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VIRT-EU

Values and ethics in Innovation for Responsible Technology in EUrope

Horizon 2020

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Enabling responsible ICT-related research and innovation

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D1.6

Open Research Data Management Plan

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Project Consortium

Beneficiary no.	Beneficiary name	Short name
1 (Coordinator)	IT University of Copenhagen	ITU
2	London School of Economics	LSE
3	Uppsala Universitet	UU
4	Politecnico Di Torino	POLITO
5	Copenhagen Institute of Interaction Design	CIID
6	Open Rights Group	ORG

Dissemination Level

PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	
EU-RES	Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)	
EU-CON	Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)	
EU-SEC	Classified Information: SECRET UE (Commission Decision 2005/444/EC)	

Dissemination Type

R	Document, report	
DEM	Demonstrator, pilot, prototype	
DEC	Websites, patent filling, videos, etc.	
O	Other	
ETHICS	Ethics requirement	X

Contents

Executive Summary

The VIRT-EU Open Research Data Management Plan (DMP) outlines how research data will be handled during and after the project duration. It describes what types of data will be collected, processed or generated with which methodologies and standards, whether and how these data will be shared or made open, and how these data will be curated and preserved. The DMP describes the data management life cycle for all data sets. The purpose of the DMP is to provide an analysis of the main elements of the data management policy that will be used in VIRT-EU with regard to all data sets that will be generated by the project. The DMP will be regularly revisited and updated if necessary to ensure consistency and compliance of project data practices. The DMP is established by the Coordinator with contributions from all partners involved in data collection, processing and management and agreed on by the participants in order to detail explicitly and formally all data management aspects. VIRT-EU is committed to ensuring compliance with the Data Protection Act and the Danish Code of Conduct for Research Integrity[1].

The purpose of the empirical components of VIRT-EU research activities is to first achieve objective 1 of the project: **Empirically identify how local culture and network society influence the understanding and movement of particular social values among *technology developers*** and how local difference and networked commonalities can influence the development of ethical subjects from a virtue ethics perspective, using data mining, social network analysis (SNA), qualitative inquiry and design methods. Second, empirical data collection and analysis are intended to lay the groundwork for accomplishing objectives 2 and 3 of VIRT-EU:

> **Develop a Privacy, Ethical and Social Impact Assessment (PESIA) framework** shaped by state of the art legal research and empirical data, to enable developers and other societal stakeholders to reflect upon, evaluate and take into account not only the data protection, security and privacy aspects of new technologies but also the ethical and social concerns embedded within that challenge autonomy and freedom.

> **Systematically consider and implement the PESIA framework by co-designing self-assessment tools with technology developers**, who may not be able to anticipate the future use of their projects and their clients and partners, grounded in existing developer practices and based on quantitative, case study and design research that identifies how ethics operate as process.

To achieve these three core objectives of the project, VIRT-EU requires the collection of three different types of data. First is quantitative data about developers, collected from online social media and digital

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[1] Danish Code of Conduct for Research Integrity (2014): *http://ufm.dk/publikationer/2014/the-danish-code-of-conduct-for-research-integrity*

repositories, the second is qualitative data collected through the various field sites and the third is data collected in the course of co-design workshops and during the final Design Challenge. These data collection practices risk the collection of personally identifying information (PII) and require careful handling for storage and processing as well as decision-making with respect to preparing these data for participation in the EU Open Research Data Pilot program. The different nature of these data requires different data collection and handling protocols. All approved data collection and handling protocols will follow the general guidelines at both national and EU level (http://ec.europa.eu/justice/data-protection). No vulnerable population will be involved in our study and the data will represent no more than minimal risks to participants beyond what is normally entailed in the participation in developer communication and collaboration events and networks. The risks and discomforts entailed by participation in this study are minimal, as detailed in the core parts of the DMP. Data collection consists of participant observation online and offline, interviews, recording of publicly available online data from online forums and social networks, anonymous surveys, co-design and stakeholder workshops. Participants may withdraw from the study at any point. All requests for data deletion or redaction will be immediately honored to the best of our ability.

The IT University of Copenhagen Research Ethics committee has committed to evaluating and approving the VIRT-EU personal data management plan prior to submission of the official deliverable to the EU. Further, the VIRT-EU consortium includes Associate Professor Rachel Douglas-Jones who is an expert in research ethics as this is her primary area of research. She will conduct research ethics oversight for all data collection activities, development of information and consent forms, requirements for the handling of consent forms and data, appointment of the project's data controller and safe custody of research outcomes.

The VIRT-EU Open Research Data Management Plan provides information about the following points in detail for each of the three different types of data collection (quantitative, qualitative and design):

- Data collection activities (including approaches to managing consent)
- Data storage approaches
- Data processing activities

The DMP gives a first overview on the diversity, scale and amount of data, which will be handled during the VIRT-EU project. Further, this document includes a brief discussion of research ethics as it pertains to VIRT-EU data management activities. Finally, we include a section that details requirements to be fulfilled for data sets to be determined as sharable through the open research data pilot program.

The DMP is not a fixed document, but evolves during the lifespan of the project.

Ethical Considerations – data types and their vulnerabilities

Data management is an ethical issue. The types of data collected here carry different vulnerabilities, as the sections below indicate: some are more easily linked to personally identifying information than others. By dividing the DMP according to data type, we acknowledge and address this ethical dimension of data management. However, there are also different ethical issues at the different stages of research, from collection to processing and storage. The DMP addresses key ethical issues common to the project as a whole but we have tailored these issues to be appropriate and relevant to each type of data collected. Working from the recommendations combined from the Danish Code of Conduct for Research Integrity and the research ethics guidelines of our professional organisations, we have integrated ethical considerations into our plan for how data in this project will be collected, processed and stored. These include consideration of when and where consent processes take place, how data is anonymized and what happens to re-identification keys, the technicalities of storage of data over time, how data will be shared within and beyond the project, and takes into consideration the representation participants at the point of publication.

Participants in VIRT-EU are not definitionally vulnerable: they are not dependent on VIRT-EU researchers, they do not lack decision-making capacity nor do they lack an ability to protect their own interests; they are not historically vulnerable on grounds of inequality or exclusion, nor vulnerable to coercion or undue influence. Through the consent procedures followed within VIRT-EU they are provided with the opportunity to autonomously decide, without coercion and with the option to withdraw, that they wish to participate in the project. However, researchers in the project will be attentive during data collection to the potential for vulnerabilities to arise due to participants engagement with the research project itself, given the networked professional nature of the field into which we intervene, and the potential power asymmetries that may come to exist between researchers and participants. These risks will be minimized by VIRT-EU's anonymization practices and reflexive publication strategies, as mentioned below.

Data Sharing and Joint Analysis within VIRT-EU

VIRT-EU is a research project with inter-connected work packages and researchers working on common datasets within and across institutions. This raises a challenge for the safe and secure transfer of data while generating an efficacious work environment for researchers, without unduly burdensome or restrictive blocks on mutual work. VIRT-EU addresses this challenge through a careful use of university, commercial and open source infrastructures available to the project members. Our quantitative data will be securely stored on university-managed servers in Denmark and Sweden, allowing all members access to the data via a secure web interface detailed below. Our qualitative and design data will be stored in shared folders on an encrypted cloud server. Collaborative coding and data analysis tools will only be used on de-identified field notes and transcripts. Access to physical artifacts produced through co-design will be managed via digital images stored in shared folders on an encrypted cloud server. All participant lists will be stored in a separate encrypted shared folder.

Quantitative Data Management

The digital data sources are a selection of online social media from which we will extract information about: which event individuals and groups under analysis attend – MeetUp data – how they communicate about IoT related topics – Twitter– and how they organize their professional network – various Social Media e.g. LinkedIn . Thus VIRT-EU data collection will mainly take place on social media platforms that are used within a public and professional context. Platforms such as LinkedIn, MeetUP and Twitter, are usually perceived as public spaces where public visibility is often not only expected but actively sought. Despite the general perception of these digital platforms as public spaces, VIRT-EU data collection will actively minimize the collection of PII by not collecting additional information beside publicly available usernames, lists of publicly displayed connections and publicly shared content. Usernames, when belonging to companies, corporate, civil society or media actors (e.g. @ericsson or @wired), will be retained as is. Usernames, when belonging to identifiable individuals, will not be used in any public communication (e.g. social media posts, articles, public presentations) without explicit consent. We will handle such personal data with utmost care following the guidelines of the relevant countries (namely Sweden, Denmark, UK and Italy), keeping these data for only as long as needed for research purposes and securing these data and limiting access to project personnel only.

Even if we target publicly available data (e.g., MeetUp data, tweets), in case of releasing these networks, or of aggregated multilayer networks, as part of the Open Research Data Pilot we will remove all references to the identity of the individuals replacing the user identifiers with randomly generated placeholders. In cases where data collection will occur on forums and discussion spaces where login requirements can create an expectation of privacy, the research team will announce our presence and intentions to the community on the forum, inform them about the study and follow the requirements of the community in our data collection practices. Due to the nature of the project, focusing mainly on developers and IoT companies, monitoring and tracking activities will be based on specific keywords or groups that minimize the risk of accidentally collect data from vulnerable groups or minors. However, if VIRT-EU researchers come to know that we have accidentally collected social media data that is potentially able to identify the author as a member of a vulnerable group or a minor, the data will be immediately removed from the project's data archive. As it is often impossible to assess vulnerable group membership quantitatively, researchers will perform random qualitative checks on our data periodically to guard against such a possibility.

For our algorithmic studies we do not need to retain information about the source of each network, making identity identification practically impossible. During the research phases all project data will be securely stored inside our single handling sites at Uppsala University (in Sweden), where only the portion of the data required to perform the analysis of the network will be replicated in encrypted form. Even if the project will collect publicly available data emergent information might be obtained thanks to the multiplex nature of the data we are collecting. Therefore we will act according to a very clear policy for accessing the full dataset: Access to the server will only be granted to researchers officially involved in the project, or associated researchers (e.g., master thesis students) after signing a non-disclosure agreement. Anonymised versions of specific portions of data will be made available for validation and re-use through the Open Access to Research Data Pilot which will be negotiated and decided by consortium members.

Data collection activities

The quantitative digital data collection approved when this document is being finalized lists four specific data sources: Twitter, LinkedIn, MeetUp, ad-hoc websites. Given the existing diversity in available data and in technological solutions it is required a platform-specific description of the data collection procedures. An overview is provided in Table 1.

Twitter:
Using both REST and STREAM API Twitter will be queried in order to collect: a) tweets produced using a pre-defined topical hashtag (e.g. #iot, #iotdays) b) list of followers/following connections between publicly available key twitter users identified during the ethnographic phase.

LinkedIn:
Through the API available for partners, we will collect the LinkedIn connections of a selected set of users. These users will have volunteered to accept a contact request on the platform to allow our data collection. Recruitment for this LinkedIn data collection participation will be conducted by the qualitative team using known email discussion lists, Twitter and in-person encounters during ethnographic fieldwork (see page 7.) Participants will be informed about the study objectives and data collection purposes through recruitment materials that will include a link to the VIRT-EU website and the online version of the Study Information Sheet[2] (Appendix 1).

Meet up:
Using the available public API we will collect attendance data of specific iot-related public events. Attendance data will then be used to construct an attendance network where people attending the same events will appear to be connected.

Other websites:
On the web, a number of sites provide information about people and organizations that are relevant for the project. Typical examples of these sites are public pages of IoT-related organizations and pages managed by public organizations to lists local activities. For these pages, there is not standard structure nor (typically) APIs, so they will be manually processed as long as they are identified.

Platform	Data collection	Data type	Anonymized	Explicit user authorization	Shared
Twitter	API	Tweets	NO	NO	NO[3]
Twitter	API	Following networks	NO	NO	NO
LinkedIn	API	Contacts	NO	YES	NO
MeetUP	API	Attendance	IF released	NO	YES

Data storage approaches

Data will be stored in password-protected virtual machines not directly accessible from outside a VPN at Uppsala University. Both raw and curated relational data will be stored. In addition, a pool of

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[2] The online version of the VIRT-EU study information sheet is located at: https://virteuproject.eu/researchinfo
[3] Sharing collected Twitter data – even if public – is not allowed by Twitter TOS. Nevertheless it is possible to share a list of TweetID that can be used by other researchers to re-collect the same dataset of tweets and verify the results.

monitoring systems will be deployed. The systems will be controlled through a web interface that will also be used to inspect the database. Backups will happen at virtual-machine level.

A relational database will be used to store the curated information extracted from the raw data. Every time an actor is identified as relevant, s/he will be inserted in the database and annotated with properties and connections to other actors. The role of the database is to keep a high data quality, by avoiding duplicate information and simplifying the identification of missing information. A conceptual schema of the database will be prepared. The data will be stored for up to 12 months after the end of the project to ensure completion of the final analyses and publication and then deleted.

Web interface
The web interface, built with Django over a relational database management system, will be used both to allow all researchers involved in the project to provide information about the data to be extracted in a controlled way and to give information about the data already stored in the system. This site will be password-protected.

Data retrieval process specification
The units responsible for the data collection are UU and ITU. All the parties will receive a process specification describing the steps to submit new requests for data collection to the units at Uppsala University and ITU Copenhagen. All interactions from partners other than Uppsala University will happen through the Web interface.

Data processing activities

Different type of digital data will be processed in different ways. Tweets obtained from hashtag driven collection will be processed in order to obtain communication networks (identifying patterns of interaction between Twitter users) and topic analysis in order to identify the main topics of the online conversations. MeetUp co-attendance data will be transformed into a bipartite network and then projected onto a network showing the co-attendance as a relation between users. Network data from Twitter, MeetUp, and LinkedIN will be used to build a multilayer network model as described in the research proposal. All the necessary details of data processing are provided in table 2.

Data	Original format	Processed format	Analysis
Tweets	Text (.csv)	Network (.graphml)	Communication Networks
Tweets	Text (.csv)	Annotated text (.csv)	Topic identification
Twitter following	Network (.csv)	Network (.graphml)	Cluster analysis
LinkedIn	Network (.csv)	Network (.graphml)	Cluster analysis
MeetUp	Attendance (.csv)	Network (.graphml)	Cluster analysis
Multilayer network	Network (.csv)	Network (.mpx)	Cluster & centrality analysis

Qualitative Data Management

VIRT-EU will analyze and map the ethical practices of European hardware and software entrepreneurs, maker and hacker spaces, and community innovators. Leveraging state of the art collaborative SSH and ICT methodological innovations, data collection tools will include data mining, quantitative and qualitative social science and design research practices. Specifically, data will be collected through ethnographic observations, surveys, questionnaires, structured and/or semi-structured interviews, co-design workshops, and a Design Challenge activity.

The VIRT-EU consortium is comprised of experienced anthropologists and ethnographers who will follow the ethical guidelines of the Anthropological American Association (US) and the Association of Social Anthropology (UK) – considered the gold standard in the field (where these guidelines diverge, the more stringent will be followed.) Consortium members involved in this form of data collection are trained to address ethical issues reflectively throughout data collection and in the course of analysis.

By agreeing to take part in this study participants will be contributing to research related to identifying how local culture and network society influence the understanding and movement of particular social values among *technology developers,* and how local difference and networked commonalities can influence the development of ethical subjects from a virtue ethics perspective. There is little or no risk, inconvenience or discomfort to those who participate in this study, assured through the extensive use of pseudonymization and anonymization in the research process and reporting. Participants will be able to request that any data relating to their participation is destroyed up until project completion or until the relevant data have been published in project reports and other output.

Data collection activities and consent

For our qualitative and ethnographic studies of online and offline communities of practice, we will collect screenshots, audio/visual recordings, field notes and observations. We recognize that these forms of data collection may identify individuals. Key pillars of ethics in ethnographic and qualitative studies are reflexivity and accountability. Researchers at the various research sites are responsible for identifying and adhering to local community norms and practices about data and information. Any recording of interviews, collection of photographic evidence and the like, will be conducted with the explicit consent of participants (see below). Participants will be informed that they are welcome to request removal and destruction of any collected data at any time. The research team will anonymise all participants in the research, acknowledging that full anonymisation is not always possible within small communities of practice, and respect any requests for information to be left off the record. The qualitative researchers will continually reflect on their own role in constructing the narrative of their research site, and acknowledge any power differentials that might result. Results of qualitative fieldwork will be communicated back to participants through co-design exercises and stakeholder meetings throughout the project in WP3, WP5 and during the final Design Challenge event in WP6.

Throughout all qualitative fieldwork will be taking informed consent as a basic ethical tenet of ethnographic and design research practice. However, the use of the written consent form in the process of ethnographic research is counterproductive. Thus we will primarily rely on iterative oral consent in interviewing and participant observation. Ethnography is a long-term engagement with others, and the

up-front nature of a signed document means that what is being consented to will change over time. As the Association of Social Anthropology puts it, "Given the open-ended and often long-term nature of fieldwork, ethical decision-making has to be undertaken repeatedly throughout the research and in response to specific circumstances" (ASA 2011:2). Further, the use of the written consent form requires participants to identify themselves in writing, while the use of oral consent allows participants to remain anonymous if they so choose.

Oral consent entails making sure that interlocutors understand they are taking part in a research project and are free to refuse participation; understand that they can opt out of the study at any time; know if and when we are collecting information that could identify them, and that we will respect their wishes to have their identity acknowledged or kept confidential; they understand what kinds of information we are collecting and what we are carrying from our interactions with them. The risks and benefits of participating in the research will be discussed, along with options to minimize risk (e.g. anonymity). Oral consent/Verbal consent is a recognized form of alternate consent by the two main bodies of anthropology, the American Anthropological Association (USA) and the Association of Social Anthropologists (UK), most often used in ethnographic practice in settings where written consent would be disruptive, unwelcome, or inappropriate. In engaging with oral consent, researchers will pay particular attention to explicit opt out requests that will be noted down in field-notes and then transferred into the participant consent and opt-out information document maintained by the project.

As a backup precaution all data will be reviewed immediately after collection and cross-checked with participant consent and opt-out information collected in prior engagements. If any data has been inadvertently collected relating to a non-consenting individual, this material will be immediately deleted or destroyed.

The documentation accompanying oral consent is typically a Research Information Sheet (see Appendix 1). In our case, a jargon free study information sheet with further information will be available online, which will cover project goals, data treatment and participant rights, as well as the contact details of the researchers involved and the ethical oversight committee at ITU. This information will be presented to all participants via our website with the link available on our business cards.

For more structured data collection such as surveys or questionnaires, all participants will be presented with a Research Information Sheet prior to entering the survey (https://virteuproject.eu/researchinfo). The purpose, procedures, and risks of participation will be conveyed to participants in keeping with the processes of informed consent, and participation will proceed only if they agree without coercion. We will present potential participants with an overview of the research and accept their active selection to continue with the survey as an indication of consent. No personally identifying information will be collected throughout the survey unless participants actively choose to identify themselves in their answers or to contact us directly. Such identifying information will be carefully removed from the data prior to analysis and retained for reporting only if participants explicitly wish to be identified, as is sometimes the case with this form of data collection.

Data storage approaches

Audio recordings, transcriptions, online observation data and field notes will be manually scrubbed of all identifying information and assigned a code as soon as data collection is complete and the lead researchers return from the field. The code key linking the data with identifying information will be kept separately in a secured folder in a shared folder repository maintained by the project. Access to the repository is made available only to project personnel involved in the empirical data collection and processing. Once coded, all data will be retained indefinitely for future study. The key will be destroyed upon completion of the project. Oftentimes qualitative studies can yield important insights much later, after similarly themed studies have been conducted at different sites. However, the insight potentials of such qualitative data do not rely on the identification key. Thus, upon completion of the project the de-identified data will be stored securely as encrypted files, maintained by the coordinating institution.

Data collected through surveys or structured questionnaires will be carefully scrubbed of identifying information if any should be entered. Such information will be kept for reference only in accordance with explicit wishes of the participants.

In case during the project it is considered relevant to acquire more information about some of the individuals involved in the public online discussions, we will first contact these individuals, ask for an explicit consent in retaining their data, ensure that they are informed about our usage of the data, retention and disposal periods, that they can at any time remove or update the information in our servers, and we will follow the general guidelines at both national and EU level (http://ec.europa.eu/justice/data-protection).

With explicit consent of participants we may make anonymised qualitative data available for validation and re-use through the Open Access to Research Data Pilot, which will be negotiated and decided by consortium members.

Data Processing Activities

Given the diversity of data sources and data activities, personally identifying information will at times be necessary to connect different data streams and to interpret these. The use of such information will be done with utmost care for data analysis only and never for reporting or publication. For example, personally identifying information may be necessary to connect quantative data collected via Twitter with ethnographic observations in order to aid interpretation of both types of data. Such analyses, however, will be kept securly in shared project folders and all partners will agree to ensure that no identifying information is ever revealed in published form.

Qualitative data processing includes a range of activities such as coding, semantic analysis, memoing, situational maps and thematic analysis among others. VIRT-EU researchers will ensure that all analysis output is scrubbed of identifying information when such output is shared with parties outside of the project members such as research participants or members of the advisory board. Any publications that include quotes or pictures will be anonymized. All anonymous survey data will be analyzed and published at the population and not at the individual level.

Design Research Data Management

The design research component of VIRT-EU will pay special attention to research ethics practices ensuring that all participants in co-design workshops and stakeholder meetings are provided with study information sheets and are given the opportunity to provide written consent for participation. Participants will retain the right to revoke consent and to stop participating at any time. Written consent will also be collected for official structured or semi-structured interviews conducted by the consortium members during the evaluation phase at the conclusion of the Design Challenge as personal information will be collected during those interviews to assist participation in the Design Challenge itself. Design research in practice holds to the same research integrity tenets that govern all of qualitative research activities of VIRT-EU.

Data collection activities and consent

Throughout all qualitative fieldwork researchers will be taking informed consent as a basic ethical tenet of research practice. The design research component of VIRT-EU will primarily focus on conducting co-design and stakeholder workshops throughout years 2 and 3 of the project. Design research is not constrained to workshops alone, thus a research Information Sheet (see Appendix 1) will be provided to participants for those instances when data is gathered via structured surveys and/or questionnaires, and structured/semi-structured interviews where no personal information is collected or where personal identifiers are removed from the data. The Research Information Sheet will establish clearly that consent is implied for participating in the survey or questionnaire, and participating in the interviews and co-design workshops. If, however, a research engagement extends beyond asking questions to include activities such as discussing incidents and activities that could potentially identify the individual, then written consent is required.

As co-design and stakeholder workshops entail prolonged and intensive face-to-face engagement with participants, however, additional care will be taken to obtain consent for participation and to respect the wishes of participants with regards to the management of research data and the physical artifacts produced. To ensure the integrity of research practice and research content gathered during co-design or stakeholder workshops, written consent forms (see Appendix 2) will be used. These consent forms will be stored in locked cabinets at the Copenhagen Institute of Interaction Design separately from the data to ensure that the data remain confidential. Upon completion of the project, consent forms will be stored by the coordinator and retained for five years for audit purposes.

Data storage approaches

All data collected in the course of co-design workshops and stakeholder workshops will be carefully scrubbed of all identifying information. Participant lists will be kept separately for the duration of the project to ensure a longitudinal aspect to the co-design process that requires repeated engagements with the same participants in co-design workshops and during and after the Design Challenge held at the end of the project to enable an evaluation of effectiveness of project outcomes. Participant lists will be destroyed at the completion of the project. All physical artifacts produced in the course of the workshops will be held under lock and key in the offices of the Copenhagen Institute of Interaction Design for the duration of the project and destroyed upon completion of the project unless permission is obtained directly from the participants to display these artifacts.

Anonymized and processed data will be kept separately and retained after project completion. All participants will be notified of the possibility of their data being kept after project completion prior to initial participation and consent will be obtained via consent form.

Data processing activities

We will use the processes described above for all qualitative data for all design-specific data collected during co-design and stakeholder workshops.

Open Research Data Requirements

Selected data will be shared publicly during or after the lifetime of the project. Which data will be shared will depend on the scientific relevance of the collected data, nevertheless PII and sensitive data will never be released or shared. All long term data collected or generated will be deposited in a repository. If required, the entire information content of the VIRT-EU project can be stored on disk for archiving. This functionality can also be used to transfer VIRT-EU content to another system. The final repository has not been chosen yet but the consortium is currently testing the opportunities offered by Dataverse. Dataverse satisfy most of the necessary requirements:

- Offers an open source option that will be hosted at ITU.
- Data will be physically located in EU (Denmark)
- Supports a large variety of data types, from network data to qualitative observations.
- Supports differential access to data allowing for public or private data access.
- Supports several types of license for shared data, including CC0 (CC Zero Waiver) or ODBL (Open Database License).

ITU Research Ethics Committee Statement

The ITU Research Ethics Committee has reviewed the VIRT-EU Open Research Data Management Plan and confirms its compliance with the Danish Code of Conduct on Research Integrity.

Copenhagen 26. April 2017

Espen Arseth, Professor
Chair, ITU Research Ethics Committee

Appendix 1: Research Information Sheet

VIRT-EU recognizes that the particulars of the information contained in this research information sheet – the identity of the data controller, the specific purposes of data processing and the exercise of the rights of access to data – will differ on the basis of the specific circumstances in which data are collected. The information below will be augmented as applicable based on the research context and prior experience. The information presented in this version of the Research Information Sheet is an exemplar of information to be provided to research participants.

RESEARCH INFORMATION SHEET

Project: VIRT-EU: Values and Ethics in Innovation for Responsible Technology in Europe

Principal Investigator's names:
1. Irina Shklovski – ITU Copenhagen
2. Rachel Douglas-Jones – ITU Copenhagen
3. Luca Rossi – ITU Copenhagen
4. Javier Ruiz – Open Rights Group

5. Matteo Magnani – Uppsala University
6. Alison Powell – London School Of Economics
7. Alessandro Mantelero – Politechnico Di Torino
8. Annelie Berner – Copenhagen Institute of Interaction Design

You are invited to take part in a research study about values and ethics in innovation practices. If you would like more information about the project please see http://virteuproject.eu

What does the research involve?
The aim of this research is to empirically identify how local culture and network society influence the understanding and movement of particular social values among *technology developers,* and how local difference and networked commonalities can influence the development of ethical subjects from a virtue ethics perspective. Empirical data collection and analysis are intended to lay the groundwork for accomplishing the following objectives:

> **Develop a Privacy, Ethical and Social Impact Assessment (PESIA) framework** shaped by state of the art legal research and empirical data, to enable developers and other societal stakeholders to reflect upon, evaluate, and take into account not only the data protection, security and privacy aspects of new technologies but also the ethical and social concerns embedded within that challenge autonomy and freedom.

> **Systematically consider and implement the PESIA framework by co-designing self-assessment tools with technology developers** who may not be able to anticipate the future use of their projects and their clients and partners, grounded in existing developer practices and based on quantitative, case study and design research that identifies how ethics operate as process.

What does participation entail?
The researcher/s will conduct formal and informal interviews with participants who agree to be interviewed. These formal interviews will be audio taped and transcribed. If at any point you are uncomfortable with the audiotaping, please let us know and we will turn off all recording devices.

You may also be invited to participate in any of the following: a short online survey, a series of co-design workshops, and/or a Design Challenge focused on developing new approaches to ethical

innovation practices. The workshops will be conducted at a time convenient for those involved. Participation in the project and in any of these research activities is optional.

Participation in this research is voluntary. There is no cost to you for participating. You may refuse to participate or discontinue your involvement at any time without penalty. You can choose to skip a question at any time.

Source of funding
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727040.

Consenting to participate in the project and withdrawing from the research
You can consent to participating in the project and in any of the activities outlined above by completing the consent form attached to this Explanatory Statement and returning it to the researcher. You can also withdraw from the research at anytime. Up until the project is reported in publications you can request that any data relating to your participation be destroyed.

(a) Your consent is implied if you participate in the observational and informal interview activities. This means that you are consenting to the collection of anonymized data about your experiences. For instance, we will collect data about your opinions on responsible innovation, data protection, issues of privacy, and security.

(b) Survey, workshops, Design Challenge, structured and semi-structured interviews: if you wish to participate in the survey, workshops, Design Challenge, and/or structured and semi-structured interview please sign and return the consent form to the researchers.

Possible benefits and risks to participants
By participating in this study you will be contributing to research related to understanding how European IoT innovators and developers make ethically consequential decisions – about code, hardware and data – for new connective devices, and the assumptions about human behavior, privacy and freedom that underpin European cultures of IoT innovation. There is little or no risk, inconvenience or discomfort to you in participating in the study.

Payment
There is no payment or reward offered for those participating in this research.

Confidentiality and storage of data
All research data will be de-identified and stored securely and confidentially. This means that your name and identifying details will be removed prior to reporting and publication and will not be shared with others. However, we cannot guarantee complete anonymity since the content of what you say, despite our best intentions, may be identifiable to people who work/communicate closely with you.

Pseudonyms will be used for all names in any reports and research publications. Data collected will be stored in accordance with the Danish Code of Conduct for Research Integrity. Only the researchers that are part of the VIRT-EU consortium will have access to the data. The data will not be used for purposes other than the purposes of this research project.

Results

Results and project outputs will be published on the project website, reports, conference proceedings, and in journal articles. You are welcome to email the researchers to request findings, which will be emailed to you in summary form.

Additional information

If you have any comments, concerns, or questions regarding the conduct of this research please contact the project administrator – Jonas Langeland Pedersen by phone +45 7218 5227; by email jolp@itu.dk; or by mail: IT University of Copenhagen, Rued Langgaards Vej 7, 2300 Copenhagen S, Denmark.

Appendix 2: Consent Form

CONSENT FORM FOR INTERVIEWS, SURVEYS, AND WORKSHOPS

Project: VIRT-EU: Values and Ethics in Innovation for Responsible Technology in Europe

Principal Investigator's names
1 Irina Shklovski – IT University of Copenhagen
2 Rachel Douglas-Jones – IT University of Copenhagen
3 Luca Rossi – IT University of Copenhagen
4 Javier Ruiz – Open Rights Group

5 Matteo Magnani – Uppsala University
6 Alison Powell – London School of Economics
7 Alessandro Mantelero – Politechnico Di Torino
8 Annelie Berner – Copenhagen Institute of Interaction Design

I have been invited to participate in the VIRT-EU research project specified above. I have read and understood the Explanatory Statement and I hereby provide consent to take part in this project:

1. I confirm that I received information about the project. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. ☐

3. I understand that any information given by me may be used in future reports, articles or presentations by the research team. ☐

4. Select one of the following:

   a. I do not want my name used in any publications of reports in this project ☐

   b. Please use an alternative name for me (write name here) _____ ☐

   c. I would like my name used and understand that what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognized as my contribution. ☐

5. I agree to the interview / working group / consultation being photographed, audio and/or video recorded ☐

6. I agree to the use of quotes, pictures, video and audio in publications and presentations (In the case of withdrawal of consent all records of you will be deleted, or in case where you appear with other participants who have given their consent, you will be anonymized to make sure your presence in the dataset is unrecognizable) ☐

Name of Participant: _____

Signature _____ Date _____