

OpenReq

Grant Agreement n°	732463
Project Acronym:	OpenReq
Project Title:	Intelligent Recommendation Decision Technologies for Community-Driven Requirements Engineering
Call identifier:	H2020-ICT-2016-1
Instrument:	RIA (Research and Innovation Action)
Topic	ICT-10-16 Software Technologies
Start date of project	January 1st, 2017
Duration	36 months

D1.3 Data Management Plan

Lead contractor:	TU Graz
Author(s):	TU Graz, ENG, HITEC, QT, SIEMENS, UH, UPC, VOGELLA, WINDTRE
Submission date:	June 2017
Dissemination level:	PU



Project co-funded by the European Commission under the H2020 Programme.



Abstract: This document describes how data is managed in OpenReq. In particular, this deliverable describes for each work package how the data management will be implemented (in terms of studies where data is generated or included and how this data is stored). OpenReq does not plan to gather any highly sensible data (medical records, etc.). In cases where there is a need to anonymize sensible data, this data is anonymized correspondingly.



This document by the OpenReq project is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 Unported License.

This document has been produced in the context of the OpenReq project. The OpenReq project is part of the European Community's H2020 Programme and is as such funded by the European Commission. All information in this document is provided "as is" and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability. For the avoidance of all doubts, the European Commission has no liability in respect of this document, which is merely representing the authors view.



Table of Contents

1. INTRODUCTION.....	5
2. DATA MANAGEMENT STRATEGIES OF OPENREQ PARTNERS	6
<i>HITEC.....</i>	<i>6</i>
<i>TU Graz.....</i>	<i>6</i>
<i>ENG.....</i>	<i>7</i>
<i>UPC.....</i>	<i>7</i>
<i>VOGELLA.....</i>	<i>8</i>
<i>SIEMENS</i>	<i>8</i>
<i>UH</i>	<i>8</i>
<i>QT</i>	<i>8</i>
<i>WINDTRE.....</i>	<i>8</i>
3. DATA MANAGEMENT ASPECTS OF OPENREQ WORKPACKAGES	9
WP 1 OpenReq Conceptual Framework	9
<i>Planned studies & resulting data</i>	<i>9</i>
<i>OpenReq data used in OpenReq knowledge base.....</i>	<i>10</i>
WP 2 Software Requirements Intelligence	10
<i>Planned activities & resulting data</i>	<i>10</i>
<i>OpenReq data used in OpenReq knowledge base.....</i>	<i>12</i>
WP 3 Personal Recommendations for Stakeholders.....	13
<i>Planned studies & resulting data</i>	<i>13</i>
<i>OpenReq data used in OpenReq knowledge base.....</i>	<i>15</i>
WP4 Group Decision Support	15
<i>Planned studies & resulting data</i>	<i>16</i>
<i>OpenReq data used in OpenReq knowledge base.....</i>	<i>18</i>
WP 5 Knowledge and Dependency Management	18
<i>Planned studies & resulting data</i>	<i>18</i>
<i>OpenReq data used in OpenReq knowledge base.....</i>	<i>20</i>
WP 6 OpenReq Interfaces.....	20
<i>Planned studies & resulting data</i>	<i>20</i>
<i>OpenReq data used in OpenReq knowledge base.....</i>	<i>21</i>
WP 7 Trials & Evaluation	21



Planned studies & resulting data 22
OpenReq data used in OpenReq knowledge base 23
WP 8 Communication, Dissemination & Exploitation..... 23
WP 9 Project and Quality Management 23
4. CONCLUSION24



1. Introduction

After summarising the data management strategies of each partner, the deliverable describes the handling of the different types of OpenReq data. The common structure used to describe data handling in the specific work packages is the following:

- Working data collection (i.e. data collected by the WPs in order to develop the platform and prepare the surveys)
- Data collected from users and organizations during the trials
- Data related to the OpenReq Knowledge Base

OpenReq partners currently do not have background data that cannot be made public, except Siemens that wants to protect business data of previous or current projects. All partners reserve the right to protect some additional background data if the need arises as the project progresses, after informing the PO about this change

This deliverable is a dynamic document that will be updated if needed during the execution of the project



2. Data Management Strategies of OpenReq partners

HITEC

HITEC will ensure that any research that involves personal data processing is compliant to the German Data Protection Law through the legal department of the University of Hamburg.

We will consult the Ethical Committee of the University of Hamburg's Department of Informatics¹ to check that the research being done within OpenReq complies with ethical and legal requirements.

In addition, we can also consult the Data Protection Officer² to ensure compliance with the Hamburgische Datenschutzgesetz ([HmbDSG](#))³. Finally, we will use our long-standing collaboration to key research institutes in ICT law and ethics (in particular with KU-Leuven and Humboldt Institute for Internet and Society) to gather early feedback and discuss potential issues and possible solutions.

The data collected from the studies will be anonymized and stored at local servers managed by the computing and data center of the Department of Informatics⁴.

TU Graz

TU Graz will conduct qualitative and empirical studies with typical adult populations. The study participants will provide informed consent before starting the study. Participant information sheets will be produced for each study detailing what the study will involve, and participants will be given time to reflect on whether they want to take part and provided with an opportunity to ask for clarification. Explicit consent will be collected for each study (in terms of a signed statement or other types of consent in online studies), which will cover consent to participate and consent for data to be gathered, stored, and shared (in anonymized form).

Ethics approval at TU Graz will be sought for those studies that require this from the University's Commission for Scientific Integrity and Ethics. Data will be collected, analysed, anonymized and stored according to the TU Graz Datenschutzordnung and the Austrian Datenschutzgesetzes 2000 (DSG 2000), BGBl I Nr. 165/1999.

The data collected from all user studies conducted at TU Graz will be stored in an anonymized form such that there is no chance for inferences to the study participants. All user studies will be stored on the basis of the server infrastructure of TU Graz which follows the latest security standards. Backups of all the data are generated automatically on a daily basis.

¹ <https://www.inf.uni-hamburg.de/en/home/ethics.html>

² <https://www.datenschutz-hamburg.de/>

³ <https://www.hh-datenschutz.de/>

⁴ <https://www.inf.uni-hamburg.de/en/inst/irz.html>



Details related to the way data is gathered and with whom it is shared are provided in the work package related subsections of the document. All collected data will be stored in a secure TU Graz OpenReq data storage.

ENG

The research performed by ENG involves qualitative and empirical studies with typical adult populations. The participants will be able to give informed consent for themselves. Participant information sheets will be produced for each study detailing what the study will involve, and participants will be given time to reflect on whether they want to take part and provided with an opportunity to ask for clarification. Written consent will be obtained for each study, which will cover consent to participate and consent for data to be gathered, stored, and shared (in anonymized form)

Engineering will ensure that any research that involves personal data processing is compliant to the Italian Data Protection Law.

We will consult the Privacy and Legal Committee of Engineering to check that the research being done within OpenReq complies with ethical and legal requirements.

UPC

The UPC, according to the Spanish Organic Law 15/1999 of 13 December on protection of personal data (LOPD), Royal Decree approving the regulation implementing the Organic Law on Protection of personal data, and Law 30/2007 of 30 October on Public Sector Contracts, and the Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individual, and after the 25 May 2018, the General Data Protection Regulation EU2016/679, adopted in April 2016, with regard to the processing of personal data and on the free movement of such data agree, that the data collection and/or processing in these studies will generally not involve personal data as defined in applicable international, EU and national law. In case the studies require the treatment of personal data, the data protection department of UPC will be consulted.

The research done by UPC will involve qualitative and empirical studies with typical adult populations. The participants will be able to give informed consent for themselves. A document will be produced for each study detailing what the study will involve. This document will allow participants to decide whether they want to take part in the study, having the opportunity to ask for clarifications. Depending on the type of study, at the end of it each participant will have the opportunity to review the results extracted from his participation, to make sure that the results reflect the participant, and he will have the opportunity to make modifications or clarifications if needed. The data results will also be anonymized.

The data gained out of the studies conducted by UPC will be stored in an anonymized form such that there study participants' identity cannot be traced back. All data related to the studies will be placed on the infrastructure of UPC, which follows the latest security rules and should therefore be secure against attacks. Backups of all the data are generated automatically twice a day.

The legal department of UPC will check that the research being done by UPC within OpenReq complies with legal requirements.



VOGELLA

Vogella will gather information from the Eclipse bug tracking system Bugzilla in order to identify, classify and prioritize requirements for the Eclipse IDE development. A questionnaire will be created and distributed to major Eclipse developers in order to find out which criteria are relevant to them when setting the priority of requirements and accepting requirements for the next release.

SIEMENS

Data processing by Siemens in the context of this project will involve only Siemens internal data, e.g. data about bid projects. All data processing is conducted in compliance with Austrian law. If necessary (e.g. in case of data related to employees which is currently not planned), the respective authorities such as staff council will be consulted.

UH

This project involves qualitative and empirical studies. The participants will be able to give informed consent for themselves. Participants will be given time to reflect on whether they want to take part and about recording and storing data. They will be provided with an opportunity for clarification.

The research data will be stored at local servers maintained by the “IT for research” unit, which provides research infrastructure for the faculty of Natural Sciences and ensures that data protection and security features convey the local laws and highest standards.

QT

The Qt Company will gather and make available a dataset of their Jira issue tracking system. The data will be used to identify, classify and prioritize requirements extracted from different projects maintained by the company (see <https://bugreports.qt.io>). The acquisition of data regarding commercial projects is currently under negotiation in order to guarantee ownership and anonymity of the data.

WINDTRE

This work package involves qualitative and empirical studies with typical adult populations. The participants will be able to give informed consent for themselves. Participant information sheets will be produced for each study detailing what the study will involve, and participants will be given time to reflect on whether they want to take part and provided with an opportunity to ask for clarification. Written consent will be obtained for each study, which will cover consent to participate and consent for data to be gathered, stored, and shared (in anonymized form)

WindTre will ensure that any research that involves personal data processing is compliant to the Italian Data Protection Law.

We will consult the Privacy and Legal Committee of WindTre to check that the research being done within OpenReq complies with ethical and legal requirements.



3. Data Management Aspects of OpenReq Workpackages

WP 1 OpenReq Conceptual Framework

The following table describes studies and related data collected for analysis purposes. It also includes references to OpenReq trial partners and a short description of trial partner data used in order to achieve the goals of WP1. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.

Planned studies & resulting data

WP Task	Study description
Task 1.1 State of the art: Continuous monitoring and documentation	<p>Studies regarding state of the art and open issues in recommender systems for requirements engineering.</p> <p>Resulting Data: Anonymous feedback from industry on the state of the art of recommender systems in RE.</p>
Task 1.2 Requirements engineering for OpenReq	<p>Studies regarding the requirements of the OpenReq trials mainly based on on-site interviews.</p> <p>Resulting data: Anonymized summaries of the interviews conducted in the trials (confidential information from trial partners will be anonymized).</p>
Task 1.3 OpenReq platform architecture	No user studies and data collection are planned in this context.
Task 1.4 Specification of technological and project standards	No user studies and data collection are planned in this context.
Task 1.5 Project infrastructure for integration, testing, and deployment	No user studies and data collection are planned in this context.
Task 1.6 OpenReq process & methodology	<p>Studies regarding state of the art and open issues in recommender systems for requirements engineering with a special focus on the impact of AI technologies on requirements engineering processes.</p> <p>Resulting Data: Anonymous industry feedback on the related state of the art.</p>



OpenReq data used in OpenReq knowledge base

Scientific publications representing outcomes of the mentioned studies and beyond are stored in the OpenReq knowledge base and are publicly accessible.

The accessibility of deliverables (related to WP1) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal. This topic is still under discussion by the impact committee. Further details can be found in deliverable D8.4.

WP 2 Software Requirements Intelligence

The following table describes the data collected for analysis purposes which are used to develop the OpenReq platforms and algorithms in order to achieve the goals of WP2. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.

Planned activities & resulting data

WP Task	Activity description
Task 2.1 Design analytics & requirements intelligence approach	No user studies and data collection are planned in this context. However, the approach will be based on the activities presented in Task 2.2 and Task 2.3
Task 2.2 Collection and analysis of explicit feedback	<p>The data gathered from social media websites (including metadata) necessary for this task will be collected, anonymized, stored and analyzed in accordance with the guidelines of the sources and following the recommendation of the German Data Protection Law. When applicable (e.g., for the case of explicit data from OpenReq trial partners bug tracking systems) we will follow the partners' policy regarding data management.</p> <p>Text mining and natural language processing algorithms will be applied to a specific sample of the overall population of publicly available user-generated social media content (e.g., content referring to one or more of the OpenReq trial partners in a given timeframe)</p>



	<p>Resulting Data: the collection of user-generated social media content will result in a dataset stored in a way that could be eventually shared following the guidelines mentioned above.</p> <p>The analysis will result in a set of anonymized user needs (with case-specific metadata attached to it), and an anonymous characterization of the users</p>
Task 2.3 Collection and analysis of implicit feedback (usage data)	<p><i>Ad Hoc</i> developed sensors will collect patterns of usage and context from the single user. To that end existing service (e.g., cloud services) will be leveraged; therefore, the relative policies will be followed (for example https://developers.google.com/terms/ or https://developer.apple.com/programs/terms/apple_developer_agreement.pdf)</p> <p>The data will be collected and analyzed following the recommendation offered by the MUSES and FASTFIX ERC-FP7 projects, and European Commission (http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:31995L0046)</p> <p>Resulting Data: the collection of usage data will result in an anonymized dataset which will be stored and eventually shared in accordance with the guidelines presented above.</p> <p>The analysis will result in a set of anonymized set of rules and patterns</p>
Task 2.4 Analytics Backend	<p>Based on the continuous collection of structured implicit and explicit feedback from the components developed in T2.2 and T2.3</p> <p>We will use our design & requirements intelligence approach to learn from the feedback data. In particular, text-mining algorithms will allow analysis of natural language texts, such as text-based documents or user feedback. We will generate sets of training data to test the</p>



	<p>performance of the algorithms selected in T2.1 with regards to accuracy and performance.</p> <p>So we will use data collected in the previous steps and data from the trials (i.e. from Wind Tre Trial), and we will inherit all the policies for privacy issues of both.</p>
<p>Task 2.5 Interactive visualization of requirements data</p>	<p>Stakeholders need interactive visualizations of descriptive and predictive analytics data to inform insights about requirements decisions. We will implement corresponding methods and algorithms.</p> <p>So we will use data collected in the previous steps and data from the trials (i.e. from Wind Tre Trial), and we will inherit all the policies for privacy issues of both. If the visualization of data involves personal data usage, we will anonymize the data.</p>
<p>Task 2.6 Integration & refinement of requirements intelligence components</p>	<p>As for the previous task</p>

OpenReq data used in OpenReq knowledge base

Scientific publications representing outcomes of the mentioned user studies and beyond are stored in the OpenReq knowledge base and are publicly accessible through preprint services (such as arXiv) or directly on the Knowledge base.

The dataset (or a sample thereof) will be made accessible when possible by taking into account the policy defined by the partners in the OpenReq proposal see section *Data Management Strategies of OpenReq Partners* of this document).

The accessibility of deliverables (related to WP2) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal.



WP 3 Personal Recommendations for Stakeholders

The following table describes user studies and related data collected for analysis purposes which are used to develop the OpenReq platforms and algorithms and publish corresponding research results. This table could be updated in the future. It also includes references to OpenReq trial partners and a short description of trial partner data used in order to achieve the goals of WP3. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.

Planned studies & resulting data

WP Task	Study description
Task 3.1 Design stakeholder recommendation approach	No user studies and data collection are planned in this context. The approach will be based on the activities presented in Task 3.2, Task 3.3, Task 3.4, Task 3.5 and Task 3.6.
Task 3.2 Screening and recommendation of relevant requirements	<p>Empirical studies on recommendation algorithms that support requirements screening and reuse conducted within the scope of software-engineering courses at TU Graz. Evaluation of the prediction quality of the recommendation algorithms focusing on how well the algorithms predict relevant requirements and related artefacts in the current project context.</p> <p>Resulting Data: Information about requirements, their properties and the performance of the algorithms in anonymized fashion.</p>
Task 3.3 Recommendation for improving requirements quality	<p>Analysis of the current requirement quality assurance approach from the OpenReq partners</p> <p>Analysis of meta-data of requirements provided by the OpenReq trial partners</p> <p>Knowledge base analysis of the requirement documents provided by the OpenReq partners</p> <p>Evaluation of the improvements quality based on the recommendation approach (e.g., survey/interviews)</p> <p>Resulting data: Information about</p>



	<p>requirements quality improvements (requirements metadata, properties).</p> <p>Anonymized data from the evaluation of the proposed requirements improvement approach.</p>
Task 3.4 Predicting requirement properties	<p>Social network analysis of networks provided by OpenReq trial partners (in anonymized fashion).</p> <p>Requirements documents analysis provided by the trial partners.</p> <p>Evaluation of the prediction quality of the recommendation algorithms focusing on the prediction of requirement properties.</p> <p>Empirical studies on the impact of different recommendation strategies for predicting requirement properties within the scope of the OpenReq trial partners.</p> <p>Resulting Data: Information about requirements, their properties and the performance of the algorithms in anonymized fashion.</p>
Task 3.5 Identification and recommendation of relevant stakeholders	<p>Social network analysis of networks provided by OpenReq trial partners (in anonymized fashion).</p> <p>Requirements documents analysis provided by the trial partners.</p> <p>Evaluation of the prediction quality of the recommendation algorithms focusing on the prediction of stakeholders that are assigned to requirements.</p> <p>Empirical studies on the impact of different recommendation strategies for predicting stakeholders assigned to requirements within the scope of the OpenReq trial partners.</p> <p>Resulting Data: Information about requirements, the stakeholders assigned to them and the performance of the algorithms in anonymized fashion.</p>



<p>Task 3.6 Context-aware recommendations for stakeholders</p>	<p>Evaluation of the context-observer component that takes into account contextual information to decide when, what and which way recommendations will be delivered.</p> <p>Empirical studies on the impact of the context-observer component within the scope of the OpenReq trial partners.</p> <p>Resulting Data: Information about the performance and usability of the context-observer component.</p>
<p>Task 3.7 Integration & refinement of the OpenReq recommender engine</p>	<p>Usability Studies on different prototype versions of OpenReq services. These studies will be conducted with students at UPC and the trial partners and will be based on questionnaires and prototype evaluations.</p> <p>Resulting Data: Anonymous user feedback on usability questionnaires such as SUS (System's Usability Scale).</p>

OpenReq data used in OpenReq knowledge base

The main assets of this work package (assets of the studies such as guides, protocols and results summary; state-of-the-art results; documents explaining the work in this work package; etc.) will be available in the OpenReq Tuleap instance and the OpenReq knowledge base, which runs on the technical infrastructure of HITEC.

The accessibility of deliverables (related to WP3) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal.

WP4 Group Decision Support

The following table describes user studies and related data collected for analysis purposes which are used to develop the OpenReq platforms and algorithms and publish corresponding research results. It also includes references to OpenReq trial partners and a short description of trial partner data used in order to achieve the goals of WP4. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.



Planned studies & resulting data

WP Task	Study description
Usability Studies	<p>These studies will be conducted with students at TU Graz, User-Communities of the trial partners and within the scope of questionnaires and prototype evaluations and supported by anonymous communities and micro worker platforms.</p> <p>Resulting Data: Anonymous user feedback on usability questionnaires such as SUS (System's Usability Scale).</p>
Task 4.1 Group decision biases	<p>These studies will be conducted within the scope of large software-engineering courses at TU Graz where students work in groups to develop software. Existing decision biases in the context of OpenReq trials will be analyzed on the basis of questionnaires and prototype evaluations.</p> <p>Resulting Data: Information about software-engineering groups, their properties and performance in anonymized fashion.</p>
Task 4.2 E-participation platforms and methodologies for RE group decisions	<p>Analysis and studies (surveys, interviews) of existing E-Participation and E-Democracy Platforms regarding usability and methodologies. Adjustment methodologies for RE group decisions based on expert interviews.</p> <p>Resulting Data: User Feedback on usability, acceptance of E-Participation Platforms from surveys and interviews. If existing platforms are used, we check and ensure that the data is treated according to the OpenReq policies.</p>
Task 4.3 Design Group Decision Support approach	<p>Usability Studies (see above) related to the usability of the different user interfaces for group decision support. Empirical studies related to the impact of group decision support functionalities (for example: evaluating the quality of decision outcomes,</p>



	<p>user satisfaction, satisfaction with the group recommendation and corresponding decision, etc.)</p> <p>Resulting Data: Anonymous user feedback on usability questionnaires such as SUS. Information about software-engineering groups, their properties and performance in anonymized fashion including feedback on the mentioned aspects such as satisfaction with the recommendation etc.</p>
<p>Task 4.4 Consensus & decision quality in group decision making</p>	<p>Usability Studies (see above) related to the usability of different user interfaces and visualization concepts for achieving consensus and increasing the decision quality (for example: in terms of increasing information exchange between group members / stakeholders, etc.). Empirical studies with anonymous user communities related to the impact of different aggregation heuristics and explanations on aspects such as user satisfaction, prediction quality and decision quality.</p> <p>Resulting Data: Anonymous user feedback on usability questionnaires on user interfaces and visualization concepts. Information about software-engineering groups, their properties and performance in anonymized fashion including information about the predictive quality of proposed aggregation heuristics.</p>
<p>Task 4.5 Recommendation of stakeholders & scheduling of tasks</p>	<p>Empirical studies on the impact of different group configuration strategies on group performance conducted within the scope of software-engineering courses at TU Graz. Social network analysis of networks provided by OpenReq trial partners (in anonymized fashion). Evaluation of the prediction quality of the recommendation algorithms focusing on the identification of relevant stakeholders.</p> <p>Resulting Data: Information about stakeholders and project team membership in anonymized fashion.</p>



Task 4.6 Integration & refinement of group decision support infrastructure	Usability Studies (see above) on different prototype versions of OpenReq services. Resulting Data: Anonymous user feedback on usability questionnaires such as SUS.
--	---

OpenReq data used in OpenReq knowledge base

Scientific publications representing outcomes of the mentioned user studies and beyond are stored in the OpenReq knowledge base and are publicly accessible.

The accessibility of deliverables (related to WP4) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal.

WP 5 Knowledge and Dependency Management

The following table describes user studies and related data collected for analysis purposes which are used to develop the OpenReq platforms and algorithms and publish corresponding research results. It also includes references to OpenReq trial partners and a short description of trial partner data used in order to achieve the goals of WP5. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.

WP5 results created by UH are used in other WPs' user studies that are described in the respective WPs.

Planned studies & resulting data

WP Task	Study description
Usability Studies	UH's WP5 work does not include any direct studies with users or otherwise interaction with users. Constructive research work in which exemplary data will be utilized.
Task 5.1. Design approach for requirements knowledge and patterns	UH will perform empirical studies regarding the industrial state of the practice for representation of requirements and their management. See also T1.2. Resulting Data: Anonymous description of the industrial state of the practice in



	<p>requirements. The data will include a technical approach, architecture and algorithms for knowledge representation and dependency management components.</p>
<p>Task 5.2. Design approach for automated dependency management</p>	<p>UH will perform empirical studies regarding state of the art and practice for management and representation of requirements. See also T1.2.</p> <p>Resulting Data: Anonymous state of the art description of the requirements, technical approach, algorithms, and architecture of the knowledge representation and dependency management components.</p>
<p>Task 5.3. Dependency extraction from text based requirements</p>	<p>The task is based on data provided by other tasks and manages the same data. In addition, existing requirements data from trial partner's requirements management systems is utilized but no user or personal data is included. In addition, an evaluation of the quality of the dependency extraction algorithms will be carried out.</p> <p>Resulting Data: Information about requirements dependencies, and the performance of the algorithms in anonymized fashion.</p>
<p>Task 5.4. Development of OpenReq ontologies and patterns</p>	<p>No user studies and data collection are planned in this context. The ontologies and patterns are partially based on and generalized from T1.2 and trial data of WP7 about application domain. No personal data is included in ontologies and patterns.</p>
<p>Task 5.5. Dependency management, conflict detection and resolution</p>	<p>There are no direct studies with users. Trials apply tools provided by Task 5.5. to manage dependencies and conflicts. This may include processing data of related, identifiable stakeholders. No sensitive personal information is involved. See WP7 for data management of the trials.</p> <p>Resulting Data:</p> <p>Analyses including identification of potentially relevant stakeholders related to</p>



	issues within trials. See WP7.
Task 5.6. Integration and refinement of requirements knowledge and dependency components	Technical testing of integration is carried out but the components do not include directly any user interaction or personal data.

OpenReq data used in OpenReq knowledge base

Scientific publications representing outcomes of the mentioned user studies and beyond are stored in the OpenReq knowledge base and are publicly accessible.

The accessibility of deliverables (related to WP5) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal.

WP 6 OpenReq Interfaces

The following table describes user studies and related data collected for analysis purposes which are used to develop the OpenReq platforms and algorithms and publish corresponding research results. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.

Planned studies & resulting data

WP Task	Study description
Task 6.1 Design OpenReq user interface approach	Evaluation of the OpenReq User Interfaces by means of Usability Studies. These studies will be conducted with students at TU Graz, User-Communities of the trial partners and within the scope of questionnaires and prototype evaluations and supported by anonymous communities and micro worker platforms. Resulting Data: Anonymous user feedback on usability questionnaires such as SUS.
Task 6.2 Continuous integration	No user studies and data collection are planned in this context.



Task 6.3 Development of the OpenReq integrated version and API	No user studies and data collection are planned in this context.
Task 6.4 Integration of OpenReq in issue trackers & collaboration tools	No user studies and data collection are planned in this context.
Task 6.5 OpenReq cloud platform and services	No user studies and data collection are planned in this context.
Task 6.6 Integration of OpenReq in requirements tools	No user studies and data collection are planned in this context (usability studies are covered in Task 7.3).
Task 6.7 Open-Call technical supervision	No user studies and data collection are planned in this context.

OpenReq data used in OpenReq knowledge base

Scientific publications representing outcomes of the mentioned user studies and beyond are stored in the OpenReq knowledge base and are publicly accessible.

The accessibility of deliverables (related to WP6) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal.

Running prototypes hosted in Engineering premises and potentially containing data from knowledge base will not be publicly available. All such data will be hosted only in Engineering data center located in Europe, and will not be accessible from outside, unless otherwise agreed with the consortium.

All data stored in the Virtual Machine used to host OpenREQ cloud services will be protected by Engineering corporate firewalls and will be backed up with daily incremental backups and monthly full backups.

WP 7 Trials & Evaluation

The following table describes user studies and related data collected for analysis purposes which are used to evaluate the OpenReq platforms and algorithms and publish corresponding research results. It includes references to OpenReq trial partners and a short description of trial partner data. The usage of this data for the purposes of documenting OpenReq results in the OpenReq knowledge base is described thereafter.



Planned studies & resulting data

WP Task	Study description
Task 7.1 Continuous planning of trials & evaluations	No user studies and data collection are planned in this context.
Task 7.2 Cross-Platform OSS trial: as-is analysis and execution	<p>During the evaluation of the OpenReq services, data from the publicly available issue trackers of the company will be collected, analyzed and stored.</p> <p>Usability studies with Qt employees will involve anonymous surveys and questionnaires.</p>
Task 7.3 Transportation trial: as-is analysis and execution	<p>During evaluation of OpenReq services, the results of user sessions at Siemens sites will be collected in anonymized tables and metrics. Usability studies with Siemens employees will involve anonymous questionnaires.</p> <p>Resulting Data: Anonymous expert decisions during work sessions and anonymous user feedback on usability questionnaires.</p>
Task 7.4 Telecom trial: as-is analysis, execution, and evaluation	Usability studies with WindTre employees will involve anonymous questionnaires.
Task 7.5 Open-Call results evaluation	<p>The participants in the OpenCall will use the OpenReq platform and its connectors. Moreover, they will be the subjects of surveys and interviews for the purpose of evaluation.</p> <p>This data will serve the purpose of measuring the accuracy and usefulness of the recommendations given by the OpenReq platform.</p> <p>The OpenReq sub-contractors which will be involved with the open-call are diverse-from single or small teams (e.g., in the case of hackathons) to companies and OSS communities. The different needs for collecting and storing data from these</p>



	<p>segments will be taken into account.</p> <p>Resulting Data: Information about the usage of the OpenReq platforms and connectors.</p> <p>Feedback from surveys and interviews.</p>
Task 7.6 User Studies	See WP2-6 for details
Task 7.7 Summative evaluation of OpenReq platform	No user studies and data collection are planned in this context (just a summary of tasks 7.2 - 7.5).

OpenReq data used in OpenReq knowledge base

Scientific publications representing outcomes of the mentioned user studies and beyond are stored in the OpenReq knowledge base and are publicly accessible.

The accessibility of deliverables (related to WP4) will follow the policy defined in the OpenReq proposal.

Technical reports will be publicly accessible except that partners define a different policy (which is the exception of the rule).

Source Code will be made publicly accessible always taking into account the policy defined in the OpenReq proposal.

WP 8 Communication, Dissemination & Exploitation

WP8 does not include any studies with users or otherwise interaction with users.

WP 9 Project and Quality Management

WP9 does not include any studies with users or otherwise interaction with users.



4. Conclusion

This document described how data is managed in the OpenReq project. We want to point out once more that OpenReq is not managing utterly sensible data and all partners and WPs have individually committed to put in place data protection measures as described in the document. If the development of the project requires it, this deliverable will be updated.