



DROP-IT

DELIVERABLE 6.2

Data Management and Dissemination Plans

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Dissemination level PU = Public PP = Restricted to other programme participants (including the Commission Services) RE = Restricted to a group specified by the consortium (including the Commission Services) CO = Confidential, only for members of the consortium (including the Commission Services) Restraint UE = Classified with the classification level "Restraint UE" according to Commission Decision 2001/844 and amendments Confidential UE = Classified with the mention of the classification level "Confidential UE" according to Commission Decision 2001/844 and amendments Secret UE = Classified with the mention of the classification level "Secret UE" according to Commission Decision 2001/844 and amendments





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2	2020/10/05	First complete version
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EXECUTIVE SUMMARY

This deliverable addresses the “Dissemination and Data Management Plans”. The dissemination plan contains the strategies (according to the ideas depicted in our project proposal and the Grant Agreement) to be followed in DROP-IT for disseminating research results achieved along the project duration to the scientific community (publications, conferences, ...), general public (social networks, press releases, interviews, ...) and industry (Conference with Exhibitions, Fairs, ...). In the latter case other specific actions will be contemplated in the next future developed “Exploitation Plan” for DROP-IT. The Data Management Plan (DMP) ensures that research data will be findable, accessible, interoperable, and re-usable (FAIR principles) and contains all aspects proposed in the H2020 FAIR template for compiling the DMP of a research project. The scientific public repository for open access of data generated in DROP-IT will be ZENODO.

1 INTRODUCTION

According to article 29 of the Grant Agreement and, particularly, paragraphs 29.1 to 29.3, each beneficiary must:

1. Make dissemination of scientific results by means of scientific publications and conferences, but also disclosing them to the public by appropriate means: web page of the project, social networks, press releases, etc.
2. Ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications. This will be possible by using public repositories, for example.
3. Deposit research data generated in the action in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate (also free of charge for any user).

The compromise of DROPIT and its consortium is total with all dissemination measures expressed in our plan, directed both for scientific, industry and general publics, as also with open access of research publications and related data generated along the project. Of course, without entering into conflict with due protection of some strategic results, confidentiality and security obligations.



2 DISSEMINATION PLAN

DROPIT will generate:

- novel lead-free metal halide perovskite materials: from theory to chemical synthesis,
- new knowledge related to the optical and electrical properties of these materials for their efficient use in light conversion and light emission devices,
- novel technology related to inkjet printing of these lead-free perovskites (LFP) on appropriate flexible and transparent substrates,
- development of efficient optoelectronic devices by inkjet printing: solar cells and light emitting diodes (LEDs),
- applications in flexible integrated photonics: lasing and photodetectors,

Other than exploitation of those strategic results (materials for energy conversion, light emission and photonics), as will be incorporated in our exploitation plan that will be developed in brief, DROPIT needs an appropriate dissemination plan that will include scientific publications, presentations in conferences (academic and involving industry), the organization of a workshop and some other activities using the project website and social networks described in our deliverable D6.1.

We identify three types of dissemination target communities:

1. Dissemination activities towards the scientific community, in order to promote research exchange and share knowledge with other researchers and projects relevant to DROP-IT.
2. Dissemination activities towards society to share the knowledge about novel materials (LFPs) and technology (inkjet printing of different devices) generated by DROP-IT.
3. Dissemination activities towards industry, in order to establish contact with companies of photovoltaics, lighting, photonics for telecommunications (future Internet of Things (IoT), for example), mainly, to attract their interest.



Figure 1. Logo of DROP-IT: RGB pixels simulating the deposition by inkjet printing.

For communication and dissemination activities (presentations and posters, for example), DROP-IT proposed a logo (Figure 1) for the heading and front page of documents, and for the profile image of the social networks, website, etc. The logo is available at the shared dropbox folder of DROP-IT for downloading, together with templates for deliverables, presentations, posters, etc. to keep a uniform project image. Partners will be encouraged to use these templates when presenting DROP-IT results. UVEG is the partner leading and coordinating DROP-IT dissemination, but all partners



are involved, according to the description in WP6 (WP = *Work Package*).

2.1 DISSEMINATION TO THE SCIENTIFIC COMMUNITY

DROP-IT targets at attending several scientific conferences (6-12) per year on Materials Science, Semiconductors, Nanoscience&Nanotechnology, Flexible electronics, Photovoltaics, Light emitters, radiation-matter interaction and Photonics, for example well known top conferences, as MRS, E-MRS, ECS, IEEE, SPIE, CLEO, IEDM, EUPVSEC, ESSDERC and ESSCIRC will be considered. DROP-IT partners will present their last results related to LFPs (properties, applications, inkjet printing and eventually concepts or methodologies or technologies necessary to be adopted for LFPs. This is the basis for exchanging experience, receiving feedback and creating synergies with different types of audiences (general public, academia and industry)². Other than attending these well-known and reputed conferences we plan to organize at least one Topical Workshop organized by DROP-IT on 'Perovskite/lead-free-perovskite Printing' during the third year of the project and allocated as a symposium or session of a major conference (e.g. MRS, EMRS, IEEE). This workshop will be addressed to researchers and companies in the areas of material chemistry, photovoltaics, lighting, photonics. This workshop will be a good opportunity to show the final results of DROP-IT and identify other novel research ideas for projects and innovation.

The results of the project would target more than 20 scientific publications, several with high impact factor (IF): Nature Materials, Nature Energy, Nature Communications, ACS Energy Letters, JACS, Nano Letters, ACS Nano, ACS Photonics, Journal of Physical Chemistry Letters, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Advanced Optical Materials, Joule, Nano Energy, Energy and Environmental Sciences, Physical Review Letters, Physical Review X, Chemistry of Materials, APL Materials, APL Photonics, among others. Gold open access, if possible (green open access alternatively) will be firstly considered for project results published in the highest impact factor journals (above 10, for example). "Gold open access" has the advantage that no embargo period applies for open access to these publications, whereas "green open access" can impose embargo periods to use the publications between 6 and 12 months. The immediate availability of the publication in the first case will increase its visibility and have a positive impact on how widely a publication is disseminated.

The partners agree to publish results derived from research work carried out after the beginning of DROP-IT and within their objectives and beyond (see 1st-year Report

² 2020 have been an exceptional year for the participation in Conferences, even if several of them rapidly adapted to online formats. We hope this situation will change gradually after 2021.



regarding measures to reduce the impact of covid-19 in 2020), but they are obligated to acknowledge the project (see section 2.4): *“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 862656”*. Within this context, the research work developed by the partners previous to the beginning of DROP-IT will not be considered as derived from the project and hence it will be not included in the reports produced along the project duration.

An additional output of DROP-IT will be the formation of 12 PhD and young post-docs in subjects related to DROP-IT research topics. They will have a research plan combining high scientific aspects (work packages 1-2) with more technological ones (work packages 3-4-5), in addition to promoting short stays (2-4 months) in the laboratory of some other partners (one/two secondments with a total duration of 3-6 months). All academic partners have high quality PhD programs with similar competencies.

2.2 DISSEMINATION AND COMMUNICATION TO THE GENERAL PUBLIC

From the scientific point of view, the potential impact of the project is clear, but it is necessary to explain the benefits for the society to the general public using an appropriate language. Cost-effective photovoltaic, lighting and photonic devices based on LFPs can contribute to lower prices for future renewable energy at home, lower electrical consumption, contribute to the development of the “Internet of Things”, as well as the impact of these materials in future wearable electronic microsystems and sensors.

The DROP-IT.eu domain (and a mirror at the server of the University of Valencia) will be used for the project website and renewed yearly until the end of the project (our mirror website will be used after then without cost). The website structure was presented in D6.1, as also the official channels created for DROP-IT in the most important social networks ([Twitter](https://twitter.com/DROP-IT), [Linkedin](https://www.linkedin.com/company/drop-it) and [Youtube](https://www.youtube.com/channel/UC...)). Social media will be used for publishing tweets/posts related to achievements and results (eventually with link to a publications/report). In order to increase the impact of these tweets, the hashtag #LFP_DROP-IT will be used, among others referring to the particular application referred in the communication (#LED, #solarcell, ...).

To cover wider audiences and increase the impact of the news to be communicated, the partners (main principal investigators and researchers from their teams) will use their own accounts in the social networks (in Twitter, for example, also adding the above given/suggested hashtags) and eventually the official channels of their Centers/Companies. In this way, the official channel of DROP-IT can also use posted information by the partners and comment or forward (Retweets, in the case of Twitter). The [YouTube](https://www.youtube.com/channel/UC...)



channel for DROP-IT will include short audio-visual material and written descriptions, in order to explain to the general public scientific concepts, experiments and results.

Outreach activities will complement the actions described above and increase the social impact of DROP-IT results, for example attracting young students to scientific careers and future PhD students in the fields of DROP-IT. These activities will include the proposal of seminars addressed to physics, engineering and chemistry students, articles in popular science and/or educational magazines, press releases, radio or television interviews, conferences for general public, demonstration experiments, etc. In addition, DROP-IT partners are encouraged to follow these communication and dissemination actions and propose new ones.

2.3 DISSEMINATION TO INDUSTRY

The industrial/commercial impact of LFPs developed in DROP-IT for optoelectronic (solar cells and LEDs) and photonic devices is very high and hence dissemination within this community is of strategic importance. For this reason, we propose the participation in some special conferences that include exhibits ([EU PVSEC](#), [MRS](#), [NANOTEXNOLOGY](#), ...), and other events (Future Tech Week powered by EIC, for example) that will contribute to the dissemination of DROP-IT results to the industrial community. For this purpose, it is very important the participation of SME partners forming part of the DROP-IT Consortium. More details on these and other actions will be given in our deliverable related to the Exploitation Plan for DROP-IT.

2.4 RECOMMENDATIONS AND OBLIGATIONS

All members of the Consortium must communicate their project results to society, according to the EU Regulations and the DROP-IT's Grant and Consortium Agreements. Its Article 29.1 reads: Unless it goes against their legitimate interests, each beneficiary must – as soon as possible – ‘disseminate’ its results by disclosing them to the public by appropriate means (other than those resulting from protecting or exploiting the results), including in scientific publications (in any medium). The coordinator, UVEG, will manage and update the webpage, intranet (and/or shared dropbox folder) and social networks. The partners will inform and send to the coordinator press releases, news, graphic material (pictures, posters, leaflets, etc.) and social media communication actions managed by them (personal/group accounts) or their institutions.

The dissemination and communication actions described above can be evaluated by attending to the nature of the action: Impact factor of the publications, citations and downloads of the publications, number of visits and downloads of the website, followers-retweets/shares-likes/recommends in social media, number of video views, number of press releases, assistance to seminar/exhibitions, etc.



It is important to remember here that “A prior notice of any planned publication shall be given to the other Parties at least 20 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 15 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.” Of course, the parties are advised to reply as soon as possible, in order to reduce the delay in the publication submission.

For communication and dissemination activities related to DROp-IT results and its social media profiles, it is necessary to take account of:

- the EU communication toolkit available [here](#), particularly the use of the EU emblem that must have appropriate prominence,
- the acknowledgement in publications: “This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 862656.”
- the acknowledgement in the communication of major results or their publication as open data: “This *[insert type of result]* is part of a project that has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 862656”.
- use the following disclaimer (whenever using the funding logo): “The contents of this publication are the sole responsibility of *[name of the implementing partner]* and do not necessarily reflect the opinion of the European Union.”

The publications related to DROp-IT results made by the different partners will be done preferentially through Gold open access (green or similar if not possible), for which a specific part of the budget has been established. Moreover, a copy of the publication and the data generated will be deposited in the open-access ZENODO repository (OpenAire) by the corresponding partner/partners, other than using the institutional repositories when possible. More information on open data management will be given in next section.

3 Data management Plan



Future and Emerging Technologies (FET) projects must participate in the Open Research Data Pilot (ORD Pilot) of the European Commission that aims open access and reuse of research data generated by Horizon 2020 projects. The ORD Pilot does not mean the public access to data that can be the base for Intellectual Property Rights (IPR) applications. For the adhesion of DROP-IT to the ORD Pilot:

- The development (and keeping up-to-date) of the Data Management Plan (DMP) for the project is a key milestone.
- Deposit the data in a public research data repository.
- Ensure third parties can freely access, mine, exploit, reproduce, and disseminate the data.
- Provide related information and identify (or provide) the tools needed to use the raw data to validate the project research.

The ORD pilot would apply to the data (and metadata) generated in DROP-IT that would be required to validate results in scientific publications, mainly. A DMP describes the actions and strategies for proper data management within a project, in order to ensure that research data will be findable, accessible, interoperable, and re-usable (FAIR principles). The DMP can be updated along the project, if necessary, and will include information on:

- the handling of research data during and after the end of the project
- what data will be collected, processed, and/or generated
- which methodology and standards will be applied
- whether data will be shared/made open access and
- how data will be cured and preserved (including after the end of the project).

The consortium proposes the use of ZENODO, as the preferred repository for the project outcomes (publications, documents, numerical data, presentations, video, ...). This repository is linked to OpenAIRE and the EC portal and offers the following services:

- Sharing data in multiple formats: text, spreadsheets, audio, video, and images.
- Display citable research results and integrate them into existing reporting channels to research funding agencies and also in certain journals (as links to supporting/extra information).
- Define the different licenses and access levels.
- Easy access and reuse of shared research data.

Below our DMP is addressed by following the [H2020 FAIR DMP Template](#). It consists of a **set of questions** that will be answered with a level of detail appropriate to the project.

3.1 DATA SUMMARY



What is the purpose of the data collection/generation and its relation to the objectives of the project?

DRop-IT is structured in six WPs and data will be generated in all of them, except the sixth. Two types of data are identified in DRop-IT: experimental data in all WPs and theoretical data in Tasks 1.1 and 4.1 (in WP1 and WP4, respectively).

WP1 incorporates most of the basic experimental studies (structural, photodynamics, optical, electrical, ...) of nanocrystals in solution and/or forming films and polycrystalline films, other than electronic structure and optical calculations. Similar studies will be developed in WP2, but centered on thin films prepared by inkjet printing on appropriate (transparent) flexible substrates. In WP3-WP5 most the studies are focused on devices (fabrication, electro-optical characterization of devices and measurement of their figures of merit) with the highest commercial impact, solar cells (WP3) and LEDs (WP4), whereas WP5 is devoted to explore application in integrated photonics (demonstration of light amplification and lasing, combination with photodetectors). Calculations in WP4 (Task 4.1) are related to the electronic properties of interfaces between charge transport layers and perovskites. In this way, experimental data refers to different kind of measurements (including images in the case of structural characterization) on materials and devices, conclusions about their optimization (both materials and devices) and the procedures for the production of materials and fabrication of devices. Theoretical data proceed from the use of very complex software (DFT codes developed and shared by many authors).

Will you re-use any existing data and how? What is the origin of the data?

The starting point of DRop-IT is based on the excellent results previously obtained by most of the partners in the field of lead halide perovskites (mainly): electronic structure, chemical synthesis, polycrystalline thin films and films formed by nanocrystals (eventually using inkjet printing), photochemistry, optical properties, fabrication and electro-optical characterization of solar cells (fabricated by some of the partners using inkjet printing on flexible substrates), LEDs (fabrication, electroluminescence, efficiency) and photonics (photoluminescence, stimulated emission, photodetection). Some preliminary work was made on lead free perovskites by some researchers participating in the consortium, but first steps in DRop-IT were based on an exhaustive state of the art, as referred in the proposal. Several promising materials are now being studied.

What is the expected size of the data?

Most of the data generated in DRop-IT by the different equipment used for the different kind of measurements can be saved or exported as ASCII-related files (*.txt or similar), as also occur for DFT calculations. In this case the size of the file will be in the range of a few KB. In the case of morphological/structural characterization by SEM/TEM generated data are in the form of images with size of few MB. It is difficult to determine at the moment the exact total size of the data that will be generated, but a rough



estimation can be in the range of 10 GB (only raw data, no graphs/plots made by different graphic software with those data), which is not very high, a priori, but can be further reduced by compression. Of course, after analysis of these raw data and production of final plots (converted into images of sufficient resolution) for papers, posters, presentations, etc., the size of produced files will increase significantly. In this case it is really very difficult to estimate the total size of data, but now it can be in the range of 100 - 1000 GB, depending on the number of videos to be produced along the project duration. The Consortium has agreed to use the following file formats:

- *Instrument-specific formats*: too many, hence raw data will be produced by saving/exporting as ASCII files.
- *Row data from measurements and calculations*: ASCII files, MS Excel (.xlsx).
- *Manuscripts, Documents*: Word (.docx), PDF.
- *Presentations*: Microsoft PowerPoint (.pptx).
- *Images*: TIFF or JPEG.
- *Audio*: MP3 or WAV.
- *Video*: MP4 or another after agreement.
- *Software for graphics*: Matlab, Mathematica, Origin, etc., hence final plots after analysis would be converted into images.
- *Other specific formats*: ???

To whom might it be useful ('data utility')?

The open access to scientific information (publications and research data) generated in DROP-IT (see Figure 2 for the strategy to be followed) will be valuable for researchers and technologists in companies involved in the fields of Materials Science, Semiconductors, Solar Cells, LEDs, Photonics, among others. These potential users will be able to access and reuse (mine, exploit, reproduce and disseminate) openly the research data free of charge (see Article 29.3 of the Grant Agreement).

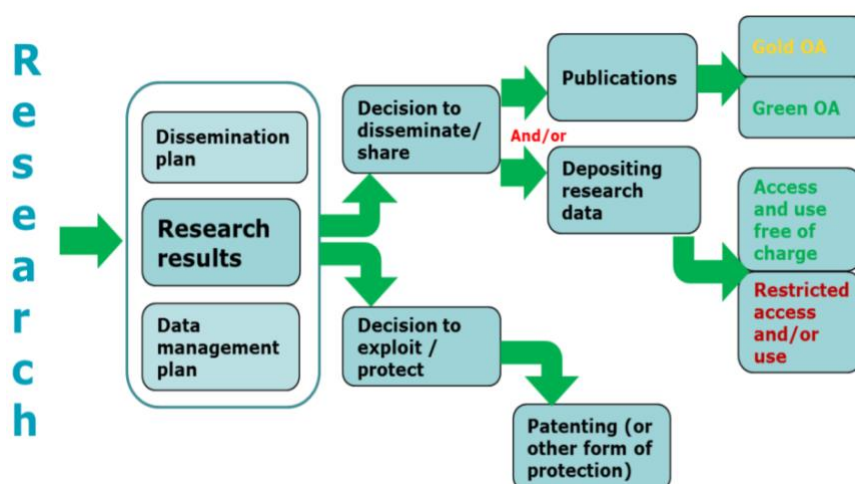




Figure 2. Open access to scientific publications and research data³.

3.1 FAIR DATA

This document describes how to make DROp-IT research data findable, accessible, interoperable, and re-usable (FAIR). The scientific outputs generated in all tasks of the project will be transferred to the ZENODO repository. ZENODO is an open repository from [OpenAIRE \(Open Access Infrastructure for Research in Europe\)](#) H2020 project and CERN. ZENODO repository respects FAIR principles, and additional details from those mentioned in this text can be found [here](#).

3.1.1 Making data findable, including provisions for metadata

Outline the discoverability of data (metadata provision) and identifiability of data referred to standard identification mechanism (e.g. persistent and unique identifiers such as Digital Object Identifiers).

Deposited documents (including scientific publications in JCR journals) and research data will be uploaded to ZENODO repository, which is linked to OpenAIRE and the EC portal. It will guarantee open accessibility to all public. Moreover, all uploaded document/data in ZENODO will be identifiable and findable because it assigns a unique Digital Object Identifier (DOI), but it can also be used the DOI assigned by a journal in the case of an indexed publication.

³ Retrieved from: https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

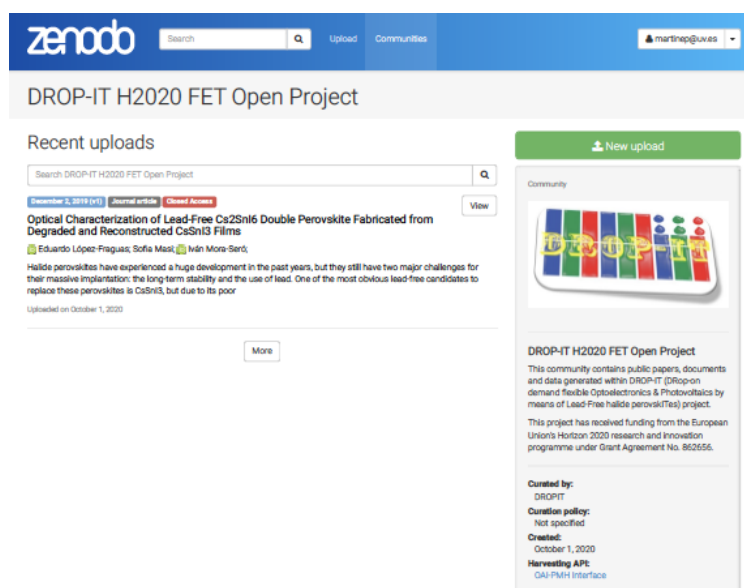


Figure 3. The [DROP-IT community](#) in ZENODO.

A community named “DROP-IT H2020 FET Open Project” has been created in ZENODO (Figure 3), for which all generated research outputs of DROP-IT will be linked. The direct web link for uploading a given scientific output by a partner can be found [here](#), and it will be included on the website of the project. The community curator (creator of DROP-IT community in ZENODO, the coordinator in our case) has to approve every uploaded data set in order this data set to form part of the community collection (even if still available in ZENODO).

Specify standards for metadata creation (if any). If there are no standards in your discipline describe what type of metadata will be created and how.

In principle no metadata files will be generated from research data obtained in DROP-IT. As aforementioned, most of the research data will be in the form of images and in the form of ordered arrays (several columns) of numbers related to a given measured magnitude/s as a function of another one (spectra-like structure).

Outline naming conventions and the approach towards search keywords. Outline the approach for clear versioning.

Naming conventions are not initially established for research datasets generated in DROP-IT, but complete information (including keywords) about them will be included in the repository. In principle, only the final version of research data will be included in repositories. The upload to ZENODO of DROP-IT research outputs will be published in a category “[Open data](#)” within the “[News & Events](#)” section of the [DROP-IT webpage](#). In addition to the ZENODO repository, data can be additionally uploaded to the repository of the partner Institution, if available.



Some scientific journals, where DROP-IT partners could plan to submit a given manuscript for publication, offer the possibility to include additional research data to validate the most relevant conclusions of the paper. If such research data were already uploaded and available in ZENODO, papers can be directly linked to these datasets, even during the submission/reviewing stage. Furthermore, publications can include a complete methodology section with detailed description of the experimental setups and their equipment, other than additional supporting information as a separated document (and/or images and/or videos) and Annexes of the main body of the paper. This complementary information of a paper can be uploaded (if not done before, as aforementioned) after publication in ZENODO; this option has the advantage of being data organized in a document with appropriated explanations and eventually completed with data files related to results shown in the main paper. Furthermore, some of the project deliverables are public; hence, these reports and associated data can be uploaded to the repository, being cited with the DOI generated by ZENODO. Data contained in files or folders (containing different data files) will be identified with appropriate descriptive names.

3.1.2 Making data openly accessible

Which data produced and/or used in the project will be made openly available? If some datasets are kept closed (or need to be shared under restrictions), provide convincing reasons for doing so.

The kinds of data generated in DROP-IT were specified in section 3.1. Some successful LFP material synthesis and processes, fabrication methods of materials and devices, can be the base for IPR applications (see our next future deliverable containing the exploitation plan of DROP-IT for further details), together with some data demonstrating the novelty/novelities in the material and/or device. Therefore, attending to the decision scheme depicted in Figure 2, related data to these patentable discoveries must be kept confidential until the IPR application, as specified in the Grant Agreement and our next future exploitation plan. Once the IPR application is made, as also publications and their related research data, open access accessibility will be granted to these data, except possibly some strategic/sensitive knowledge (for the commercialization as future products) to be kept confidential after decision by the parties involved in the IPR. If these and other additional research data would be kept confidential along the project, an information notice to this respect will be incorporated in the documents (deliverables, periodic/final reports and presentations, mainly) related to the next coming review meeting.

Specify how the data will be made available and methods or software tools needed to access the data (and if needed software for such access and how to get it).

Data generated in DROP-IT will be deposited in the ZENODO repository, which will give open access to them for the public after registration. In ZENODO no special methods nor



software are needed to access the data, only an internet browser for searching data and download. Of course, the user downloading such data will need convenient software installed in his/her computer for reading the corresponding file formats (see the different data formats listed in section 3.1). Therefore, no special software will be needed to search and download open data in ZENODO.

Specify where the data and associated metadata, documentation and code are deposited and how access will be provided in case there are any restrictions.

ZENODO platform offers possibilities to include associated metadata (a priori not generated within DROP-IT, but not totally excluded if needed) and other types of documentation within the code. All data submitted to open repositories (institutional of the partners, for example), including ZENODO, have no restrictions on use.

As contemplated in the Consortium Agreement of DROP-IT and indicated in section 2.4 of our dissemination plan, the partners must inform the other members of the Consortium about intended publications 20 days before submission to a selected journal. The same principle is proposed for data and other output documents of DROP-IT prior to be uploaded to ZENODO within DROP-IT community, for which partners will also inform the Consortium, specifying if it is related to a present or future scientific communication.

ZENODO offers the possibility of consulting the number of citations received by a certain uploaded element, and hence its scientific impact can be quantified.

3.1.3 Making data interoperable

Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability. Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?

Data produced in the project will be interoperable, according to details provided in the present DMP (see list of file formats above).

Regarding vocabulary, IUPAC nomenclature and the International System of Units will be used for data and derived magnitudes. In DROP-IT, uncommon or project-specific ontologies or vocabularies will be not generated.

3.1.4 Increase data re-use (through clarifying licenses)

Specify how the data will be licensed to permit the widest re-use possible.

Open access data will be licensed following Creative Commons 4.0, for which partners give public right for using a work protected by copyright. In this way, users downloading data from ZENODO (or other public repositories) will be allowed to share (redistribute the



material in any medium or format) and adapt it, but giving appropriate credit, hence providing a link to the license and indicating if a certain change was made to the original data. Third parties can use data for research purposes, as state-of-the-art section/reports, to avoid duplication of efforts in future investigations. For example, preparation methodologies of new materials for porous materials could be implemented in companies acting as materials suppliers.

Specify when the data will be made available for re-use, and (if applicable) why and for what period a data embargo is needed.

If a manuscript is being prepared for submission to a target journal by using data generated from DROP-IT activities, the partner will upload data to public repositories after the final acceptance or the publication of the paper; in fact, the partner is advised to upload also published paper (or link to the journal) if granted with “gold open access” or the accepted preprint (or the form allowed by the journal) if it was published with “green open access” (see section 2.1 for more information about definition of “gold” and “green” conditions). For research data not related to patents and publications, no embargo period exists for uploading these data.

Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why.

A certain percentage of data produced by DROP-IT activities can be restricted after the end of the project. From one side, the possible IPR applications for certain achievements in DROP-IT and their (partial or total) potential commercial use, the exploitation agreement (signed by the inventor partners) associated to a patent will limit the open access of the most delicate knowledge, hence some data should be maintained confidential during the exploitation period. From another side, it is well known that many publications (even important) can be prepared and published during the first and second year after data generation, and even more time if deep analysis is needed (if it includes physical modelling, for example, or complementary experiments). This second reason could apply during 1-2 years after the end of the project in the case of data generated along its last year.

Specify the length of time for which the data remains re-usable and describe data quality assurance processes.

ZENODO repository will host all data generated in DROP-IT along the project duration up to 20 years at least (see <https://about.zenodo.org/policies/>), hence data will remain re-usable during this period. Similar would apply for other open repositories (institutional ones, researchgate, ...). The reputation and trajectory of partners involved in DROP-IT assure the reliability and quality of data generated in DROP-IT along its duration. In the case of publications produced in DROP-IT (with descriptions and data provided with them)



other expert laboratories would be able to reproduce our experiments and validate our data.

3.1.5 Allocation of resources

Estimate the costs for making data FAIR in the project and describe how these costs will be covered.

No associate costs are expected from making data FAIR in DROP-IT, because selected platforms for this (ZENODO and institutional repositories of academic partners) offers their services free of charge. For papers published in open access journals the partners made explicitly a certain budget reservation (see Grant Agreement), hence being eligible costs.

Clearly identify responsibilities for data management in the project.

The owner of the data will be the partner or partners who generate them. In fact, in many of the tasks planned within experimental WPs (WP1 to WP5) a collaborative work will be developed between several partners. Therefore, these partners will be responsible for the whole data collection and management in conjunction with the Coordinator (if it is not already participant in the work). All partners agree to provide a list (or referred/included in the different milestones and deliverables) with generated data deposited or to be deposited as Open Data to the Coordinator every year. In fact, all partners are advised to upload papers (see above the terms for this) together with research data after the publication date, as also posters and presentations used in Workshops or Conferences in which the partners have participated. Other actions related to data management will be notified to the Coordinator. Moreover, the partner will provide the experimental/theoretical data needed to demonstrate the completion of a milestones or task established in the project.

Describe costs and potential value of long term preservation (of open access data).

As aforementioned, open access to data deposited in ZENODO is preserved at least for the next 20 years without cost and permanent in the case of institutional repositories. Furthermore, the data available in the DROP-IT website will be available after the finalization of the project by using the UVEG server that will host the project website free of charge.

3.1.6 Data security

Address data recovery as well as secure storage and transfer of sensitive data.

For the safe storage and transfer of sensitive data, all partners will store a remote copy of the data in the shared cloud space defined within Dropbox. If the total size needed for these copies will exceed the cloud-limit available by the partners free of charge, the consortium will decide other optional cloud spaces free of charge (*Google-Drive* and



institutional ones) or buy a plan for higher cloud space needs of the partners. Alternatively, only the Coordinator will have access to a cloud (for example, UVEG staff have access to 1 TB in the cloud with onedrive from Microsoft Office, hence free of charge in this case) and will introduce and organize data when asked by the other partners. Moreover, every partner is advised to make regular backups in their personal computers (in this case, antivirus and firewall software should be installed and kept updated) and/or external Hard Disks. Computers used in laboratories should be not connected to internet or protected with strong antivirus and firewall software.

DROP-IT project does not handle personal data and, therefore, does not involve ethical issues to be managed.

The DMP will be updated throughout the project if some operative/technical change (corroborated by improvement) is made along the project duration. Particularly, the strategies, protocols and actions will be revised at the time of project evaluations (M12, M36)⁴, in the case of incorporating new data not contemplated at the moment, changes in the consortium policies (innovation and exploitation aspects, decision for IPR, ...) and other external factors (new repositories, new tools, new publication policies, ...).

4 CONCLUSIONS

The dissemination plan in this deliverable (chapter 2) contains the strategies to be followed in DROP-IT for disseminating research results achieved along the project duration for different audiences: scientific community general public and industry, by using specific means in each case. The DMP will ensure FAIR principles and contains all aspects proposed in the H2020 FAIR template for compiling the DMP of a research project. The scientific public repository for open access of data generated in DROP-IT will be ZENODO.

⁴ These time marks can change if extension of the project is made due to COVID-19 effect.