



## “NOVEL INTEGRATED SOLUTION OF OPERATING A FLEET OF DRONES WITH MULTIPLE SYNCHRONIZED MISSIONS FOR DISASTER RESPONSES”

**ResponDrone**

### D14.2 “Data Management Plan”

Project Deliverable Report

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## 1. Executive Summary

This deliverable provides a description of the procedures of data management within the ResponDrone project. The document is structured according to the Horizon 2020 FAIR Data Management Plan (DMP) template. Each section contains the key questions from the template followed by the respective answers. The Data Management Plan will constantly be updated during the lifetime of the project.

## 2. Introduction

This deliverable describes the procedures implemented in ResponDrone in order to meet the requirements and guidelines regarding FAIR data management of the Horizon 2020 program. The data collected in ResponDrone will mostly be of qualitative nature and originate from transcripts of interviews conducted with first responders, survey results and questionnaire results as well as audio and video recordings. Due to ethical and legal guidelines concerning the dissemination of personal data, the data that is made publicly available will be restricted to deliverables and other reports incorporating anonymized summaries of the collected data, research publications in scientific journals and conference proceedings as well as slides of conference presentations. As such, in case of ResponDrone, no quantitative data sets will be generated or made publicly available.

## 3. Data summary

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

### Answer

Data will be collected in order to derive requirements for the ResponDrone system and in order to validate the system in the field. For these purposes, qualitative data will be collected within the scope of literature reviews, first responder interviews, workshops and surveys. The collection of personal data will be restricted to the following data:

- Name, professional affiliation, age range and contact information.
- Personal and professional views and experiences as they relate to the RESPONDRONE activities.
- Photographs, audio, and/or video recordings of their participation in RESPONDRONE research activities (e.g. documentation of discussions in workshops or activities in demonstrations).

**What types and formats of data will the project generate/collect?**

### Answer



This project is funded by the European Union's H2020 Research and Innovation Programme and the Korean Government under Grant Agreement No. 833717 <https://respondroneproject.com/>

Data that will be collected within ResponDrone include the following categories:

- Literature reviews (Word, .doc/.docx; PDF)
- Informed Consent forms (Paper)
- Images (e.g. JPEG, PNG, GIF etc.)
- Video files (e.g. MPEG-4, AVI, MOV)
- Audio files (e.g. MP3)
- Transcriptions of video and audio files (Word, .doc/.docx, PDF, Excel)
- Deliverables (PDF)
- Presentations (PDF)
- Research publications (PDF)

The formats of the collected data will be Word, PowerPoint, Excel and PDF files as well as various audio and video and image formats. All data stemming from interview transcripts and other documents related to the audio/video recordings will be summarized and anonymized and made publicly available through public deliverables and research publications. Literature reviews regarding studies of disaster response operations will be made publicly available through public deliverables. The data format of these publications will be PDF.

### Will you re-use any existing data and how?

#### Answer

Publicly available data collected in other research projects related to the development of technology for first responders will be used. The data are mainly provided on websites and in public deliverables. The data will be used to identify technological needs of first responders and to derive requirements for the ResponDrone system.

### What is the origin of the data?

#### Answer

The origin of the collected data will be interviews, workshops and surveys. All research participants will be first responders from the end user partner organizations in the ResponDrone consortium who have considerable experience in conducting first response missions. The data will be collected as part of the activities conducted in the following work packages:

- WP6: Integrated Data Processing for Risk-Based Decision Support
- WP10: Training Program Development
- WP11: Large Scale Demonstrations
- WP15: Studies of Disaster Response Operations

The origin of pre-existing data will be publicly available data collected in other research projects related to the development of technology for first responders. These data are mainly provided on websites and in public deliverables.



**What is the expected size of the data?****Answer**

Since the data that are made publicly available will mostly be in PDF format, the expected size of the data will be about 1GB.

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

In addition to usage within ResponDrone as discussed in the description of its purpose, the generated data will be useful for research projects dealing with technologies for first responders, for industries that develop systems for first response missions and for first responder organizations.

**4. FAIR Data****4.1 Making data findable, including provisions for metadata**

**Are the data produced and/or used in the project discoverable with metadata, identifiable and locatable by means of a standard identification mechanism (e.g. persistent and unique identifiers such as Digital Object Identifiers)?**

**Answer**

Data in terms of journal publications will be published with Digital Object Identifiers. Interview data will not be discoverable since it will not be published due to personal data privacy policies of participants.

**What naming conventions do you follow?****Answer**



A naming convention was established in ResponDrone in order to increase visibility and searchability of the published data. The naming of each deliverable will follow the naming convention as outlined below:

*No*\_RESPONDRONE\_Deliverable\_*Deliverable No.*\_Deliverable name\_*Version No.*, where

*No* is the continuous reporting number,  
*Deliverable No.* is the deliverable number, as specified in the description of action (DoA),  
*Deliverable name* is the deliverable name, as specified in the description of action (DoA) and  
*Version No.* is the version number of the document.

Since no dataset is produced, naming conventions regarding coherent variable naming etc. is not applicable for ResponDrone.

#### Will search keywords be provided that optimize possibilities for re-use?

##### Answer

The publicly available deliverables include key words.

#### Do you provide clear version numbers?

##### Answer

For the process of drafting the deliverables, a procedure for document versioning was established in ResponDrone (see the answer to the question "What naming conventions do you follow?"). Note that since the deliverables are submitted once, the published data does not undergo any versioning.

#### What metadata will be created? In case metadata standards do not exist in your discipline, please outline what type of metadata will be created and how.

##### Answer

No specific metadata will be created. It will be assured that all metadata that contains any personal information will be deleted before publication. The only metadata that will be published will be the metadata that is directly associated with the specific file types, e.g. image size or compression ratio in JPEG files.

#### 4.2 Making data openly accessible

**Which data produced and/or used in the project will be made openly available as the default? If certain datasets cannot be shared (or need to be shared under restrictions), explain why, clearly separating legal and contractual reasons from voluntary restrictions.**



**Answer**

Due to ethical and legal guidelines concerning the dissemination of personal data, the data that are made publicly available will be restricted to public deliverables and other reports incorporating anonymized summaries of the collected data, research publications in scientific journals and conference proceedings as well as slides of conference presentations.

The following public deliverables will be made available on the project web site:

- D4.4 Overview of Available Payloads
- D7.1 General Architecture Design
- D7.2 RESPONDRONE Integration Plan
- D8.1 The Regulatory Landscape – First Iteration
- D8.2 Ethical Principles and Dilemmas
- D9.1 Operational Process and System Maps
- D10.1 Requirement Analysis Report
- D10.3 Valid and Reliable Indicators and Benchmarks
- D10.4 Protocol and Report Pilot Project
- D12.1 Exploitation Strategy and Business Planning
- D12.2 Legal, Ethics, Privacy & Security Framework
- D12.4 Public Behaviour Studies and Strategy Report
- D13.1 Communication Plan
- D13.2 A Project Identity and Specific Project Website
- D13.3 A Mix of Communication Tools
- D13.4 A Final Dissemination Report
- D13.5 Protocol Concluding Conference
- D14.1 Establishing Governance Structure
- D14.4 Midterm Report
- D14.8 Final Report
- D15.1 Protocol Kick-Off Meeting (M1)
- D15.2 Report Field Studies
- D15.3 Set of Scenarios and Simulation Data

**How will the data be made accessible (e.g. by deposition in a repository)?****Answer**

All public deliverables will be accessible on the project website ([www.respondroneproject.com](http://www.respondroneproject.com)). Research publications will be available on conference proceedings and scientific journal issues. For all research publication, web links will be provided on the project website. In addition, for project-internal sharing and collaboration of data, a secure repository within the consortium has been established, called the team site.

**What methods or software tools are needed to access the data?**

**Answer**

In order to view the published data, it is necessary to use a web browser for accessing the project website, as well as a PDF reader for accessing the PDF files.

**Is documentation about the software needed to access the data included?**

**Answer**

No, there is no need for documentation about the software needed to access the data.

**Is it possible to include the relevant software (e.g. in open source code)?**

**Answer**

Since the data can be viewed by openly accessible software tools, no source code needs to be provided.

**Where will the data and associated metadata, documentation and code be deposited? Preference should be given to certified repositories which support open access where possible.**

**Answer**

Public deliverables will be deposited on the project website. Research publication will be made available through web links leading to the respective websites from which the publication can be downloaded. Data that is not publicly available will be stored on a secure online repository, protected by username and password (the team site), hosted and managed by DLR. The platform is only accessible with a personalized account provided by DLR to consortium members upon request.

**Have you explored appropriate arrangements with the identified repository?**

**Answer**

Data that is confidential will be stored on a secure online platform, protected by username and password (the team site), hosted and managed by DLR. The platform is only accessible with a personalized account provided by DLR to consortium members upon request.

**If there are restrictions on use, how will access be provided?**

**Answer**

Access to confidential data will only be provided upon request to members of the ResponDrone consortium. There are no restrictions with regard to publicly available data.

**Is there a need for a data access committee?**



**Answer**

Confidential data will be accessible to individualized accounts to the team site for consortium members exclusively. Data in publicly available deliverables is accessible openly.

**Are there well described conditions for access (i.e. a machine readable license)?**

**Answer**

Not applicable due to having strictly confidential data on a secure online repository (team site) or publicly available data in public deliverables.

**How will the identity of the person accessing the data be ascertained?**

**Answer**

For publicly available data: Identity will not be ascertained.

For confidential data:

The team site will be hosted by DLR and can only be accessed with an individualized account provided by DLR. The account is therefore personalized and traceable. In addition, each user of the team site has to request an account which will only be granted by DLR to ReponDrone consortium members.

**4.3 Making data interoperable**

**Are the data produced in the project interoperable, that is allowing data exchange and re-use between researchers, institutions, organisations, countries, etc. (i.e. adhering to standards for formats, as much as possible compliant with available (open) software applications, and in particular facilitating re-combinations with different datasets from different origins)?**

**Answer**

Since no quantitative data will be collected or produced within ResponDrone, interoperability is limited to qualitative analysis. Such analysis is possible with the PDF format used for public deliverables in an unrestricted way.

**What data and metadata vocabularies, standards or methodologies will you follow to make your data interoperable?**

**Answer**

In order to facilitate the utilization of the qualitative data collected within ResponDrone, a vocabulary of well-defined technical terms (e.g. trajectory vs. flight path) will be created to harmonize the content of all project deliverables.

**Will you be using standard vocabularies for all data types present in your data set, to allow inter-disciplinary interoperability?**

**Answer**

Not applicable, since no quantitative data sets are being produced in ResponDrone.

**In case it is unavoidable that you use uncommon or generate project specific ontologies or vocabularies, will you provide mappings to more commonly used ontologies?**

**Answer**

If the need arises to use project specific ontologies or vocabularies, their meanings will be clarified in the documents.

#### 4.4 Increase data re-use (through clarifying licences)

**How will the data be licensed to permit the widest re-use possible?**

**Answer**

The published data will be explicitly made available for re-use. In case a specific license is required, a license which minimizes the impact on IPR and re-use will be chosen.

**When will the data be made available for re-use? If an embargo is sought to give time to publish or seek patents, specify why and how long this will apply, bearing in mind that research data should be made available as soon as possible.**

**Answer**

Public data will be re-useable once it is published and no embargos are planned or foreseen.

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

**Answer**

The public data produced in ResponDrone are useable by third parties, also after the end of the project. The public deliverables and the links to research publications will remain on the project website.

**How long is it intended that the data remains re-useable?**

**Answer**



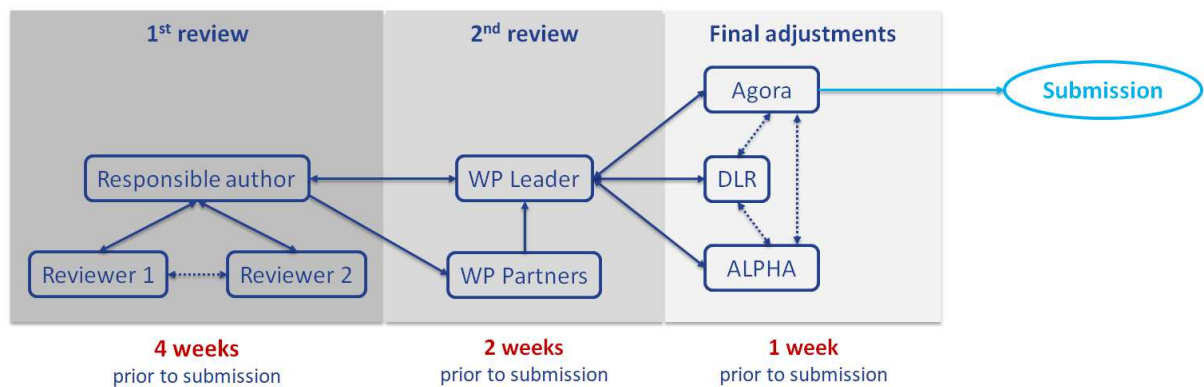
For public data: No time limit.

For confidential data, stored on the team site: Data will be stored and will this remain re-usable for 10 years.

### Are data quality assurance processes described?

#### Answer

In ResponDrone a data quality assurance process has been established. Since the publicly available data produced in ResponDrone will be restricted to deliverables and other reports incorporating anonymized summaries of the collected data, research publications in scientific journals and conference proceedings as well as slides of conference presentations, the quality assurance process focusses on the review procedure for documents presented in Figure below.



#### 1<sup>st</sup> review:

- The lead author uploads the first version of the document to the team site 4 weeks prior to the submission deadline (the exact date can be found in the *Deliverable Reviewer Table* on the team site) and informs the two reviewers that the document is ready for review.
- If the reviewers do not receive the document 4 weeks prior to the submission deadline they should contact the lead author and ask for the status of the document.
- The reviewers review the document in parallel within 1 week and let the lead author know once they finished reviewing.

#### 2<sup>nd</sup> review

- The lead author implements the changes and comments of the two reviewers and releases the document for review to the WP leader and WP partners 2 weeks prior to the submission deadline (the exact date can be found in the *Deliverable Reviewer Table* on the team site).
- If the WP leader does not receive the document 2 weeks prior to the submission deadline s/he should contact the lead author and ask for the status of the document.



- The WP leader and the WP partners review the documents and the lead author revises it. The whole 2<sup>nd</sup> review process should be completed within 1 week.

Final adjustments:

- The WP leader releases the document for review 1 week prior to the submission deadline (the exact date can be found in the *Deliverable Reviewer Table* on the team site).
- Agora, DLR and Alpha review the document.

## 5. Allocation of resources

**What are the costs for making data FAIR in your project?**

**Answer**

The costs are covered by the budget granted to each partner.

**How will these be covered? Note that costs related to open access to research data are eligible as part of the Horizon 2020 grant (if compliant with the Grant Agreement conditions).**

**Answer**

- The costs for data dissemination as well as data management are included in the granted project budgets of each partner of the consortium.
- The costs for maintaining the team site is included in the budget of the coordinating partner, DLR.

**Who will be responsible for data management in your project?**

**Answer**

In ResponDrone the beneficiary responsible for data management is the coordinating partner, i.e., DLR.

**Are the resources for long term preservation discussed (costs and potential value, who decides and how what data will be kept and for how long)?**

**Answer**

The resources for long term preservation are allocated to the coordinating partner, i.e., DLR. Data will be preserved for 10 years.

## 6. Data security

**What provisions are in place for data security (including data recovery as well as secure storage and transfer of sensitive data)?**



**Answer**

A secure, online platform protected by username and password, hosted and managed by DLR, is used to share data. Data will further be stored on password protected computers in secure locations at the premises of each beneficiary.

**Is the data safely stored in certified repositories for long term preservation and curation?****Answer**

Confidential project internal data will be shared on a secure online repository for the duration of 10 years.

## 7. Ethical aspects

**Are there any ethical or legal issues that can have an impact on data sharing? These can also be discussed in the context of the ethics review. If relevant, include references to ethics deliverables and ethics chapter in the Description of the Action (DoA).**

**Answer**

Since all data that is made publicly available will be anonymized and will not contain any personal information, no ethical or legal issues are expected regarding the sharing of data.

**Is informed consent for data sharing and long term preservation included in questionnaires dealing with personal data?****Answer**

Yes: "[...] information will be retained for the lifetime of the project. After the research ends, it will be either permanently and irrevocably deleted after a maximum of 12 months or archived for continued research in line with the EU General Data Protection Regulation and the other applicable national and supranational data protection laws.

## 8. Other issues

**Do you make use of other national/funder/sectorial/departmental procedures for data management? If yes, which ones?**

**Answer**

No.

