TRUSTS Trusted Secure Data Sharing Space

D1.5 Technical & Quality Assurance & Risk Assessment Plan

Document Summary Information

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Table of Contents

List of Figures

List of Tables

Glossary of terms and abbreviations used

Abbreviation / Term	Description
CA	Consortium Agreement
CO	Coordinator
DoA	Description of Action
EB	Executive Board
EC	European Commission
EU	European Union
GA	Grant Agreement
IPR	Intellectual property rights
PC	Project Consortium
PM	Project Management
PMB	Project Management Board
PO	Project Officer
SAB	Stakeholder Advisory Board
WP	Work Package

1 Executive Summary

This deliverable presents the plan for technical and quality assurance, and risk assessment for the TRUSTS H2020 project. The plan will incorporate details on the quality assurance processes adopted within TRUSTS. It will define all processes and instruments to be used for the regular quality monitoring and risk assessment in the form of a handbook. It aims to outline rules, mechanisms and processes that are established in order to maintain a certain quality level in the whole project structure and its outcomes. Another focus is laid on how to identify and monitor potential project risks as well as on describing steps and actions needed to set up and implement appropriate contingency plans.

In doing so, the main goal of this deliverable is to provide guidance to all partners with regard to questions of management and quality control as well as to facilitate their cooperation within the project. It aims to depict efficient ways of collaboration between management team, Work Package (WP) leaders, Scientific lead, Technical lead, Innovation lead, Security lead, Legal & Ethical lead, Communication & Community lead, Business & Exploitation lead necessary for the successful implementation of the instruments and techniques described in the following sections. It will support partners through clear and concise quality and risk management procedures to achieve their specific missions and tasks. In conjunction with D1.1 Project Management Plan, this guide serves as a core reference for the consortium's organisation and delivery of the day to day work throughout the project and will be updated, if it is required.

The interrelated quality processes – planning, assurance and control – have impact on the project work from its start to its end.

- Quality Planning refers to quality policies like meeting, deliverable or publication policies, the definition of responsibilities as well as the creation of a project visual identity including a project logo, project-like designed templates etc. In order to communicate adequately within the project as well as to project external persons, several tools, such as project policies including meetings, deliverables and the publication process of scientific papers, are established and explained in this document.
- Quality Assurance involves the establishment of Interim Management Reports, clear responsibilities and regular, clearly guided telephone conferences. A well-defined internal review process further supports the Quality Assurance of deliverables.
- Quality Control focuses on feedback through internal processes (internal review process) and external advices (Advisory Board). It further monitors how feedback is implemented and assures the project outcomes through proactive risk management

The plan is effective throughout the lifetime of the project, but is open to revision if necessary. Responsibilities for quality planning, assurance and control are shared between all partners, which allow various views on quality issues in order to reach the optimal outcome.

In the following sections the deliverable comprises an overview of guidelines for quality planning and control. These directives are drafted by defining criteria, methods and responsibilities of those involved. Tasks addressed cover, for instance, the preparation and review of a deliverable, the management of a problem, the request for change or the decision making within the project. The final section will specifically deal with the work of risk management and outline processes and procedures that the project, for instance, adopts to handle unforeseen changes such as amendments.

[Risk]

2 Introduction

This deliverable focuses on outlining the quality management approach and procedure for the TRUSTS project. In this context, information is shared in terms of Quality Planning, Responsibilities and Quality Assurance and Control. The deliverable focuses on the implementation of quality actions and decisions as well as the change control, while mentioning the collaboration infrastructure, also detailed in D1.1. Information is also included as per templates, quality methods with respect to milestones and deliverables, including the management of the WPs, the technical leadership and the dissemination and exploitation of the project. With regards to risk management, D9.5 outlines the risk management process and methodology to be used in TRUSTS. It further includes input on identified risks at the proposal stage and risk impact assessment due to the COVID-19 outbreak.

2.1 Mapping Projects' Outputs

Purpose of this section is to map TRUSTS Grand Agreement commitments in terms of technical and quality assurance and risk management, both within the formal Deliverable and Task description, against the project's respective outputs and work performed.

Table 1: Adherence to TRUSTS GA Deliverable & Tasks Descriptions

<table>
<tr><th colspan="2">Technical & Quality Assurance and Risk Management Task</th><th>Respective Document Chapter(s)</th><th>Justification</th></tr>
<tr><td>T1.2 – Technical & Quality Assurance and Risk Management</td><td>The task focuses on defining and specifying the appropriate mechanisms and processes that will be established in order to maintain high quality. Additionally, T1.2 deals with the identification of potential project management risks and the respective monitoring of each risk profile as well as with the definition and timely application of contingency plans. LUH will organize the activities in this task, with input from the WP leaders, focusing on the preparation of periodical risk reports, the identification of challenges, the suggestion of remedial actions and the implementation of any corrective measures, when necessary.</td><td>Section 3 - Section 6</td><td>Section 3: Quality Management Strategy
Section 4: Quality Methods
Section 5: Procedures of the Project Management Board
Section 6: Risk Management</td></tr>
<tr><th colspan="4">Technical & Quality Assurance & Risk Assessment Plan Deliverable</th></tr>
<tr><td colspan="4">D1.5 Technical & Quality Assurance & Risk Assessment Plan: The plan will incorporate details on the quality assurance processes adopted within TRUSTS. It will define all processes and instruments to be used for the regular quality monitoring and risk assessment in the form of a handbook.</td></tr>
</table>

2.2 Deliverable Overview and Report Structure

The structure for this deliverable is the following. Section 3 starts with a quality management strategy describing quality planning, responsibilities, quality assurance and control. Section 4 provides an overview of the quality methods milestones, deliverables, work packages, dissemination & exploitation and benchmarking platform. Section 5 describes the procedures of the Project Management Board. Section 6 outlines the Risk Management in TRUSTS, which includes the risk management process, the identified risks at the proposal stage and the procedure for risk impact assessment because of COVID-19. Finally, section 7 contains the conclusions of this report.

3 Quality Management Strategy

Quality is the degree to which the project results fulfil the project's requirements. In order to fulfil and exceed the project requirements, a Quality Management Strategy has been defined within the TRUSTS project through three key processes, namely Quality Planning, Quality Assurance and Quality Control. These three processes are connected and interact in order to guarantee efficient and high-quality work. Quality management planning determines quality policies and procedures relevant to the project for both project deliverables and project processes, defines who is responsible for what, and documents compliance with certain guidelines.

3.1 Quality Planning

Quality Planning aims to define the outcomes targeted within the project as well as about outlining criteria, assessment methods and partners' responsibilities to ensure a high-level quality of the project results. It aims to enable agreement and a common understanding among the consortium members on the quality expectations and the tools and means by which to achieve and assess the quality defined for the varied project results. Moreover, it serves the management in communicating and controlling the standards laid down for the purpose of quality assurance within the framework of the whole duration and implementation of the project

3.2 Quality Responsibilities

Effective coordination, communication and collaboration are central for the successful implementation of the project. The general structures set up for these areas of activity are detailed in D1.1 Project Management Plan and while everyone in the consortium is responsible to deliver high-quality project results, there are various project roles along with a specific quality assurance responsibility. As the consortium's ultimate decision-making body, the Project Management Board (PMB) is also responsible for the overall assessment of the project's progress and consequently for defining a set of expectations, criteria and means that help to verify the progress of work, the quality of results and their correspondence with the overall project objectives and time scheduling. The Coordinator's team oversees the quality management on a day-to-day basis.
This process includes the following tasks:

- To ensure that project results meet the quality expectations and acceptance criteria defined within the consortium in such a way that they (e.g. deliverables) can be submitted to the European Commission (EC)

- To ensure that WP leaders, Scientific lead, Technical lead, Innovation lead, Security lead, Legal & Ethical lead, Communication & Community lead, Business & Exploitation lead implement quality control measures;

- To ensure internal consensus about and compliance with the rules and principles that are established for the purpose of quality assurance;

- To ensure that rules and mechanism for problem management and conflict resolution are applied in case of potential disputes.

A number of specific roles assigned in the TRUSTS project on a more operational level also adopt responsibility in the project's quality management. In guiding and supporting partners in their community-building efforts, the Communication Lead is responsible for the efficient and successful outreach of TRUSTS in all the relevant communities. This task involves mainly the supervision of dissemination activities as well as requirements elicitation processes so as to make sure that the goals and targets set within this project area are achieved and also met in a timely and effective fashion.
The Technical, Scientific, Innovation and Security Leads are responsible for the scientific, innovation, security and technical vision and direction of the project and for the monitoring of progress in these areas, including with respect to the development and integration of the innovative technology in the deployed services.
The Legal & Ethical Lead ensures that legal and ethical aspects are considered and the Business & Exploitation Lead is responsible for building a sustainable business model for TRUSTS.
Consisting of all WP leaders, the Executive Board (EB) contributes to the project's quality management by ensuring that all activities are executed in accordance with the Description of Action (DoA). If needed, the EB takes appropriate actions to adjust the activities of a WP or task and reports proposed changes to the PB and CO.
It is in particular the task of each WP leader to coordinate the work in their WP. Based on an appropriate work plan initially defined by the WP leaders, they monitor the work and progress of partners involved making sure that tasks are completed in a timely manner. They also identify and manage deviations from schedule and other problems that may affect other tasks and initiate, possibly with the PB and CO, corrective actions. In this respect, they ensure an accurate and effective project implementation to meet targeted outcomes and objectives. They also provide assessment of achievements such as milestones and deliverables and ensure that project results meet the expected quality. Following the reporting strategy adopted in the project, they give feedback to the PB and CO about the development and progress of work on a regular basis, advise on known or potential problems that require management action and propose changes in future plans.

3.3 Quality Assurance and Control

The focus of quality assurance is on the creation and monitoring of processes. Quality assurance creates and monitors project processes, which need to be performed effectively to reach the targeted outcome. This

involves the establishment of Interim Management Reports, clear responsibilities and regular, clearly guided telephone conferences and face-to-face meetings.
The aspect of quality is managed on two levels in the project. Quality assurance comprises techniques and practices that help monitor the progress of the project and ensure quality in the processes by which results are achieved. That is, this task involves looking at how outputs were achieved and evaluating activities that drive the project implementation. In practice, the focus will be on monitoring milestones and targets that largely reflect the requirements of the DoA in the following project areas:

- Effective project management
- Adoption of standards
- Code quality (e.g. continuous integration)
- Dissemination and outreach activities (e.g. engagement level of target audiences, website and social media channels)
- Sustainability and exploitation network (esp. potential users of project outcomes, potential members of the TRUSTS Association
- Deliverables (peer-review)
- Milestones

By contrast, quality control circumscribes techniques and practices that serve to evaluate the different output types of the project (e.g. content, technical/software, evaluation/validation, dissemination/valorisation, scientific publications). This task means to determine whether the project's achievements fulfil the quality requirements and represent ultimately success or failure pertaining to contractual targets. Thus, it is simultaneously also about identifying ways to eliminate causes of unsatisfactory performance. Depending on the type of project result, quality control may additionally assess project results by aspects such as innovation (has anything genuinely new been developed?) and impact (e.g. number of systems benchmarked using the TRUSTS platform, increase in performance over the project's lifetime). The focus of quality control is on feedback and deviation management in the project. Quality control ensures that feedback: it is taken into account from internal as well as from external advisors and therefore positively influences the work towards project objectives. Risk Management is an integral element of quality control as the proactive notice of deviations from the DoA allows the consortium to control the consequences or even transform those consequences to opportunities.

3.3.1 Actions and Decisions

Actions present specific directives and instructions for individual project members or project teams to implement the project successfully and on time. They result from plans, agreements and decisions made during meetings, telcos or via email and correspond to important deadlines described in the DoA. Meeting minutes will generally contain a list of new and ongoing actions with the following data:

- WP/task (i.e. number and possibly title)
- Responsible person (i.e. personal and beneficiary's name)
- Description of action (i.e. what is to do)
- Deadline for action (i.e. when is it expected to be done)

Decisions are official statements that are taken and approved at the PMB level. They may involve adjustments in terms of work plan, schedule, budget and responsibilities and can be of the following type:

- Accept
- Accept with comments and special conditions
- Reject
- Defer (not approved, but left for consideration later)

Decisions are documented in meeting minutes and communicated via email including the following references:

- WP/task (i.e. number and title)
- Responsible person (i.e. personal and beneficiary's name)
- Description of decision
- Voting details

Decisions are regarded as implemented when the issue has been solved and corrective action has been taken.

3.3.2 Change Control

This process is a relevant part of the project management to ensure an adequate administration and controlling of change proposed during the project. It describes how to request, review and approve change before implementation. Change control involves the following steps:

- Request change
- Evaluate impact
- Make a decision
- Implement change
- Close change

Two aspects related to changes will be clearly documented during the project. Changes requested and decisions made are recorded, while details of each change are also documented. Any participant in the TRUSTS project may suggest a change to the project by providing a description of the change and a justification. The CO will ensure that it is documented and recorded as required as well as proactively managed. Initially, the need for change will be examined and its overall effect on the project be evaluated. That is a recommendation of whether a change should eventually be carried out or not will be based on the assessment of the following aspects:

- Quantifiable cost savings and benefits
- Legal, regulatory or other unquantifiable reason for change
- Estimated cost of the change
- Impact on timescales
- Extra resources needed
- Impact on other project activities
- New risks and issues

This assessment is made by the most appropriate member of the Project Team in close collaboration with the project manager (and when fitting the CO). Based on their conclusions, an approved authority will consider the change request and make a decision. Authorities may differ according to the type of change to be deal with:

- Minor changes within scope can be approved by the CO.

- Changes affecting the deadline of a deliverable or other project results need to be reviewed by the CO and the PMB who will confirm the necessary revisions to get the project back on course.
- Changes of scope and contract revisions will require the approval of the EC.

If the change is approved, it is planned, scheduled and executed as agreed with the relevant project members. A post-implementation review is foreseen for changes with major impact on the project. Once implemented, the person who proposed the change checks and agrees on its implementation, and it is marked as closed in the project records by the project manager.

3.3.3 Collaboration Infrastructure

In order to easily share, coordinate and collaboratively work on project-related activities (e.g. WP tasks, deliverables, reports, data sets, source codes, agendas and meeting minutes as well as guidelines) and following the respective unanimous decision of all Consortium Partners, the TRUSTS consortium mainly uses a Google Drive (e.g. for document files, presentations, videos, dissemination material, etc.), google calendar for all project related activities (telcos, webinars etc.), internal SAP and ERP system of LUH (for the management of financial items and allocation of payments to the consortium), GitHub[1] repository (for the monitoring of the technical implementation), Google Cloud[2] (a cloud - based environment for the infrastructure set-up and technical operations; tools are provided to ensure data security with backup, monitoring and encryption also available). Google services are also used in some instances when primarily dealing with non-confidential documents and information. The project's Google Event Calendar TRUSTS allows the coordination and common scheduling of project activities (e.g. internal conference calls, reports, deliverables, workshops etc.). A general mailing list (trusts@googlegroups.com) is set up by the Coordinator and project manager and it is regularly updated in order to ensure that all persons actively involved in TRUSTS receive emails from this mailing list. The general mailing list is used primarily for WP1 project management items and important updates from the Coordinator that affect all the partners. At the same time, the consortium partners can use this ml in order to share updates, news and collect feedback from the whole consortium. The Coordinator has encouraged all WPLs to set up WP-specific mailing lists which can be used continuously to address TRUSTS-relevant topics and activities within the consortium as well as within individual groups dedicated to different fields of project work. It is recommended to start the subject of project emails with the project acronym TRUSTS to allow recipients to filter emails by using their email client facilities. Another recommendation is to mind the difference between addressees and cc-ed recipients. Addressees are directly concerned and should respond within the next two business days whereas the message is merely informative for those listed in Cc.

The Google infrastructure offers many advantages for project collaboration. However, it should be noted that the use of the Google infrastructure can also involve risks. An advantage and at the same time a disadvantage of Google Drive is the direct integration into the Google network. Thus, Google Drive is directly integrated into Gmail. This is practical for the simple processing of email attachments. But if there is a security problem with one´s Gmail account, all files in Google Drive may be affected.

If Google has server problems or a hack deletes data, access to the own documents will not be able.

Overall, it is safe to assume that no cloud storage is truly completely secure. It's therefore recommended to store data again on a physical medium, such as an external hard drive and not to store sensitive data.

[1] Cf. https://github.com/
[2] Cf. https://cloud.google.com/

3.3.4 Templates

Among the various formats in which project work is implemented in the TRUSTS project, there are three distinct document types that are provided for the following purposes:

- Documents for the EC, including deliverables, periodic reports, explanation of the use of resources and financial statements.
- PowerPoint presentations for internal and external use, e.g., for project meetings, reviews, presentations during workshops, exhibitions, conferences etc.
- Web-based documents for internal use: e.g. agendas, minutes, other contributions etc.

Templates for deliverables have been created in Word. These and other documents for the EC are made available via the project's shared google drive repository. Front covers and initial pages will contain essential project information as well as document-specific details. The following pieces of content will be included:

- Project title, project acronym, Grant Agreement (GA) number, program and type of action as well as European Union (EU) emblem and project logo (in accordance with Art. 29.4). This information is for referential purpose as well as to acknowledge the receipt of funding from the EC.

- **Dissemination level**
  This field indicates whether the document is for public use (i.e. fully open) or of confidential kind (i.e. restricted under conditions set out in the Model Grant Agreement to, for instance, consortium members, Project Officer (PO) and project reviewers) or is marked as CO (i.e. confidential, information as referred to in Commission Decision 2001/844/EC).

- **Due date and actual date of submission**
  This field shows contractual deadlines and real completion dates.

- **WP/task number**
  This information of the relevant WP/task is for referential purpose only.

- **Nature of foreground**
  This field indicates the type of result produced in the project and comprises examples such as report, demonstrator, pilot, prototype, websites, press & media actions, and software.

- **Approval status**
  This field is to confirm the final status of the document at issue, indicating its acceptance by the person responsible for approval.

- **Version**
  In this field the version of the document is indicated in a numerical fashion, while the verbal reference 'final' should be used for the submitted version.

- **Number of Pages**

This information is to ensure completeness in all digital formats.

- **Filename**
  A recommended format is to start with the project acronym and GA number in brackets which should be followed by a short content description (e.g. deliverable title) and the correct version number. This form would look as follows: TRUSTS(871481)_ContentDescription_v0.1

- **History**
  This table will report version, date, modification reason, as well as name and organisation affiliation of responsible persons that have performed the respective modification. Versioning will be kept as follows:

  - Version integers are kept for document submission to the Agency. The first submission of a document to the Agency will be marked as v. 1.0. If a second submission is needed, this will be v. 2.0 etc.

  - Version decimals (i.e. releases) will be used for communication between partners. The first draft version to be communicated within the Consortium will be v. X.1, the second v. X.2 etc.

- **List of authors**
  This table displays names, organisation affiliation and emails of all persons responsible for the document as well as making contributions to it.

Documents will generally contain the following sections:

- **Executive Summary**
  This section is usually up to two pages long and presents a condensed version of the document. This outlines the objectives and scope of the document as well as the methodology and main results in a concise and brief manner.

The subsequent main body of the document contains the following parts:

- **Introduction**
  This section states the purpose and goals of the document at issue. It must extend upon and be consistent with the executive summary as well as briefly outline the structure of the subsequent document at the end.

- **Core Content**
  This section forms the core part of the document. It explores the subject of the document in detail, also providing valid reasons and justifications. If an evaluation is given, (1) the measures used must be explained, (2) the data sets must be presented, (3) explanations must be given, where required.

- **References**
  This section comprises a list of material which has been used as a source for writing the document. References are added either at the end of each document or at the end of the relevant section.

- **Annexes**
  These sections may contain collection of supplementary material (e.g. list of tables, figures)

Finally, in order to ensure consistency and quality of documents produced by the TRUSTS consortium, attention will be paid to the following criteria:

- Headers and footers will be formatted according to template guidelines.
- Fonts, paragraphs, bullets, numbered lists etc. will be formatted in the predetermined styles.
- Captions to all tables and figures will be used.
- References should be presented in a unified way.

3.3.5 Stakeholder Advisory Board (SAB)

The consortium will be supported and advised by an external Stakeholder Advisory Board (SAB), consisting of selected European organisations not directly involved in the project as partners. Their valuable feedback to the technical process of the project brings many benefits for the TRUSTS project. The SAB members will provide an external unprejudiced view advising on strategic directions of the project in terms of detailed technical goals and impact, comment on economic feasibility and achieved or missed targets, as well as exploitation and sustainability, which further enhancing the visibility of the project by participating in communication and dissemination activities.

To attain high quality results within the TRUSTS project, a strong cooperation with the SAB members will actively be pursued and facilitated by frequent interaction in the form of regular conference calls and feedback rounds. Selected Stakeholder Advisory Board members share the interest to guide, support and provide feedback to the TRUSTS consortium with advice and expertise throughout the project duration. Through the integration of the Stakeholder Advisory Board, interim feedback of enormous importance regarding the overall orientation of the project outcome is expected. This supports the path towards objectives and controls the quality of the project work as well as the quality of expected outcomes.

The Coordinator will chair the SAB sessions with the participation of the PMB leads and deputies as well as the Leads of the project. The methodology addressing the collaboration with the SAB members is detailed in the GA and CA of the project. The Coordinator is leading this process by actively engaging the consortium partners. This process and progress of the SAB will be further reported in the WP1 deliverables entitled Annual Public Report I, II and III (D1.2, D1.3 and D1.4), due in M12, M24 and M36.

3.3.6 Plan for reporting quality control and quality assurance problems

Based on Partners' Status Reports, the further step to be undertaken is to identify the areas of non-conformity with the defined procedures. If non-conformities are identified, they should be documented in the appropriate form, and corrective actions to be applied. Any Partner identifying the necessity for corrective actions shall report to the Coordinator and inform the PMB accordingly by requesting the Coordinator to schedule a PMB telco and by adding this input to the agenda of the PMB telco. The PMB shall discuss the matter, either at

regular or extraordinary PMB meeting or through e-mails, web-conferences, etc. Proposals on corrective actions should be suggested and put for voting by PMB members. Decisions shall be documented in the Minutes of the PMB Meeting and the Coordinator will forward decisions to all Partners involved. The PMB as higher ranked management structure of the Project is responsible for the implementation of corrective actions. Corrective actions should ensure:

- Effective handling of all complaints
- Reports of non-conformities
- Investigation of the cause of non-conformities with reference to quality system,
- Recording the results of the investigation
- Determining the corrective / preventing actions intended to eliminate the causes of the non-conformity
- Application of controls to ensure that corrective actions are taken and effective
- That information on actions taken are submitted to the Partners

4 Quality Methods

Quality control is responsibility of everybody involved in the each project activity. The quality control task performed by the Coordinator at project level will not substitute for internal quality control used in the various partner organisations for their internal work. All partner organisations should ensure that their existing internal quality control procedures are applied to TRUSTS project tasks. However, as part of their role, the Project Coordinator, the Consortium Project Manager, the Leads (Scientific, Technical, Innovation, Security, Legal & Ethical, Communication & Community, Business & Exploitation) will collaborate with the PMB and AB and will act as Project Quality Assurance Team.

4.1 Milestones

To determine when and where key quality reviews need to take place, the project plan identifies five major key milestones with relevant dependencies between work packages as listed in the following table.

Table 2: List of Milestones

Milestone No	Milestone Title	WP involved	Due Date (Month)	Means of Verification
MS 1	Project setup	WP1, WP2, WP7, WP8, WP9	6	Project Management Plan, Quality Assurance &, Risk Assessment Plan, Coordination & Planning, 1st Definition and analysis of the EU and worldwide data market trends and industrial needs for growth; 1st industry specific requirements and 1st draft of the business validation of use case results. 1st Report on innovation impact assurance actions. Project Website & Promotional Materials. Dissemination & Awareness Plan

MS 2	End of first period	WP1, WP2, WP3, WP6, WP7, WP8, WP9	18	1st Annual Public Report, Architecture design and technical specifications document. Data Marketplaces Interoperability Solutions, Initial Platform Status Report; Legal and Ethical Requirements v1. 2nd Report on innovation impact assurance actions. 1st Report on Dissemination Activities.
MS 3	First Pilot Deployment	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	16	Final Industry specific requirements analysis, definition of the vertical E2E data marketplace functionality and use cases definition; Final Methodologies for the technological/business validation of use case results; Data Governance, TRUSTS Knowledge Graph; Initial Profiles and Brokerage; Algorithms for Privacy-Preserving Data Analytics; 1st Pilot planning and operational management reports, Research Ethics Report; Sustainable business model for TRUSTS data marketplace, Communities engagement strategy; Report on viable, feasible and sustainable business models for TRUSTS platform; Business plan and Implementation action plan, 3rd Report on Innovation Impact Assurance Actions; Concept for Training and capacity building programme
MS 4	End of second period	WP1, WP2, WP3, WP5, WP7, WP8, WP9	36	2nd Annual Public Report, 2nd Architecture design & technical specifications document, incl. Data Marketplaces Interoperability Solutions, 2nd Version of the platform. Field trials reports. 4th Report on innovation impact assurance actions, 2nd annual dissemination report, Report on standardization activities
MS 5	Project Completion	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	36	3rd Public Annual Report, Final Platform release, including Smart Contracts implementation and Profiles and Brokerage, 3rd use case specific Instances, Report on the implementation of deep learning algorithms on distributed frameworks, Final Use case Deployment, Final Use Case Evaluation. Performance evaluation and lessons learned, 3rd Annual Dissemination Report. Final Business plan and Implementation action plan.

4.2 Deliverables

Deliverables are important project results that are delivered to the EC. They are created throughout the project to provide the required project output and impact. To ensure quality of Deliverables, an internal review process has been defined. The main goal of this process is to establish internal feedback by partners who did not directly participate as editor to the Deliverable before submitting it to the European Commission. An overview of Deliverables and Reviewers in TRUSTS and the Production and Review Process of Deliverables are shown and explained in the following chapters 4.2.1 and 4.2.2.

4.2.1 Overview of Deliverables and Reviewers in TRUSTS

In the TRUSTS project in total 70 deliverables are scheduled. 37 of these are due between M1-M18 and 33 deliverables are due between M19-36. The assignments of deliverable author(s) and reviewer(s) are determined well in advance for at least an entire project year. Table 3 presents the expected deliverables and the partners which are responsible for reviewing the corresponding deliverable.

Table 3: Deliverables and Reviewers

Deliver-able No	Deliverable Title	WP No	Lead beneficiary	Type	Dissemination Level	Due Date (month)	1st Reviewer	2nd Reviewer
D1.1	Project Management Plan	WP1	LUH	Report	Confidential, only for members of the consortium (including the Commission Services)	3	RSA	FhG
D1.2	Annual Public Report I	WP 1	LUH	Report	Public	12	DIO	FhG
D1.3	Annual Public Report II	WP 1	LUH	Report	Public	24	DIO	FhG
D1.4	Annual Public Report III	WP 1	LUH	Report	Public	36	DIO	FhG
D1.5	Technical & Quality Assurance & Risk Assessment Plan	WP 1	LUH	Report	Public	6	EBOS	FNET
D1.6	Data Management Plan	WP 1	LUH	ORDP: Open Research Data Pilot	Confidential, only for members of the consortium (including the Commission Services)	6	FNET	DIO
D2.1	Definition and analysis of the EU and worldwide data market trends and industrial needs for growth	WP2	IDSA	Report	Public	18	LUH	FNET
D2.2	Industry specific requirements analysis, definition of the	WP2	FNET	Report	Public	6	IDSA	RSA

	vertical E2E data marketplace functionality and use cases definition I							
D2.3	Industry specific requirements analysis, definition of the vertical E2E data marketplace functionality and use cases definition II	WP2	FNET	Report	Public	24	IDSA	RSA
D2.4	Methodologies for the technological/business validation of use case results I	WP 2	EBOS	Report	Public	6	FNET	LST
D2.5	Methodologies for the technological/business validation of use case results II	WP 2	EBOS	Report	Public	24	FNET	LST
D2.6	Architecture design and technical specifications document I	WP 2	FhG	Report	Public	12	SWC	G1
D2.7	Architecture design and technical specifications document II	WP 2	FhG	Report	Public	24	SWC	G1
D3.1	TRUSTS Infra-structure I	WP3	LST	Report	Public	3	FhG	LUH
D3.2	TRUSTS Infra-structure II	WP3	LST	Report	Public	12	FhG	IDSA
D3.3	Smart Contracts	WP3	FhG	Report	Public	36	KNOW	SWC
D3.4	Data Marketplaces with Inter-operability Solution I	WP 3	RSA	Report	Public	12	FhG	KNOW
D3.5	Data Marketplaces with Inter-operability Solution II	WP 3	RSA	Report	Public	24	FhG	KNOW

D3.6	Data Marketplaces with Inter-operability Solution III	WP 3	RSA	Report	Public	30	FhG	KNOW
D3.7	Data Governance, TRUSTS Knowledge Graph I	WP 3	SWC	Report	Public	18	RSA	FhG
D3.8	Data Governance, TRUSTS Knowledge Graph II	WP 3	SWC	Report	Public	30	RSA	FhG
D3.9	Platform Status Report I	WP 3	FhG	Report	Public	12	LST	EBOS
D3.10	Platform Status Report II	WP 3	FhG	Report	Public	24	LST	EBOS
D3.11	Platform Status Report III	WP 3	FhG	Report	Public	36	LST	EBOS
D3.12	Profiles and Brokerage I	WP 3	KNOW	Demons trator	Public	18	SWC	REL
D3.13	Profiles and Brokerage II	WP 3	KNOW	Demons trator	Public	36	SWC	REL
D4.1	Algorithms for Privacy-Preserving Data Analytics	WP 4	KNOW	Other	Confidential, only for members of the consortium (including the Commission Services)	18	EMC	RSA
D4.2	Report on the im-plementation of deep learning algorithms on distributed frameworks	WP 4	EMC	Report	Public	30	KNOW	RSA
D5.1	Pilot planning and operational management reports I	WP 5	EBOS	Report	Public	14	FNET	SWC
D5.2	Pilot planning and operational management reports II	WP 5	EBOS	Report	Public	25	FNET	SWC

D5.3	Pilot planning and operational management reports III	WP 5	EBOS	Report	Public	33	FNET	SWC
D5.4	Actual field trials of use case 1. v.1	WP 5	EBOS	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	24	REL	PB
D5.5	Actual field trials of use case 1. v.2	WP 5	EBOS	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	32	REL	PB
D5.6	Actual field trials of use case 2. v.1	WP 5	FNET	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	24	FORTH	LUH
D5.7	Actual field trials of use case 2. v.2	WP 5	FNET	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	32	FORTH	LUH
D5.8	Actual field trials of use case 3. v.1	WP 5	REL	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	24	LST	SWC

D5.9	Actual field trials of use case 3. v.2	WP 5	REL	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	32	LST	SWC
D5.10	Performance evaluation and lessons learned report I	WP 5	FNET	Report	Public	24	EBOS	EMC
D5.11	Performance evaluation and lessons learned report II	WP 5	FNET	Report	Public	34	EBOS	EMC
D6.1	Research Ethics	WP 6	KUL	Report	Public	14	SWC	LUH
D6.2	Legal and Ethical Require-ments	WP 6	KUL	Report	Public	10	G1	LUH
D6.3	Legal and Ethical Assessment	WP 6	KUL	Report	Public	33	TUD	LUH
D6.4	Legal and Policy Recommendations	WP 6	KUL	Report	Public	36	KNOW	LUH
D7.1	Sustainable business model for TRUSTS data marketplace I	WP 7	TUD	Report	Public	18	G1	LUH
D7.2	Sustainable business model for TRUSTS data marketplace II	WP 7	TUD	Report	Public	36	G1	LUH
D7.3	Communities engagement strategy	WP 7	IDSA	Report	Public	18	DIO	SWC
D7.4	Report on viable, feasible and sustainable business models for TRUSTS platform I	WP 7	G1	Report	Public	18	TUD	IDSA
D7.5	Report on viable, feasible and sustainable business models	WP 7	G1	Report	Public	36	TUD	IDSA

	for TRUSTS platform II							
D7.6	Report on standardization activities	WP 7	IDSA	Report	Public	36	DIO	LUH
D7.7	Business plan and Im-plementation action plan I	WP 7	LST	Report	Public	18	G1	LUH
D7.8	Business plan and Im-plementation action plan II	WP 7	LST	Report	Public	30	G1	LUH
D7.9	Innovation Impact Assurance I	WP 7	G1	Report	Public	18	TUD	FNET
D7.10	Innovation Impact Assurance II	WP 7	G1	Report	Public	36	TUD	FNET
D8.1	Dis-semination and com-munication Strategy, design guide, materials and com-munication channels	WP 8	DIO	Report	Public	3	REL	LUH
D8.2	Website update, materials	WP 8	DIO	Website s, patents filling, etc.	Public	6	REL	LUH
D8.3	Annual Dis-semination Report I	WP 8	DIO	Report	Public	12	SWC	LUH
D8.4	Annual Dis-semination Report II	WP 8	DIO	Report	Public	24	SWC	LUH
D8.5	Final Dis-semination Report	WP 8	DIO	Report	Public	36	REL	LUH
D8.6	Concept for training and capacity building programme	WP 8	REL	Report	Public	18	RSA	DIO
D8.7	Accom-plished training and	WP 8	REL	Report	Public	36	RSA	DIO

	capacity building programme							
D9.1	H - Requirement No. 3	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	FNET
D9.2	POPD - Requirement No. 4	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	EBOS
D9.3	POPD - Requirement No. 5	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	SWC
D9.4	POPD - Requirement No. 7	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	LST
D9.5	POPD - Requirement No. 10	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	KNOW

D9.6	POPD - Requirement No. 12	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	RSA
D9.7	POPD - Requirement No. 13	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	EMC
D9.8	POPD - Requirement No. 14	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	9	KUL	G1
D9.9	OEI - Requirement No. 15	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	12	KUL	DIO
D9.10	POPD - Requirement No. 16	WP 9	LUH	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6	KUL	EBOS

4.2.2 Production and Review of Deliverables

The project deliverables will be created through a similar process. The following figure presents the phases and timeframes for the timely and effective production of deliverables:

Figure 1: Deliverable Production Process

After production of deliverables they have to be assessed for completeness and fitness. Each project deliverable is assigned to one leading responsible partner. This partner takes the responsibility that the deliverable is of high quality and timely delivered. The responsible partner assures that the content of a deliverable is consistent with the team-workings of the deliverable and that the particular objectives related to the goals of the project are met. Any issues related to deliverables, endangering the success of the work package or the project, have to be reported by the WP leader immediately to the Project Management and discussed within the Coordination team.

A quality assessment may happen through an evaluation/test (if results are objective and quantifiable) as well as a review using the internal review checklist (see Table 4 and Annex of D1.1 Project Management Plan). Both are conducted in a systematic and documented fashion. A review marks the completion and approval of a deliverable. Evaluations or tests may complement a review by providing objective means to assess the results presented in the deliverable (e.g. unit tests). A clearly structured review process has been defined by the consortium. This process is based on minimal rules which are implemented in cooperation between the main author(s), WP leader and CO.

A Review Process involving each partner and selected reviewers is adopted in the Consortium to ensure the quality of deliverables of all types (report, demonstrator, ethics or other) and of any other external publication with regard to the technical content, the objectives of the project and to adhere to formal requirements established in the Grant and Consortium Agreements. Review process ensures that publications and deliverables comply with IPR of the partners. For external publications as well as for project deliverables, the review process will involve all Consortium partners and requires the approval of the Project Quality Assurance Team. Each deliverable will have at least one reviewer who is designated by the main author(s) in agreement with the WP leader and CO. One can, of course, choose more reviewers if one thinks it suitable. The peer reviewer(s) should be chosen from an organisation other than the one(s) responsible for the deliverable. The Quality Manager should not be included in the peer reviewers, since it is the partner that already checks the deliverable. One of the Peer reviewers should be the WP leader, since this partner should have a better understanding of the tasks and deliverables under the WP that he/she is leading.

The following template, serving as quality checklist, is provided by the Coordinator in order to facilitate the reviewers of the deliverables, while enhancing consistency and efficiency**.**

Table 4: Template Internal Review

Internal Review

Mark with X the corresponding column:

Y= yes	**N= no**	**NA = not applicable**

Name of reviewer: XXX
Organisation: XXX
Date: XXX

ELEMENT TO REVIEW	**Y**	**N**	**NA**	**Comments**	**Author**
FORMAT: Does the document …?					
…include editors, deliverable name, version number, dissemination level, date, and status?					
… contain a license (in case of public deliverables)?					
… include the names of contributors and reviewers?					
… contain a version table?					
… contain an updated table of contents?					
… contain a list of figures?					
… contain a list of tables?					
… contain a list of terms and abbreviations?					
… contain an Executive Summary?					
… contain a Conclusions section?					
… contain a List of References (Bibliography) in the appropriate format?					
… use the fonts and sections defined in the official template?					
… use correct spelling and grammar?					
… conform to guidelines regarding Annexes (inclusion of complementary information)					
… present consistency along the whole document in terms of English quality/style? (to avoid accidental usage of copy & paste text)					
About the content…					
Is the deliverable content correctly written?					
Is the overall style of the deliverable correctly organized and presented in a logical order?					
Is the Executive Summary self-contained, following the guidelines and does it include					

the main conclusions of the document?					
Is the body of the deliverable (technique, methodology results, discussion) well enough explained?					
Are the contents of the document treated with the required depth?					
Does the document need additional sections to be considered complete?					
Are there any sections in the document that should be removed?					
Are all references in the document included in the references section?					
Have you noticed any text in the document not well referenced? (copy and paste of text/picture without including the reference in the reference list)					
TECHNICAL RESEARCH WPs (WP2-WP4)					
Is the deliverable sufficiently innovative?					
Does the document present technical soundness and its methods are correctly explained?					
What do you think is the strongest aspect of the deliverable?					
What do you think is the weakest aspect of the deliverable?					
Please perform a brief evaluation and/or validation of the results, if applicable.					
PLATFORM DEMONSTRATION (WP5)					
Does the document present technical soundness and the validation methods are correctly explained?					
What do you think is the strongest aspect of the deliverable?					
What do you think is the weakest aspect of the deliverable?					
Please perform a brief evaluation and/or validation of the results, if applicable.					
DISSEMINATION AND EXPLOITATION WPs (WP7 & WP8)					
Does the document present a consistent outreach and exploitation strategy?					
Are the methods and means correctly explained?					
What do you think is the strongest aspect of the deliverable?					
What do you think is the weakest aspect of the deliverable?					
Please perform a brief evaluation and/or validation of the results, if applicable.					

SUGGESTED IMPROVEMENTS

PAGE	SECTION	SUGGESTED IMPROVEMENT

CONCLUSION

Mark with X the corresponding line.

	Document accepted; no changes required.
	Document accepted; changes required.
	Document not accepted; it must be reviewed after changes are implemented.

Please rank this document globally on a scale of 1-5.
(1-Poor; 2–Fair; 3–Average; 4–Good; 5–Excellent)
Using a half point scale.
Mark with X the corresponding grade.

Document grade	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**	**5**

Project documentation will be reviewed against the following criteria regarding form as well as content of the document:

1. Format of the document according to the document templates.
2. Identification and correction of typing mistakes, etc.
3. Check of consistency:
    a. with the overall scope of the document (e.g. it contains the right information, avoiding unnecessary information, etc.)
    b. with previous relevant documentation (e.g. technical specifications vs requirements definition, no redundancy with other documents, etc.).

Technical aspects of the documentation will be reviewed also by the Technical Lead in order to ensure that the document meets the technical goals of the project, and that all technical information is advancing the current state of the art and the recent technological research level.
The WP leader will evaluate the final draft of each deliverable in terms of content and quality, while the CO will additionally perform a final editing of language and style before the deliverable is submitted to the EC. Table 5 provides a list of indicators that reviewers, WP leader and CO will use to assess the quality of each deliverable. Based on this list, the reviewer(s) will prepare their comments and circulate them to the authors and partners involved including the WP leader and CO. This process will be repeated until the deliverable's quality is considered satisfactory. When all comments have been addressed and integrated, the final version will be officially approved by the WP leader and sent to the CO with a request for submission.

Table 5: Deliverables Quality Indicators

Quality Indicators	Reference
Deliverables´ results are fully compliant with the Grant Agreement	TRUSTS DoA
Deliverables´ results are compatible and contribute to the project objectives	TRUSTS DoA
Deliverables fully document relevant work carried out in the corresponding WP/task	TRUSTS DoA, project meetings
Templates are used as provided by the CO and as outlined within D1.1 Project Management Plan	TRUSTS DoA, D1.1
Deliverables are clear and readable	Editing in terms of content, language, formal structure and presentation of contents
Deliverables are complete	Checking for missing parts, non-existent references, topics not covered and unclear arguments
Deliverables are useful for the target reader	TRUSTS DoA, Project Dissemination Plan
Deliverables are submitted on time, without any delays	TRUSTS DoA
Version history is clear and well-documented	Version numbers are explicitly mentioned in the document

The production and review process can be summarized as follows.

- The partner responsible for preparing the deliverable, drafts a Table of Contents (ToC), assigns tasks to all involved partners and sets the respective deadlines (considering also time needed for quality review).
- Involved partners provide their feedback within the deadlines and the responsible partner prepares the first draft of the document.
- This draft is sent to the relevant consortium for comments and improvements/additions. Feedback is sent directly to the responsible partner who revises the document and prepares the semi-final version.
- The Quality Control Process begins based on the semi-final version of the deliverable. At least two Internal Reviewers have been assigned in advance (refer to the reviewers table).
- The Internal Reviewers send their comments to the partner responsible for the deliverable that consolidates, checks the reports and sends them to the partner responsible.
- The partner responsible for preparing the deliverable then improves the document based on received comments. In case the comments/suggestions cannot be realised, the reasons for this must be documented. If necessary (i.e. if there are too many comments on the first round), another round of comments from the Internal Reviewers takes place.

- The partner responsible addresses them appropriately and prepares a final PDF version of the document, which is sent to the Project Coordinator and the Consortium Project Manager (at least one week before the final deadline).
- The Project Coordinator and the Consortium Project Manager then submit the deliverable to the EC, the latest by the indicate deadline and, unless it is of confidential nature, makes the deliverable publicly available on the project's website.

In terms of issue reporting and escalation procedure, the Coordinator's team updates timely the consortium as per the upcoming deliverables one year in advance. During the monthly Executive Board telcos, which are chaired and led by the Coordinator, all WP and task leaders report to the TRUSTS consortium the progress per WP, task and deliverable. This process enables the quick identification of potential delays and the solutions oriented decision making, with the objective to ensure the timely submission of high quality deliverables. Moreover the Coordinator and her team follow up regularly via direct emails with the partners leading and participating in each deliverable, with the objective to evaluate the progress, as well as propose and implement corrective measures if necessary (e.g. guidance, advice, mediation, other adjustments with regard to effort etc.).

4.3 Work Packages

The WP leader is in charge of making sure that project work is carried out according to schedule and targeted outcomes are achieved within the given timeframes. WP progress is evaluated on the basis of the quality indicators listed in Table 6. In addition, this quality assurance and control allows to discover delays and errors as early in the project lifecycle as possible. As soon as any risk is identified, the WP leader will define a mitigation strategy as outlined in Section 5.

Table 6: Work Package Quality Indicators

Quality Indicators	**Reference**
The WP and task activities correspond to what is planned and outlined in the DoA	TRUSTS DoA
Development is consistent with results of requirements elicitations	Requirements specifications
The WP and task activities are based on a work plan	TRUSTS DoA, WP work plan
Progress is regularly documented	Monitoring reports (Periodic Reports, Annual Public Reports), internal reports (general and WP-specific telcos and minutes, etc.), deliverables
Architecture is available	Internal documents, deliverables

If necessary, a realistic risk assessment and recovery plan are provided	Internal documents

4.4 Dissemination and Exploitation

Disseminating and exploiting project results is an important process to make the project known and outcomes available to the project's stakeholder and a wider audience. It can drive the take-up and sustainability of the project's outputs in the long run. Dissemination activities are generally overseen by the Dissemination and Community Building Lead who can also be consulted on how to disseminate project results successfully, while exploitation is guided by the Business & Exploitation Lead. Part of the basic form required for the purpose of dissemination and exploitation is the appropriate placement of logos and a clear textual reference to the project's funding. Unless otherwise agreed with the EC or unless it is impossible, any dissemination and exploitation of project results must display the EU emblem and contain the following text in accordance with Art. 29.4: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871481." In addition, the project logo should be visibly included. Information for further guidance can be found in the project's dissemination plan.

In terms of Exploitation of the project's results, at an initial stage the process pertaining to intellectual property rights (IPR) was unanimously agreed upon at the CA. Each Party shall implement its tasks in accordance with the Consortium Plan and shall bear sole responsibility for ensuring that its acts within the Project do not knowingly infringe third party property rights. The intended introduction of Intellectual Property (including, but not limited to Software) under Controlled License Terms in the Project requires the approval of the Project Management Board to implement such introduction into the Consortium Plan. Moreover WP7 on Business Models, Exploitation and Innovation Impact Assurance will further analyse along with all exploitation and business angles, the IPR topic in the dedicated task T7.3 Intellectual Property and Data Stewardship. The update and sustainability of the project's output is further ensured within the context of WP7 with tasks (T7.1-T7.6) and deliverables (D7.1-D7.6) focusing on reporting research on the topic of exploitation, e.g. on sustainable business models, commercialisation initiatives, action plans and innovation impact assurance.

4.5 Benchmarking Platform

The Benchmarking Platform is the core technical result of the TRUSTS project and central for the achievement of the project goals (e.g., development of benchmarks, challenges). It will be evaluated according to the international standards for software development and products as set down in [1]. This document prescribes a set of characteristics for quality assessment as shown in Table 7.

Table 7: Technology Quality Indicators

Quality Indicators	Reference
Functional Suitability	The capability of the software product to provide functions that meet stated and implied needs when the software is used under specified conditions
Performance	The capability of the software product to provide appropriate performance,

Efficiency	relative to the amount of resources used, under stated conditions
Compatibility	The capability of the software product to have two or more of its systems or components exchange information and/or perform their required functions interact with one of more specified systems while sharing the same hardware or software environment
Usability	The capability of the software product to be understood and used by specific users to achieve specific goals with effectiveness, efficiency and satisfaction in a specific context of use
Reliability	The capability of the software product to maintain a specified level of performance when used under specified conditions for a specified time
Security	The capability of the software product to protect information and data so that unauthorised persons or systems cannot read or modify them and authorised persons or systems are not denied access to them
Maintainability	The capability of the software product to be modified. Modifications may include corrections, improvements or adaptation of the software to changes in environment, and in requirements and functional specifications
Portability	The capability of the software product to be transferred from one hardware, software, or other operational or usage environment to another

5 Procedures of the Project Management Board (PMB)

The Project Management Board (PMB) is the Project body which shall ensure the quality and the effectiveness of the implementation of the Project. It is composed by representatives of all the partners. The PMB shall satisfy itself about the effectiveness and quality of the implementation of the Project, in accordance with the following:

- it shall consider any problem incurred during the implementation of the Project and take decisions on how to solve these problems;
- it shall consider and approve the activities/project changes proposed by the Partners during the Project implementation period;
- it shall periodically review progress made by the Project, based on documents submitted by Lead Beneficiaries Partner;
- it shall examine the results of implementation, particularly achievement of the targets set for each Project WP and the overall Project indicators;
- it shall consider and approve Project Status Reports on Project implementation;
- it shall be informed of any relevant comments made by the H2020 Programme Management Authority (EU Project Officer);
- it shall be responsible for programming the common Project events in coordination with the Communication Lead;

- it may propose any revision or examination of the Project to make possible to hit the targets or to improve Project management, including financial aspects;
- it approves major changes requested for the implementation of the Project by each Project Partner;
- it approves and implement the Risks assessment developed by each Partner in the periodical Status Reports;

The Project Executive Board will be chaired by a representative of the Coordinator, and co-chaired by the representative of the Project Partner hosting the meeting. At the end of the meeting minutes of the decisions taken are prepared by the Coordinator, the Consortium Project Manager with contributions of the participating partners and are circulated among the PMB members and all Consortium Partners. The Coordinator can initiate a written decision-making process. In this case the Coordinator shall send the draft decision to the members of the PMB and shall fix a deadline for comments and approval. Any assessment and/or decision of the Executive Board shall be free from bias and must not be influenced by personal interest of any of the individual members.

6 Risk Management

To guarantee the achievement of the objectives of the TRUSTS project, it is essential to identify and understand the significant project risks. The continuous risk management process is based on the early identification of, and the fast reaction to, events that can negatively affect the outcome of the project. The frequent meetings of the project bodies therefore serve as the main forum for risk identification. The identified risks are then analysed and graded, based on impact and probability of occurrence. Technical risks are analysed and graded, based on their probability of occurrence in order to answer the governing question: “How big is the risk and what its impact is?” Knowing how a risk impacts the project is important as several risks of the same type can be an indication of a larger problem.

The risks defined in the DoA are graded into low/medium/high risk levels (low as in low probability of occurrence and low impact, medium as in low/ high probability of occurrence and high/low impact and high as in high probability of occurrence and high impact.

The risks will be monitored on a regular basis and an updated risk table will be provided within the Periodic Reports, including a detailed classification and evaluation in the yearly annual public reports of the project due in M12, M24, M36. The Risk Assessment Plan will show how potential risks are assessed and mitigated in order to avoid any negative influence on the TRUSTS project objectives.

In addition to the above-mentioned tools and procedures, the project partners’ and the coordinator’s profound experience with H2020 projects implicates a high level of competence, expert knowledge, skills and qualifications, which further increases the quality of the project work. Furthermore, besides these hard skills, also soft skills, such as motivation, team spirit, and interpersonal interaction contribute to high quality project performance.

6.1 Risk management process and methodology

This part of the project management deals with identifying, evaluating and eliminating or minimizing potential risks that may jeopardize the success of the project. While the consortium has initially described relevant project risks and how to address them in the DoA, risk management will be conducted throughout the project. It is a continuous process in which known risks will be regularly reviewed and new risks will need to be

recognized so as to handle and control them adequately. Their assessment will lead to the formulation of appropriate mitigation measures that should help to prevent and overcome a risk or reduce its effects to an acceptable level. The process behind risk management can be broken down as follows:

1. Risk identification (i.e. recognize and describe risks)
2. Risk analysis (i.e. analyse likelihood and consequences of risks)
3. Risk assessment (i.e. determine magnitude/acceptability of risks for the project)
4. Risk response planning (i.e. create and execute action plan to prevent or minimize risks)
5. Risk control (i.e. monitor, track and review risks and mitigation actions)

In general, the approach and implementation of risk management is overseen by the Project Consortium (PC) in collaboration with the CO and project management. Risk management is specifically carried out on both the strategic and operational project levels to ensure that risks identified with the project are handled adequately. At the strategic level, risk management focuses on the WPs' contribution to the project objectives which is the responsibility of the PMB. At the operational level risk management focuses on the activities within WPs, which is the responsibility of each WP leader. The following basic risk factors may apply to any level of the TRUSTS project:

- Complexity, i.e. activities may be too complex to be realized
- Scope, i.e. number of activities may be too large for partners to realize and/or manage at once
- Capacity, i.e. one or more partners may not be able to complete their tasks without other partners being able to take over.
- Reliability, i.e. project methods and strategies applied could be inappropriate to realize the intended outcomes
- Validity, i.e. outcomes may not reflect the real needs and priorities of the stakeholders
- Sustainability, i.e. project outcomes may not lead to a sustainable outcome

These factors will be detailed further in terms of: identified and quantified risks; contingency action per identified risk; monitoring mechanism; quantified threshold level; and line of action when threshold is overstepped. Mitigation measures developed by the team members involved will need to reflect the risk policy that the PMB and PC are responsible for and will be decided upon, as shown in Table 8.

Risk monitoring is a core component of the PM WP1. As such this item is discussed among all Consortium partners during each one the monthly Executive Board telcos, during which all WP and task leaders showcase the progress, discussion items and next steps of their respective WPs and tasks. Furthermore risk monitoring is a constant topic in the agenda of all PMB meetings. The objective in both rounds (Executive and PMB) consists in timely identifying potential risk areas and timely deciding on solutions for such challenges.

Table 8: Sample Risk Methodology

Risk Factors	Risks	Actions	Decision Makers
Complexity	Activities may be too complex to be realized	Review activities and scale down project ambitions	PMB (in agreement with PO)
Scope	Number of activities may be too large for partners to realize and/or manage at once	Prioritize and scale down ambitions	PMB (in agreement with PO)
Capacity	One or more partners may not be able to complete their tasks without other partners being able to take over	Replace defaulting partners	PMB (in agreement with PO)
Reliability	Project methods and strategies applied could be inappropriate to realize the intended outcomes	Adjust project methods and strategies	WP leader (in agreement with PO)
Validity	Outcomes may not reflect the real needs and priorities of the stakeholders	Adjust project activities and outputs	PMB (in agreement with PO)
Sustainability	Project outcomes may not lead to a sustainable outcome	Adjust project activities and outputs	PMB (in agreement with PO)

Including partners from several countries and with different expertise, the consortium identified a number of management and technical risks prior to the project start. In order to minimize these foreseen risks, the partners have concretized the project as much as possible and have agreed on the global project tasks. Furthermore, an elaborate project management structure has been defined in order to monitor the cooperation between the partners and identify and investigate potential as well as new emerging risks as soon as possible. The list of already known potential risks and corresponding contingency plans can be found in Table 8.

6.2 Identified risks at the proposal stage

The following risks (Table 9) have been identified by the TRUSTS Consortium at the proposal stage. They are regularly monitored by the Coordinator, who will ensure that the appropriate proposed risk-mitigation measures will be timely taken, if necessary.

Table 9: Critical Implementation Risks and Mitigation Actions

Risk No	Description of Risk	WP No	Proposed risk-mitigation Measures
R1	Withdrawal of consortium member from the project	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	Consortium members are all highly committed to the TRUSTS project. In the unlikely event that a partner leaves the project, if possible, the consortium will find a suitable replacement. If this is not possible, the tasks allocated to the dropout, will be re-assigned to the consortium.
R2	Withdrawal/Unavailability of key staff	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	Each consortium member is responsible for the personnel management of its staff. Therefore, the affected consortium member should and will handle the substitution of the participating staff.
R3	Non-compliance with legal and ethical considerations	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	The TRUSTS consortium ensures that legal and ethical compliance will be fully achieved by allocating the appropriate budget and resources to WP6, Legal & Ethical Framework, led by KU Leuven. Compliance with legal and ethical considerations will be applied throughout the project, in all work packages and use cases, and project activities.
R4	Key milestones or deliverables are delayed	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	The management team will monitor all effort during the project, identifying and resolving any miscalculations as early as possible. The various milestone cycles will ensure that the project is on track. In the unlikely event of having delays in finalising key deliverables, the management team together with the EC will adjust the work plan.
R5	Dissemination of the project results is not sufficient to create impact	WP8	Strategy for dissemination is defined with clear responsibilities. All activities will be reviewed regularly during the full project duration. If a review of the dissemination activities establishes that the impact is not sufficient, a choice of remedial measures will be proposed by the WP leader(s) and the Management Board.
R6	Budget underestimated / unmet goals	WP1	The consortium would put any effort required to achieve the objectives. The planning will achieve key results with strong impact even if objectives are not fully met.
R7	Failure to meet user requirements	WP1, WP2, WP3, WP4, WP5, WP6,	To avoid misspecification of software functionalities, TRUSTS will follow an iterative development process

		WP7, WP8, WP9	and involve stakeholders in all stages of the development
R8	Risk of poor data quality	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	The project members are aware of the quality of the raw data and took this into account when preparing the proposal.
R9	Scope creep	WP1	Daily monitoring, planning and regular reporting mechanisms will ensure that the project stays on track and deliver the promised output.
R10	Loss of thematic relevance	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	Communication and objectives adjustment will be accomplished in the project by monitoring thematic-related activities, i.e. other EU-funded projects, national projects and the market and research environment. Furthermore, the end users and dissemination leaders will monitor the research and development process during the project.
R11	Risk of not achieving sufficient scalability	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	Our approach to achieve scalability is based on distributing tasks in a cluster of commodity hardware. Hence, scalability can be simply increased by adding nodes to the cluster. The Coordinator (LUH) has a proven track record on cutting edge research and development.
R12	Risk that use cases datasets are not or may not be provided	WP5	Consortium members are all highly committed to the TRUSTS project and to providing resources for carrying out the use cases. Alpha Bank, InBestMe and other companies listed in the table of the Letters of Support will provide datasets. Internal legal teams will collaborate with the legal and ethical partner of the TRUSTS Consortium to ensure respect for the relevant legal and ethical frameworks.

6.3 Risk Impact Assessment of COVID-19

Upon notification by the EC, the Coordinator (LUH) immediately updates the Consortium via the main, daily communication channel, i.e. the project's general mailing list (trusts@googlegroups.com). A specific folder has been set up by the Coordinator in the PM WP1 folder in the shared repository, where documents can be accessed by all consortium members. In that section information is added regarding the EC guidelines and updated information can be accessed on cost reimbursement, the EC's COVID-19 outbreak FAQs[3] and the Call for experts by the Research Data Alliance on COVID19[4]. For the latter, the Coordinator, as requested,

[3] Cf. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/covid-19

[4] Cf. https://www.rd-alliance.org/groups/rda-covid19

encouraged the partners to further disseminate the Call and to designate experts on the relevant areas. Moreover, the Coordinator prepared a risk register, which will be updated periodically during the project (6.3.3).

6.3.1 EC guidelines and updated information on cost reimbursement due to COVID-19

If you receive inquiries from your projects concerning reimbursement of events or meetings cancelled due to COVID-19, this is the information you need to pass:

- Make a documented attempt (e.g. email, screenshot) to obtain (even partial) refund, referring to force majeure situation due to COVID-19. For example, under EU rules, even for non-refundable flight tickets, you will be able to have the taxes refunded. Some hotels/bookers even allow full exceptional refunding under the current circumstances.
- For the part that cannot be refunded, include the paid charges to the cost claim of the appropriate period of the appropriate project, with the explanation of the circumstances.
- Keep all documents, invoices, receipts and email exchanges in your records.

The EC will consider the non-reimbursable costs under the usual contractual rules of cost eligibility, taking into account the exceptional circumstances created by the epidemic. (Here it is important not to make any promises, because all contractual eligibility rules apply). It has also been suggested by the EC that it would also be a good idea for the persons concerned to verify any possible travel insurances that could be available for you, e.g. credit card linked travel insurances. At the end of the day, these insurance policies may end up covering the total of the costs.

6.3.2 Procedure for Risk Impact Assessment of COVID-19

In the PM WP of the shared repository, the Coordinator added an excel file, with the following subsections:

1. Name & Partner short name
2. WP/ Task or other
3. Describe remaining activities in task affected by corona-virus crisis
4. Describe the impact of the corona-virus on the implementation of the action
5. What is the level of impact: 1) Very low; 2) Low; 3) Medium; 4) High, serious; 5) Very High & very serious
6. Which partners are affected?
7. Expected delay in activities
8. What corrective/ mitigation action is proposed
9. If the impact is currently 1 or 2, is there a risk that the impact will increase, should the situation not change in the next months?

All WP and task leaders, as well as partners have been requested to update the table on a weekly basis. This process aims to enable the proactive identification of potential risks and the quick implementation of remedial actions. The table is discussed at the monthly Executive Board telcos of the Consortium. If the items raised require higher-level action and decision making, they are discussed at the level of the PMB.

6.3.3 Risk Register (Issue log and vacation calendar and register)

Using a risk register adds structure and consistency to the project risk management process by having a readily-available document that targets each individual risk before it happens. Both the Project Management Body of Knowledge (PMBOK) and Prince2 state that a risk register template is a key component of any successful project. Additionally, the risk register allows the project manager to review risks at the end of each phase of a project lifecycle and assess how well each risk was handled or how proposed remedies aided in the controlling of the specific risk. Thus, TRUSTS uses internally a risk register, which is incorporated at the start of a project. This register reflects the structure of an issue management log, detailing:

1. ID
2. Status
    a. *Open*: The issue is currently open but has not yet been addressed.
    b. *Work In Progress*: The issue is being actively worked to develop a resolution.
    c. *Closed*: The issue is no longer considered an active project threat and can be closed with or without resolution.
3. Priority
    a. *Critical*: Issue will stop project progress.
    b. *High*: Issue will likely impact budget, schedule or scope.
    c. *Medium*: Issue impact the project, but could be mitigated to avoid an impact on budget, schedule or scope.
    d. *Low*: Issue is low impact and/or low effort to resolve.
4. (brief) Description of the issue
5. Affected WP(s)
6. Owner (The individual most responsible for working towards resolving the issue.)
7. Estimated resolution date (Estimated or target date for completion of actions.)
8. Escalation needed
    a. "Yes" if the project manager deems that the issue has to be escalated
    b. "No" if escalation is not needed to resolve the issue.
9. Impact (The impact of the issue is described, e.g. in terms of the project constraints[5] of time, cost and scope.)
10. Actions (Proposed actions to mitigate the issue, avoid the issue or resolve the issue.)
11. Date identified (The date that the issue was identified.)
12. Logged by
13. Actual resolution/completion date (Actual completion date.)
14. Final resolution and follow-on actions. (This excel columns documents the final outcome. Is the issue resolved and if so how? Are there any follow-on actions? Are there any follow-on risks?)

The risk register is updated regularly and shared with all project members, serving thus as a useful tool to manage and reduce the risks associated with any given project. It is referred to in all internal presentations and sessions of the PM WP with the participation of the TRUSTS Consortium (e.g. monthly Executive Board telco, PMB telcos, WP1 sessions during the KO and Plenary meetings of the Consortium, which take place every six months). The internal risk register contributes thus to:

- Providing a documentation of risk strategies
- Grading all potential risks
- Ensuring communication with the Consortium and the PMB Board, should risks come into effect
- Identifying mitigation actions required to solve a risk or its impact
- Forecasting and preparing a strategy for inevitable risks

[5] Cf. http://www.stakeholdermap.com/project-management/project-triangle.html

- Flagging unidentified risks through open communication and input from team members
- Instigating actions to reduce probability and potential impact

At the same time, the Coordinator has shared a vacation calendar and register with all Consortium partners. This holiday register can be directly updated and viewed by all project members. The objective is that partners are timely aware of the availability of all project members, deputies rights and roles are timely allocated ensuring that all WPs and tasks are appropriately staffed and represented throughout the duration of the project. This register is also consulted in terms of the preparation of the project's deliverables.

Although risk register templates are extremely useful for project owners as they work to identify risks and combat them, there are some downfalls in preplanning for risks in such a meticulous way. Sometimes, this can lead to ritualistic decision making and give a false illusion of control over situations. However, not all risks can be foreseen, which can lead to a fallacy of concreteness in project plans. Therefore, it is useful to keep an open mind and ideally to identify and solve risks before they arise.

7 Conclusions and Next Actions

D1.5 Technical and Quality Assurance and Risk Assessment Plan focuses on the quality management approach and procedure for the TRUSTS project, addressing aspects of Quality Planning, Responsibilities and Quality Assurance and Control. The interrelated quality processes – planning, assurance and control – impact the project work from its start to its end. The project aims at obtaining a high degree of quality, where outcomes are achieved in terms of the effectiveness and efficiency of working practices, as well as products and standards of project deliverables and outputs. This plan seeks to establish the procedures and standards to be employed in the project, and to allocate responsibility for ensuring that these procedures and standards are followed. D1.5 includes input on the implementation of quality actions and decisions as well as the change control, quality methods with respect to milestones and deliverables, including the management of the WPs, the technical leadership and the dissemination of the project. With regards to risk management, D1.5 outlines the risk management process and methodology to be used in TRUSTS. It further includes input on identified risks at the proposal stage and the risk impact assessment procedure due to the COVID 19 outbreak.

Consequently D1.5 Technical and Quality Assurance and Risk Assessment Plan serves as a guide for the quality and risk management already implemented since the start of the project. The respective task is open and ongoing throughout the duration of the project. When and if appropriate, e.g. in exceptional cases, the Quality Assurance and Risk Assessment Plan outlined in D1.5 will be adapted to serve best the appropriate project management of the project. Furthermore, the lessons learned throughout the project will be used to further refine or adapt the foreseen methodology, aiming thus to guarantee that the project will be managed appropriately and all potential risk items are timely and proactively foreseen and addressed.

The project management team (Coordinator and Leads) monitor that the above-described processes are fulfilled. In case of any deviations to the planned work the management team is in charge of taking necessary mitigation measures. The plan is effective throughout the lifetime of the project, but is open to revision if necessary. Responsibilities for quality planning, assurance and control are shared between all partners, which allow various views on quality issues in order to reach the optimal outcome.