Funded by the Horizon 2020 Framework Programme of the European Union

D8.5

Final report of the most urgent risks and risk plan

PROJECT DOCUMENTATION SHEET	
Project Acronym	Easy Reading
Project Full Title	Easy Reading
Grant Agreement	780529
Call Identifier	H2020-ICT-2016-2017
Topic	ICT-23-2017
Funding Scheme	RIA (Research and Innovation action)
Project Duration	30 months (January 2018 – Juni 2020)
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Website	www.easyreading.eu

DELIVERABLE DOCUMENTATION SHEET	
Number	Deliverable D8.5
Title	Final report of the most urgent risks and risk plan
Related WP	WP8
Related Task	Task 8.3 Privacy, safety, ethics risk management
Lead Beneficiary	VÄSTRA GÖTALANDS LÄNS LANDSTING (DART)
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Nature	Project Deliverable
Dissemination level	Public
Due Date	2019/12/31
Submission date	2019/12/21
Status	Final

QUALITY CONTROL ASSESSMENT SHEET			
Issue	Date	Comment	Author
1	20.12	Quality Assurance Review	Tomas Murillo-Morales

ACKNOWLEDGEMENT

This document is a deliverable of the Easy Reading project, which has received funding from the European Union's Horizon 2020 Programme for Information and Communication Technologies under Grant Agreement (GA) Nb #780529.

Executive Summary

The present document is a deliverable of the Easy Reading project which is funded by the European Union's Horizon 2020 Programme under Grant Agreement #780529.

Deliverable 8.5 is tied to the third task of WP 8 (Ethics, Safety, Privacy, Security – Privacy, safety, ethics risk management). The aim of this deliverable is to perform a final risk assessment with focus on privacy, safety and ethics, to determine risks and potential issues that will need to be handled during the project. It builds upon deliverable 8.3 which was a first report on those issues.

The risk assessment is divided into two main categories, risks related to the technology and risks related to the research carried out with peer researchers and participants. There is also a category for risk concerning exploitation and dissemination. Potential risks and their assessments are scored based on their likelihood to occur and their impact if they occur. The risks are based on the tasks in the various work packages and are closely linked to issues raised in the deliverables D8.2 (Development and enforcement of different manuals about safety, privacy and ethics for using in the project) and D8.4 (Safety, Privacy and Ethical Considerations Document).

Table of contents

1. Introduction

Easy Reading's goal is to develop and design a service with a number of different engines that can enhance a user's way of experiencing the web. Those engines are designed to let the user work with the original content of a website but access it in a way that suits him or her.

To reach the best possible outcome and really ensure that the service corresponds to the intended users' needs, Easy Reading researches best practices together with peer researchers that have own experiences of cognitive impairments. The design of the engines, the interface and the setup process are all designed together with peer researchers to make sure that they are in the center of the development in all phases. The project will also gather views and opinions from several additional participants during the course of the test phases. This means that there will be many people to test the technical solutions and data will be collected in a number of ways.

Ethics is of great importance in all projects where users are involved. In Easy Reading, user involvement is present in all stages. It is also a project where data is not only collected manually by researchers, but where also the technology itself capture information and will use it to draw conclusions and make suggestions and decisions. This data has to be managed in a careful and secure way and take the privacy and security aspects into consideration.

This deliverable is the final version of a risk assessment for the project concerning ethics, privacy and security. It is built upon deliverable 8.3 which was a first version of this assessment. The risk analysis strives to identify risks that can occur, their likelihood and impact and propose solutions if they occur. It is meant to be used by partners as a helpful aid when developing and researching together with our participants.

2. Risk assessment

The risks are assessed with the help of a matrix with two four-graded scales. The vertical scale assesses how likely it is that the risk occurs. The horizontal scale tells us how serious the impact is, if it does occur. The matrix then gives us a score for each combination. Those scores can be labeled in five steps from very low to very high.

Each risk in this deliverable is assessed for likelihood and impact. Its risk score is then calculated and presented in the table. The colors make it easy to quickly assess the level of the risks. Other partners in the consortium has been asked to give input to make sure that the risks are relevant and that the scoring is accurate.

The matrix is pictured below.

		Impact			
		How severe would the impact be if risk event occurred?			
		1 Insignificant	**2 Minor**	**3 Significant**	**4 Major**
Likelihood	**4 Likely**	Medium 4	High 8	Very high 12	Very high 16
What is the chance of the risk occurring?	**3 Moderate**	Low 3	Medium 6	High 9	Very high 12
	2 Unlikely	Very low 2	Low 4	Medium 6	High 8
	1 Rare	Very low 1	Very low 2	Low 3	Medium 4

3. Technology related risks

There are multiple risks involved in a project where technical solutions are developed. Project wise, the risks tied to economy, technical barrier and time frames are many. In this report, however, the focus is on the ethical and safety issues that may arise when the system is used.

This section describes the risks divided into subcategories such as usability, stability and privacy. The risks are based on the various tasks in the project's work packages. Each risk is rated by its likelihood to occur and its impact if it does occur. Each risk also has a proposed solution. For the technical risks, most of the risks are of a prevention nature and are intended to be used during development. The solutions proposed should be implemented to avoid those risks.

There is no limitation to how many different interfaces the Easy Reading framework can hold since it is component based and can host engines from third parties. With regards to this, the risks are intentionally written somewhat generic so that they will be able to apply to several services.

Usability

The goal of Easy Reading is to improve simplicity and flexibility of a webpage. The target group is foremost people with cognitive disabilities. It is therefore crucial that the solutions created in the project and the interfaces for those are easy to use. In this section, risks concerning the interfaces and the design of the system are collected. If any of those risks are encountered during the user testing, our proposed solutions are intended to support the developers' decision-making.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed solution**
Products do not follow universal design sufficiently	2	2	Medium 4	Developers follows Web Content Accessibility Guidelines
Manuals/helps are not easy to read	2	3	Medium 6	Add manual in accessible format (images, easy-to-read text, speech output)
Overlay is not customizable for users	2	3	Medium 6	Make sure there are options for customization such as size, color, orientation, icon selection
Information on screen is not easily understood or meaningful to the user	1	3	Low 3	Enhance information with image, text and speech support
Systems have not enough tolerance for error	2	3	Medium 6	Allow different ways of managing the system and present an easy way to stop or cancel an action
System error messages are not clear	2	3	Medium 6	Improve messages so that they relate to the problem and inform of possible solutions

Systems require too much physical effort	1	3	Low 3	Look over the navigation and design and make sure they are compatible with alternative access methods
Interface components are not large/visible/positioned widely enough	2	3	Medium 6	Make sure users can customize their preferences to re-arrange components' size and position
Systems are not easy enough to learn	1	3	Low 3	Provide accessible information about to use the functions, e.g. "you have to mark the text and click the mouse button to activate the speech"
Tasks in systems require too many steps for the user	1	2	Very low 2	Try to minimize the number of steps required for each task
System is not beneficial enough to make the users actually want to use it	1	4	Medium 4	This depends a lot on the user experience, so the solution is to make sure the system is stable and easy to use
System is not accessible for different access methods	2	3	Low 3	Make sure the system is following accessibility guidelines (WCAG)
System does not provide enough accessible and various output formats (images, text, video)	2	3	Medium 6	Have a wide range of alternative outputs and allow customization
The user's needs are not in the center of the system	1	3	Low 3	Involve peer researchers and test users and iterate solutions according to their opinions
User doesn't have a Google account to login to the service	2	1	Very low 2	Provide other means of login and inform about them, included an anonymous option
Project website is not accessible	1	2	Very low 2	Make sure website follows WCAG guidelines. Provide Easy to read content. Continuously check for accessibility issues.

Stability

A system providing support to users' needs to be both stable in performance and reliable in functionality. Easy Reading consists of several engines and the framework itself contains user profiles and a back-end system for users and carers. It's important to have solutions ready if any of these parts fails in some way. Easy Reading also includes parts that track user behavior and try to draw

conclusions from those observations. That we have solutions in place if observations, and system behavior depending on them, go wrong is also essential.

Risks	Likelihood	Impact	Risk score	Proposed solution
Engines fail or crash often	1	4	Medium 4	Developers have to control the system regularly and fix possible bugs
The reasoning part of the system stores, predicts or assesses participants' needs incorrectly	2	2	Medium 4	It has to be easy to turn off unwanted functionality that is proposed
The profiles created reflect the participant's needs incorrectly or "insensitively"	2	2	Medium 4	It has to be easy to turn off unwanted functionality that is proposed
The back-end system to adapt profiles manually fails to override automatic settings	1	4	Medium 4	Make sure manual settings always have a higher priority than automatic ones
The framework will not be able to convert all kinds of content on a webpage	2	2	Medium 4	Convert only content where we are certain the tool helps
Implemented technology becomes obsolete because of future technical advancements	2	2	Medium 4	Partners follow development closely and react to changes. Framework architecture should be flexible.
Cloud server performance is unstable	1	4	Medium 4	Developers will migrate to a different cloud service that offers the desired stability
Too many users will result in bad cloud server performance	2	4	High 8	Developers can increase the computational power of the cloud server. If this is not enough, then additional instances can be added. However the architecture needs to be adapted to support this.

Transparency

In all systems, algorithms work under the hood and present result to the user who is not aware of the software's reasoning. Getting the information about what is happening and why contributes greatly to the understanding and acceptance of a system. Risks regarding these issues are collected here.

Risks	Likelihood	Impact	Risk score	Proposed solution
System's limitations and weaknesses are not transparent to users	3	2	Medium 6	Provide clear information about what the system can do, how, when and why

System's handling of data is not transparent to users	3	1	Low 3	Provide clear information about what data is collected and why, and let the user consent
Features of the system are not transparent for the user	1	3	Low 3	Provide clear information about what the system can do, how, when and why
Users are excluded from full/true content when a conversion is done (e.g. simplified text, dictionary lookups)	2	3	Medium 6	Tools that transform content must only be used if they are checked carefully that they don't restrict or mislead the user. Purposeful restriction of content must be made carefully and with good reason (e.g. exclude too much noise and enhance the user experience)

Privacy and data collection

In all systems that collect data, there are risks that data is stored and accessed in ways it shouldn't be and these risks need to be addressed. Risks in this section are closely related to the data privacy laws that are regulated in the EU and concern the system as well as other sources where the project may gather information about users. Since the project is concerned with behaviors and user features that have to do with their cognitive levels, it's of utmost importance that this information is treated correctly, stored securely and cannot be traced back to individual users.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed solution**
Unnecessary data was collected by the system	1	1	Very low 1	All data collection and treatment must follow European regulation. If a risk occurs, this will be reported to a data protection officer who will handle this accordingly.
Data is stored for an unnecessarily long time in the system	1	2	Very low 2	
Data is not stored securely enough by the system	1	4	Medium 4	
A third party had access to data without consent	1	4	Medium 4	
Data from tracking and browser history is used inappropriately or not protected	1	4	Medium 4	
Information that can identify users will be stored (single pieces or several together)	1	4	Medium 4	Partners must comply with GDPR and not collect unnecessary data. Much of the data collection will be encrypted and anonymized

Identifiable user details are sent to a third party	1	3	Low 3	Information may be sent to third parties but this information will be anonymized and in no way tied to specific users.
Users can't setup their own profile independently	3	2	Medium 6	Implement a simple setup procedure, or offer default user settings
Database with sensitive data can be hacked	1	4	Medium 4	Database should only accessible from the server, only hashed value of user login should be stored with encryption, investigate possibility to use TDE
Communication between cloud and client can be hacked	1	4	Medium 4	TLS should be used (HTTPS and WSS)
Project website data collection is not clear to visitors	1	2	Very low 2	Website has an information page about data collection as well as a consent popup form. Statistics via Google Analytics don't store any personal information
Collecting data for statistical purposes may reveal data that can identify users	1	4	Medium 4	Statistics should be collected on a group level and user data be anonymized
Collection or capturing of information regarding disability may identify users	2	4	High 8	The information needed may instead be collected as preferences and needs
Storing history of visited website may identify users	1	3	Low 3	Instead of website URLs, capture the information in terms of website complexity or similar measurement, which makes it impossible to track back the original webpage

Autonomy

The Easy Reading services are designed to give users autonomy in performing tasks they may not be able to today, for example reading the content of a website without help. Therefore, we must strive to make the service itself possible to use independently. This section describes risks that may occur if we don't think of this carefully enough.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed solutions**
System cannot be turned on and off at any time	1	2	Very low 2	Make sure the toolbar can be closed and opened easily by the user when the system is

				active - and easy to log out completely
User cannot easily deactivate that the system tracks e.g. web history	1	2	Very low 2	Make sure it is transparent when the system tracks, and make tracking optional
User cannot use system autonomously	2	3	Low 3	Make it easy for carers to assist at a distance

Accessibility

Accessibility, or equality of access, covers several aspects. User may for example not have sufficient physical or cognitive skills, or they might speak a language that is not supported, or they have preferences that are not available. Easy Reading needs to strive towards including everyone that wants to use the services as far as possible. Risks regarding accessibility are listed below.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed solution**
Systems do not include all users	4	2	High 8	Strive to fit as many as possible, such as persons having additional impairments
Insufficient back-end functionality to provide own alternative conversions	2	2	Medium 4	Make sure the system is compatible with as many additional resources as possible
System cannot be afforded by some users	1	3	Low 3	Make sure the system is open source and available freely for end users
Systems are not supported equally for all languages intended	4	3	Very high 12	Try to implement back-end solutions or compensatory functionality for languages with less support. Offer opportunities for third parties to add to the engines in additional languages.

Maintenance

During the project time, the services and the added engines will be in use frequently by developers, researchers and users. Still, updates and development of different web environments and tools might happen which makes it important to be aware of the risks that brings. Even more so, how engines should be maintained after the project time is crucial to think about.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed solution**
Costs for commercial engines will only be covered during the project	2	3	Medium 6	Make sure the business plan and exploitation plan take measures how to fund

				commercial engines after the project has ended
Difficulty to maintain engines so that they always work in the service	1	4	Medium 4	Engines are implemented in the cloud which means they only have to be maintained in one place. Important to allow time and resources to do this long-term.
Compatibility with browsers might fall behind for engines	2	4	High 8	Provide possibility to have multiple versions to guarantee backwards compatibility for engines

4. Project and research related risks

In projects with user involvement, it is crucial that the project management and staff carefully consider ethical issues that may arise. This is particularly true in the Easy Reading project, where not only end-users are concerned. Both peer researchers and test participants will be closely involved in the different project stages, which brings particular reason to be aware of the ethics.

In this section, risks that may arise during the project's various processes are described. Risks are categorized under for example participants' comfort, data collection and stability. Some of the risks apply to all users and others may be more tied to the nature of the peer researchers' or the test participants' tasks. The risks are rated by their likelihood and impact. They also have two kinds of proposed solutions. For one, we suggest preventive solutions that we encourage partners to prepare and think about beforehand. We also list suggestions for the case that the risk does occur and needs to be solved.

Recruitment and information to participants

To successfully develop for the target group, we need to recruit peer researchers and potential end-users to test, evaluate and co-develop the services. When recruiting and informing about the project and what participation entails, there are ethical considerations to be made. Here, we describe risks concerning recruitment and interactions with users before testing.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed prevention**	**Proposed solution**
Information on pilot procedure is not clear to participants	2	1	Very low 2	Strive to be as clear as possible.	Find out what the problem is. Give more time and try to explain and show in another way. Use pictures, videos and demonstrate. Suggest to meet

					again, understanding of procedure may also come over time.
Participant expects different outcomes from pilot procedure	3	1	Low 3	Be clear from the start about the possibilities with participation	Inform the test person about the possibility to withdraw and give the person a opportunity to come another day.
Participants are not sufficiently made aware of how services function or their weaknesses	1	2	Very low 2	Be sure to inform clearly about limitations	Explain that this is a test situation and that the tool is not yet ready. Make sure to tell them that it is absolutely not their fault and that their input is very important for the project
Participants are not sufficiently informed of the Ombudsman or other contact persons and their role	2	3	Medium 6	Make this a task in the routine presentation for participants	If you as a researcher observer or notice that the test person not seems to be content or comfortable, explain about the ombudsman and give contact information
Recruitment process excludes certain users	1	2	Very low 2	Think about this, and make efforts to have all kind of users represented - e.g. persons with different kinds of disability, ethnicity, sex, age	Complete with more test persons if needed.
Recruitment process did not allow room for participant to say no	2	3	Medium 6	Important to be respectful and pay attention to what signals prospective users send and	Inform the test person about the possibility to withdraw or adjust the

				make sure to ask explicitly and give time to think about it	participation to tasks suitable
Difficulty finding a high enough number of relevant participants	3	2	Medium 6	Spread information and recruit at many different venues and find many ways to find participants	Keep recruiting participants even after pilots started if needed

Testing with participants

During the period of testing and evaluation, researchers need take many things in consideration. The interaction with participants is crucial to make their participation meaningful and researchers need to be prepared for different situations that may occur. In this section we have listed risks that may occur during this phase.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed prevention**	**Proposed solution**
Informed consent is not understood by participant	2	4	High 8	Make sure that the consent forms are as accessible as possible. If needed, use pictorial support and/or explain orally.	Make sure that the consent is thoroughly explained in a way that the participant can understand
Participants withdraw from participation mid-testing	1	1	Very low 1	Make sure there are enough participants so that a few withdrawals do not affect the outcome	Explain that the participant has no disadvantage by participating. Try to understand the reason for withdrawal and if it depends on misunderstandings, try to clear them up
Difficulty finding time to test with participants	2	3	Medium 6	Make sure that technology is ready for test early and distributed to pilot sites for preparation in time. Pilot sites	Adapt the way of testing to include as many users as possible within shorter time

				have to make sure to reserv time for the testing.	
Span or setup of testing goes differently than expected	1	1	Very low 1	Prepare for several different test scenarios	Researchers responsible for testing are flexible for changes
Participants cannot use the systems due to lack of suitable tools	1	3	Low 3	Make sure to know in advance any needs for adaptations or alternative access and adapt the test situation accordingly	If this occur during a test session, try to solve the situation and if not possible, offer time for a new test day.
Participants' opinions are not taken into consideration during testing	1	4	Medium 4	Make sure that all the researchers know that it is very important to listen to the test persons' view	Have necessary equipment to document all information
Materials are not presented in an accessible way (e.g. with pictures, easy text)	2	3	Medium 6	Researchers prepare materials beforehand in accessible formats	If this occurs during a test session, try to solve the situation and if not possible, offer time for a new test day and prepare suitable materials
Participants' views and validations are not taken into account in the software development process	2	2	Low 4	Researchers are responsible for conveying all opinions from participants and developers do their best to incorporate them	Developers have to update the tool with functions needed
Peer researchers don't feel equal to the rest of the research team	2	3	Medium 6	Researchers must treat and respect the peer researchers in accordance with IPAR-UCD	Try to find out the problem and how the peer researchers want to be treated. Inform of the role of the Ombudsman.
Peer researchers' opinions are not	1	3	Low 3	Researchers must treat and respect the peer-	If an opinion is not relevant and contradict with the

taken into consideration				researchers in accordance with IPAR-UCD	opinions from the majority, explain and discuss this with the peer researcher in a neutral way
IPAR-UCD methodology does not suit peer researchers	1	2	Very low 2	Researchers must be open to change and adapt the methodology to the user's benefits	Researchers must be open to adapt the methodology
The regulation regarding compensation for participation is not followed by pilot sites	1	1	Very low 2	Researcher are careful to tell peer researchers the conditions for participation before they consent (for example reimbursements of costs)	

Participants' comfort

When testing together with participants and peer researchers, there are a number of situations that can arise and that researchers need to try to be prepared for beforehand. In this section we have listed risks concerning the participants' comfort in the testing situations.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed prevention**	**Proposed solution**
Participants is stressed or frustrated in the test situation	2	3	Medium 6	Researchers are well prepared before the test situation and have considered options to try if something doesn't go as planned	Researchers adapt the test situation, e g. take a pause or try a new task
Participants don't feel valued	1	4	Medium 4	Researchers are well prepared before the test situation and have considered optional ways of posing questions and adapting to the participant	Researchers are attentive to the participants' opinions and mood and are prepared to change the way they interact with the participant

Testing environment cannot be suited to participants' needs	1	2	Very low 2	Researchers responsible for testing are flexible to changes	If this occurs during a test session, try to solve the situation and if not possible, offer time for a new test day and prepare suitable materials
Testing situation intrudes too much on the participants' lives	1	1	Very low 1	Participants must be informed of their rights to revoke their consent	Participants must be informed of their rights to revoke their consent
Participants are not allowed to leave a test situation	1	2	Very low 2	All researchers must be informed about and aware about the participants' rights	Researchers must make sure that no one pressure participants

Privacy and data protection

Risks in this section are closely related to the data privacy laws that are regulated in the EU. In this section we describe risks concerning the data we collect and treat when we recruit, meet and ask for feedback from our participants, rather than data collected from the services. All of this data must be treated according to regulations.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed prevention**	**Proposed solution**
Unnecessary data is collected from participants	2	2	Low 4	Researchers must think through what data is absolutely necessary	Researchers have to delete unnecessary data and if needed take contact with a Data Protection Officer
Participant data is not stored safely	1	4	Medium 4	Pilots sites are responsible for keeping data stored securely in accordance with regulations	Take necessary steps to make it right and take contact with a Data Protection officer in your organization
Participant data is kept too long	2	2	Low 4	Pilots sites are responsible for keeping data stored securely in	Researchers have to delete unnecessary data and if needed take contact with

				accordance with regulations	a Data Protection Officer
Participant data is not deleted when requested	1	4	Medium 4	All participant data needs to be stored in one place, so that it is easy to delete participant data on request	Researchers must comply with such requests immediately
Unauthorized staff has access to participant data	2	4	High 8	Pilots sites are responsible for keeping data stored securely in accordance with regulations	Take necessary steps to make it right and take contact with a Data Protection officer in your organization
Data is collected without permission or consent	1	4	Medium 4	Researchers must make sure that no participant is photographed or filmed without consent, by anyone	Researchers have to delete this data or collect a consent from the participant and if needed take contact with a Data Protection Officer
Data is published without consent	1	4	Medium 4	Researchers must make sure that all data that is published in any format has consent	Researchers have to delete this data or collect a consent from the participant and if needed take contact with a Data Protection Officer
Sensitive data is collected	1	4	Medium 4	Researchers must make sure that this will not be collected in accordance with GDPR regulations, or make sure to have an explicit consent	Researchers have to delete unnecessary data, if needed take contact with a Data Protection Officer
Data is not given to participant when requested	1	4	Medium 4	For pilot sites a person must be responsible for dealing with user requests	The responsible person must comply with such requests immediately

Stability

Just as there are risks on the technology side if the services and engines are not stable enough, it will also impose risks in the testing situation. It is therefore important for developers to test thoroughly beforehand and for researchers to be prepared in case something goes wrong.

Risks	Likelihood	Impact	Risk score	Proposed prevention	Proposed solution
Systems are not tested sufficiently before released to the participants	2	3	Medium 6	Developers must make sure that the systems are ready for testing and researchers must be prepared and know the system well before users test it	If this occurs during a test session, try to solve the situation and if not possible, offer time for a new test day and give feedback to developers
Insufficient access to technical support during testing sessions	2	2	Low 4	Developers must be available for questions when the testings are underway	

Accessibility

The services developed in the project are mainly directed towards people with cognitive disabilities of various kinds. Everyone that has a need for our services are welcome to participate in our testings. However, researchers must take into consideration that cognitive disabilities frequently co-occur with other types of impairments, such as motor impairment or communicative impairments. It's important to think about the risks of excluding those users when recruiting or participating in testing. There are also other grounds for exclusion, such as economic reasons. Below, some of those risks are stated.

Risks	Likelihood	Impact	Risk score	Proposed prevention	Proposed solution
Participation is restricted due to economic reasons	1	3	Low 3	Researchers responsible for testing are flexible and coordinate the process so that it suits the participant. Project partners must offer test persons compensation for expenses	

Participation is restricted due to physical limitations	2	4	High 8	Researchers responsible for testing plan so that premises, material and test procedure are accessible to suit persons with motor, visual and hearing impairments	Researchers responsible for testing are flexible and try to coordinate tests so that it suits the participant
Participation is restricted due to communicative/cognitive limitations	2	4	High 8	Researchers responsible for testing make sure that there are communication aids and cognitive support available. Inform test persons to bring their personal aids	Researchers responsible for testing are flexible and try to coordinate tests so that it suits the participant

Advisory expertise

Easy Reading has an external advisory committee with experts in various fields relevant to the project. This is a huge advantage in the process that could be of tremendous help should a situation arise. However, it is also important that the committee really represents our target group and that's why we have listed a few risks concerning this.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed prevention**	**Proposed solution**
Advisory committee does not fairly represent the target group	1	3	Low 3	The project partners who are responsible for the advisory committee make sure to invite a diverse group	Try to invite additional representatives

Ethical regulations

The project has three pilot sites, Sweden, Germany and Austria. These countries have national regulations and regulations within their organizations regarding ethics and human research they need to comply with. We describe some risks that may occur during the project that each pilot site would have to handle.

Risks	**Likelihood**	**Impact**	**Risk score**	**Proposed prevention**	**Proposed solution**

Pilot sites do not follow their set research and ethics guidelines	1	3	Low 3	The ethical guidelines for the project are sufficient and available	Take contact with the local ethical management
Pilot sites do not have a Data Protection Officer to contact about data processing	1	3	Low 3	Each pilot site make a plan for an alternative contact	Try to find an external contact to discuss with. Ask for advice from other project partners
Pilots sites do not have an Ombudsman	1	3	Low 4	Each pilot site needs to make sure there is an Ombudsman for participants to contact	Try to find an external contact to discuss with. Ask for advice from other project partners
Ombudsman is not suitable for the task	1	3	Low 3	Each pilot site needs to follow the guidelines on the Ombudsman selection in D8.2	Find a new person for this task, or complement with additional expertise

5. Other risks

Apart from the specific risks concerning technology or user involvement, there are also other risks tied to other areas of the project. In this section, we describe risks that concern dissemination and exploitation, two areas that are crucial to make the services live on after the project time. Risks here are closely related to both the technical development and maintenance and the user involvement and therefore have ethical aspects.

The risks are rated by their likelihood and impact and have a proposed preventive solution that project partners will have to think about during the project time to reach maximum potential.

Dissemination

To make the services available and known to as many potential users as possible, a successful dissemination is important. If dissemination is performed in a way that only lets certain groups take part and exclude others that may be in need of the services, it means there has not been equality of access. Below are a few concrete risks regarding this and what partners can do to avoid them.

Risks	Likelihood	Impact	Risk score	Proposed prevention
Dissemination activities don't reach all user groups	2	2	Medium 4	All partners must take responsibility to disseminate and reach out to third parties
Dissemination is performed unevenly between the different countries in the project	2	2	Medium 4	All partners must take responsibility to disseminate and reach out to third parties
Stakeholder groups are not representative of all users	2	2	Medium 4	All partners must take responsibility to reach out to relevant stakeholders and make sure there is diversity

Exploitation

A key point of the project is, of course, that the services and engines developed will live on and be provided long-term after the project's termination. To succeed with this, there are a number of factors to take into consideration. In this section, we describe risks that concern the views and attitudes of third parties and content providers that will ultimately make use of the services, and how we can facilitate for them to embrace it. Some of those risks were brought up already in the project documentation and is incorporated here to emphasize their importance.

Risks	Likelihood	Impact	Risk score	Proposed solution
Difficult for third parties to understand how to configure their engines to the service	1	3	Low 3	Partners prepare a thorough manual with all information needed to facilitate this process
Third party engines cannot comply to the API	1	3	Low 3	Partners should guarantee that the APIs and engines created by market leaders will be identified and checked for compatibility
The project builds on proprietary interfaces and don't use open standards to support long-term compatibility and openness to other vendors outside the project	3	2	Medium 6	Partners must ensure that open standards are used in all possible cases
Nobody takes the overall responsibility for the services after the project's ending	2	3	Medium 6	Partners must prepare for this scenario by anchor the services into existing organizations or form an organization that can maintain the tool long-term

6. Conclusion

Performing a risk analysis is a delicate task. The first decision to make concerns what risks to include. In this report, risks were chosen from the tasks in the work packages and the descriptions of the work in the different deliverables. In a project, there are always a multitude of risks concerning management, finances, technology and resources. In the report, however, we have focused on risks over the various areas that are tied to ethics, safety, privacy and security.

The second decision concerns the assessment of the risks. Judging the likelihood and impact of each risk was made from experience from previous projects on software development and similar user groups. Those assessed scores were then reviewed by the partners responsible for the work packages dealing with the specific risks, a process in which we gained valuable feedback to make the risks more accurate.

A great advantage of using a matrix is the quick and clear overview it gives. It is easy just by a glance to catch the risks with high scores and be made aware of them. The matrix is color-coded to provide visual cues and labelled with both score (e.g. 6) and level of score (e.g. “medium”) to make it easy to access. In this assessment, we can see that the highest risks in the technology sections concern collecting identifiable data, server performance, browser compatibility maintenance and exclusion of certain groups due to inaccessibility and language barriers. For the project related risks, the ones that score high concern understandable information to users, unauthorized access to participant data and limitations due to physical restrictions.

This risk analysis is a solid ground for developers and researchers to use in their work to make sure they are aware of the pitfalls and can prepare for them accordingly. Naturally, to make this a living and relevant document, the analysis may be updated if risks not discovered are revealed during the remaining time of the project.

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