# WEARPLEX

# Open Research Data Pilot Management Plan - Public

## *Deliverable 7.9*

**Project ID:**        **825339**

**DOCUMENT PATH:**        **Participant Portal – Public website**

**LAST UPDATE:**        **04/11/19**

| Revision history | | |
|---|---|---|
| **Date** | **Modification Description** | **Modified by** |
| 11/10/19 | Updated template for deliverable content | R Torah |
| 04/11/19 | Updated information | R Torah |
| 5/11/19 | Minor corrections | R.C.W. Aalpoel |
| 5/11/19 | Typos checked | J Isotalo |
| 5/11/19 | Final check through | R Torah |

WEARPLEX

INDEX

# 1  EXECUTIVE SUMMARY

## 1.1  Overview

This deliverable contains an overview of the Open Research Data Pilot management plan for the WEARPLEX project. This is the publicly available version of the document and is based on the information provided in the consortium only Deliverable 8.4b Data Management plan.

Information is provided on what type of data will be generated as part of the WEARPLEX project and where it can be found online; providing links to the WEARPLEX project website and to the openAIRE EU database for research data.

This deliverable will be made available on the WEARPLEX project website in the dissemination section.

## 1.2  Future updates

There will be two future updates to this document, provided at M19 (D7.10) and M36 (D7.11) of the project as review documents to summarise any updates to this original document in case there are any changes as the project progresses.

# 2 OPEN RESEARCH DATA PILOT

## 2.1 Overview

This deliverable gives the public and scientific community information on the open access research data which will be produced as part of the WEARPLEX project. Providing a summary of the overall principles of the open access data and where to find it.

## 2.2 What is the Open Research Data Pilot?

WEARPLEX has agreed to take part in the Open Research Data Pilot (ORDP). The aim of this pilot is to provide open access to research data produced during the WEARPLEX project as soon as possible but without jeopardising any potential exploitable results.

To ensure WEARPLEX adheres to the ORDP it is required to:

- Develop and maintain a data management plan.
- Deposit the data in a research data repository.
- Ensure free third-party access to the data to mine, exploit, reproduce or disseminate the data.
- Provide related information and identify the software needed to use the raw data to enable third-party validation of the research.

## 2.3 What are the FAIR Principles?

All WEARPLEX project partners will look to the guiding principles of data generation defined by FAIR – Findable, Accessible, Interoperable and Reusable. The FAIR principles[1] were defined in 2016 and are summarised as follows:

To be **F**indable:

F1. (meta)data are assigned a globally unique and eternally persistent identifier.

F2. data are described with rich metadata.

F3. (meta)data are registered or indexed in a searchable resource.

F4. metadata specify the data identifier.

To be **A**ccessible:

A1: (meta)data are retrievable by their identifier using a standardized communications protocol.

A1.1: the protocol is open, free, and universally implementable.

A1.2: the protocol allows for an authentication and authorization procedure, where necessary.

A2: metadata are accessible, even when the data are no longer available.

To be **I**nteroperable:

I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2. (meta)data use vocabularies that follow FAIR principles.

I3. (meta)data include qualified references to other (meta)data.

To be **R**e-usable:

R1. meta(data) have a plurality of accurate and relevant attributes.

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[1] M D. Wilkinson, et al (2016), The FAIR Guiding Principles for scientific data management and stewardship, Scientific Data 3, Article No. 160018.

R1.1. (meta)data are released with a clear and accessible data usage license.

R1.2. (meta)data are associated with their provenance.

R1.3. (meta)data meet domain-relevant community standards.

Following these principles when making any data open access will allow for better and wider dissemination of the outcomes from WEARPLEX. This will be ensured by the internal open source process for each organisation when allowing access to their data. For items included on the dissemination section of the WEARPLEX website meta tags are included as part of the submission process and these will be identified in a consistent manner such as "DX.X" for the associated deliverable and "TX.X" for the associated Task number along with any relevant key words associated with that deliverable; to be defined as the project progresses.

Where appropriate for the organisation, and resources permitting, the data produced in the project will be identifiable via the partners own data identification system. For example, at University of Southampton all data associated with a publication is uploaded to the PURE[2] open access data repository and an individual Digital Object Identifier (DOI) is given to that data. The DOI is subsequently linked in the publication so that anyone can have access to the data – this link will also be added to the Dissemination article on the WEARPLEX website.

## 2.4  What is the WEARPLEX data?

The research data in WEARPLEX refers to the information collected from observations, sample measurement, experimental data, user feedback and comparison of success criteria. In this context, all data will be in digital form. The principle for all WEARPLEX open access data is to make it normally accessible for other researchers to, mine, exploit, reproduce and disseminate free of charge.

As data is generated during the WEARPLEX project an assessment will be made by the developing partner(s) to determine whether to disseminate the data for publications or to exploit/protect that information with the aim of protecting it via patenting or know-how. Any data deemed worthy of protection will be pursued quickly for protection so as to ensure it can then be disseminated widely once the protection is in place; this will be in discussion with the Dissemination and Exploitation managers and raised before the Steering Committee for approval.
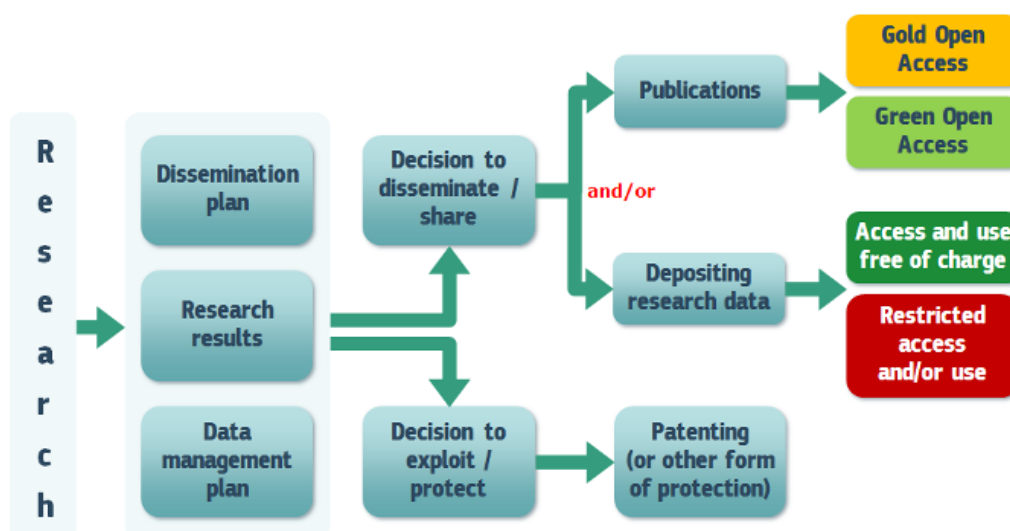


**Figure 1: Typical route applied to all research data produced within WEARPLEX – image taken from[3].**

The type of data expected to be generated during the project is as follows:

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[2] PURE research information system: https://www.southampton.ac.uk/research/researcher-support/pure.page - Last accessed 19/03/19

[3] Research Pathway Image – Horizon2020 Manual, Open access & Data management: http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm - Last accessed 27/3/19

- Quantitive data to identify the mechanical and electrical performance of the materials developed within the project.
- Qualitative and Quantitive data on the system performance of each demonstrator, this could include observational data from human trial participants and general feedback via questionnaires.
- Limited personal data such as age and degree of disability when testing final demonstrators on participants.

It is important to generate and collect this data during the project to assess the performance criteria of the materials and systems developed. The data will help to identify improvements and maintain the objectives of the project.

Any data collected would be maintained in standard digital formats such as .docx, .pdf (written documents) .xlsx, .csv, (raw numerical data), .png, .jpg (images) with any scripting written in .m (Matlab) or .vi (LabView) allowing the greatest scope for interoperability and external sharing. This data could vary in size from a few kilobytes (kb) to a few megabytes (Mb) or more.

## 2.5 Where can I find the WEARPLEX data?

The first place to check is the WEARPLEX project website which will contain summaries of all conference and journal publications as well as links to the associated database for research data and the presentation/paper content in open-access format (e.g. a link to the OpenAire database, DOI or journal site or all three where appropriate).

Specifically, they are located in the dissemination section of the website:

https://wearplex.soton.ac.uk/dissemination

In addition, WEARPLEX will publish all its scientific publications by means of the University of Southampton's PURE/ePrints and/or TECNALIA's RECOLECTA "Recolector de Ciencia Abierta" (Open Science Harvester) data repository systems. PURE and RECOLECTA follow the 'green' open access model.

PURE is a research data repository tool used at the University of Southampton to aid in the dissemination, interoperability and impact of project data. It is integrated with the ePrints open-source digital repository system developed at UoS. PURE is used for all publications at UoS and makes them available via ePrints, along with any data associated with the publication in whatever format is suitable.

TECNALIA has developed their own repository following RECOLECTA directions and facilities in order to fulfil international interoperability standards and protocols and gain long-term sustainability.

ePrints is linked with the OpenAIRE[4] repository which is an open, enabling researchers to share and preserve any research outputs in any size, any format and from any science.

The OpenAIRE database can be searched here: https://explore.openaire.eu/search/find

Because the data is available directly from these sources, there is no additional software needed to access the data and any documentation, both that of the specific data file and the associated use of that data is linked with the page on which it resides. Any metadata or access information will again be available on the repository. Because the data will be stored in common file formats, standard digital formats such as .docx, .pdf (written documents) .xlsx, .csv, (raw numerical data), .png, .jpg (images) with any scripting written in .m (Matlab) or .vi (LabView).

At this initial stage of the DMP it is not considered necessary to appoint a data access committee. Each partner is responsible for their data and its security and maintenance. All data is proposed to be made open access via the use of the Creative Commons license; hence readers are entitled to use the information without requested permission.

The process to achieve open access data for WEARPLEX is shown previously in Figure 1. The aim is to achieve at least 'green' open access qualification for all our data dissemination. Where applicable, 'gold' access may be achieved but this is not considered essential. All 'green' access articles will also be available to download on the WEARPLEX website via the Dissemination section in searchable articles as described above.

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[4] OpenAIRE open access data management website - https://www.openaire.eu/ - Last Accessed: 22/3/19