to the CHAMELEONS modules will be accepted through the https://www.chameleonsproject.eu/ website. The application process will require the submission of an application form, an expression of interest and a curriculum vitae. The applications will be held centrally and securely in UCD (Novelle UCD). These will be shared as required with other partners in order to enable an interview process to take place. This data sharing is governed is by a Data Sharing Agreement.

Table 1: Illustrates the work packages where data will be collected, the type of data collected and the institution responsible.

Work Package	Type of Data	Institution Responsible for collecting the data
Work package 1	**Anonymous survey data** from PhD graduates	**AUTH**
Work package 1	**Anonymous survey data** from postgraduate programme directors	**AUTH**
Work package 1	**Potentially Identifiable Audio recorded interviews** with industry employers	**OULU**
Work package 3	**Identifiable Personal data, contact details, curriculum vitae** details for doctoral students recruited to CHAMELEONS	**UCD**
Work package 4	**Potentially Identifiable Questionnaire data** Doctoral student evaluation of modules taken across the consortium	**UP**
Work package 4	**Potentially Identifiable Questionnaire data** Doctoral student evaluation of CHAMELEONS modules	**UCD**
Work package 4	**Potentially Identifiable Questionnaire data, interview data** Relating to career track	**MU**

Work package 4	**Publicly available** date impact tracking, publications	**MU**
Work package 4	**Potentially Identifiable Audio recorded Employer Interview data**	**AUTH**
Which Parties have access to which Data	All beneficiaries have signed a data sharing agreement.	**In practice only the academic institutions will collect and share data, UP, OULU, AUTH, MU, UCD will share the data.**

4.1 Data Storage Security and Backup

All personal data collected in CHAMELEONS will be stored in an encrypted format. It will be encrypted in order to protect it from a security breach (e.g. laptop theft, unauthorised log in etc.)

All the Doctoral and Post-Doctoral students who agree to participate in CHAMELEONS (the students who will take to specifically designed CHAMELEONS modules) will be allocated a unique identification number. All data collected in relation to each individual will be deidentified and will be stored using their associated identification number. A key which links the identification number and participants name which will be held by the Principal Investigator (PI). This key will be held in a separate location to where the data is stored (i.e. separate computer and/or in hard copy in a locked filing cabinet in the PIs Office). This is necessary owing to the fact that CHAMELEONS Doctoral student participants may be followed up a number of times over the course of the project. This key will be stored in an encrypted format and separately (on another computer) to the participants data. Audio files will be encrypted as they are potentially identifiable data. Responsibility for the security of data for each institution lies with the Principal Investigator in each institution. UCD Data Storage and Retention Guidelines[2] will be used to guide the CHAMELEONS consortium policy in relation to deidentification and secure storage of data.

As soon as possible the key information will be securely destroyed thereby irrevocably anonymising the data in line with GDPR compliance.

The access Pass keys for stored data will be Stored in hard copy format in a secure locked filing cabinet in the PI offices in each of the academic's institutions.

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[2]http://www.ucd.ie/researchethics/t4media/REC%20Guidelines%20%20Data%20Storage%20and%20Retention%20260410.pdf

4.2 Data Access and Sharing

The Principal Investigator in each institution controls access rights to the research data. The CHAMELEONS Principal Investigator within each institution (UCD, Tara Cusack; MU, Nicola Mountford; OULU, Minna Isomursu; AUTH, Ioanna Chouvarda; UPORTO José Machado da Silva), is the custodian of the research data and is responsible for its management, including security, storage, and retention of the data. The Principal Investigator is also responsible for informing research participants of their obligations in relation to the data. It is particularly important that access rights to personal data are strictly confined only to those who have been granted access[3]. Explicit written permission of the data subject is required for processing of personal data. Processing includes storing, retrieving, accessing, and retaining personal data. Data will be shared by agreement through a Data Sharing Agreement signed by all beneficiaries within the CHAMELEONS consortium. In so far as is possible the results of the CHAMELEONS project will be shared on the public EU platform (Horizon Results Platform).

4.3 Archiving Preservation/Retention and Destruction of Research Data

The CHAMELEONS Guidelines for the Storage and Retention of Data have been developed in consultation with the UCD Research Ethics Committee Storage and Retention Guidelines[4].

Tara Cusack (UCD) and her colleagues in each of the beneficiary organisations MU, Nicola Mountford; OULU, Minna Isomursu; AUTH, Ioanna Chouvarda; UP José Machado da Silva will be responsible, for securing storing, and for, control of access to the data generated by the research, until it has been destroyed.

The data collected during the CHAMELEONS project will be retained for a period of 10 years following completion of the project as recommended by UCD's Research Data Management policy.[5] All data will be stored in a deidentified, encrypted format. This will facilitate reference to the data for drafting publications and dissemination of the results of the project. All participants will be made aware of this in the Participant Information Leaflet. Once the period of retention has expired, the research data will be deleted securely and confidentially in a manner appropriate to its format. Anonymized and unidentifiable data will be made available according to the FAIR principles (**F**indable, **A**ccessible, **I**nteroperable and **R**eusable).[6] The data will be published in a data repository for both verification and reuse.

Tara Cusack (UCD) and her colleagues in each of the beneficiary organisations MU, Nicola Mountford; OULU, Minna Isomursu; AUTH, Ioanna Chouvarda; UPORTO José Machado da Silva will have responsibility for destroying data at the end of this study and will also be responsible for uploading anonymised data to the data repository. Table 2 illustrates the

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[3] www.ucd.ie/itservices and www.ucd.ie/itservices/desktopsecurity
[4] https://www.ucd.ie/t4cms/REC%20Guidelines%20%20Data%20Storage%20and%20Retention%20260410.pdf
[5] https://libguides.ucd.ie/data
[6] https://libguides.ucd.ie/data/FAIR

CHAMELEONS, work packages, responsible beneficiaries, data type, storage location, and format.

Table 2. Illustrates the data which will be gathered, the institution responsible, the storage location and format.

Work Package	Type of Data	Institution Responsible for collecting the data	Storage Location	Format
WP 1	**Anonymous questionnaire.** Doctoral/Postdoctoral students recruited from 5 academic institutions UCD, AUTH, OULU, MU, UPORTO.	**AUTH**	**Shared Drive AUTH Server**	**Protected database**
WP 1	**Anonymous questionnaire.** Doctoral Graduate and Doctoral Programme Co-ordinators from across 5 academic institutions UCD, AUTH, OULU, MU, UPORTO.	**AUTH**	**Shared Drive AUTH server**	**Protected database**
WP 1	**Potentially identifiable data:** *Audio recorded interviews* with potential employers of Doctoral/Postdoctoral industry employers across the world	**OULU/MU**	**MU One Drive Storage**	**Protected database**
WP 3	**Potentially identifiable data:** *Personal data, contact details, curriculum vitae* details for doctoral/post-doctoral students students recruited to CHAMELEONS	**UP, OULU, AUTH, MU, UCD Applications centrally in UCD**	**Novell UCD** **AUTH users file service – controlled access SIGARRA UP**	**Encrypted word Document** **Encrypted Folder using BitLocker**
Work package 4	**Potentially identifiable data Questionnaire data** Doctoral student evaluation of modules taken across the consortium	**UP**	**SIGARRA UP**	**Protected database**
Work package 4	**Potentially identifiable data Questionnaire data** Doctoral student evaluation of CHAMELEONS modules	**UCD**	**Novell UCD**	**Encrypted word Document**
Work package 4	**Potentially identifiable data Questionnaire data, interview data** Relating to career track	**MU**	**MU One Drive Storage**	**Word Format**

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Work package 4	**Publicly available** date impact tracking, publications	MU	MU One Drive Storage	**Word Format**
Work package 4	**Potentially identifiable data Employers of CHAMELEONS graduates Interview data**	**AUTH**	**AUTH users file service -controlled access**	**Encrypted Folder using Bitlocker**

4.4 Consent

All individuals who agree to participate in CHAMELEONS will be required to give informed, written consent to their participation.

5. Legal and Ethical Requirements

All data collected in CHAMELEONS will be stored in an encrypted format. All data collected in relation to each individual will be deidentified and data protection laws including GDPR will be complied with. Ethical Information around personal data to be collected in this project can also be found in deliverables D7.1, D7.2 and D7.3.

Data sharing is governed by a Data Sharing Agreement signed by all beneficiaries within CHAMELEONS. Parties who collect data, are responsible for pseudonymizing it before sharing it with other Parties. The only exception to this is if students are attending a module which will be delivered in person (if the health situation permits) a list of the names and email addresses of the doctoral student attendees will be furnished to the host institution. This will be for purely organisational purposes and will be password protected before sending.

- Parties who collect Data will be responsible for informing Data Subjects on the processing of their personal data (including which data will be collected).

- This obligation is adhered to through the participants information document which all participants are asked to consider in advance of giving consent to participate in the study.

- As an EU requirement the Data Protection Officer's name and contact details within each institution is given to the study participants in order that they may exercise their Data Subject Rights.