ASSISTANCE

Adapted situation awareneSS tools and taIlored training curricula for increaSing capabiliTie and enhANcing the proteCtion of first respondErs

European Commission

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Deliverable D1.4

Risks & Opportunities Register 2

31/10/2020

ASSISTANCE

Nowadays different first responder (FR) organizations cooperate together to face large and complex disasters that in some cases can be amplified due to new threats such as climate change in case of natural disasters (e.g. larger and more frequent floods and wild fires, etc) or the increase of radicalization in case of man-made disasters (e.g. arsonists that burn European forests, terrorist attacks coordinated across multiple European cities).

The impact of large disasters like these could have disastrous consequences for the European Member States and affect social well-being on a global level. Each type of FR organization (e.g. medical emergency services, fire and rescue services, law enforcement teams, civil protection professionals, etc.) that mitigate these kinds of events are exposed to unexpected dangers and new threats that can severely affect their personal safety.

ASSISTANCE proposes a holistic solution that will adapt a well-tested situation awareness (SA) application as the core of a wider SA platform. The new ASSISTANCE platform can offer different configuration modes for providing the tailored information needed by each FR organization while they work together to mitigate the disaster (e.g. real-time video and resources location for firefighters, evacuation route status for emergency health services and so on).

With this solution ASSISTANCE will enhance the SA of the responding organisations during their mitigation activities through the integration of new paradigms, tools and technologies (e.g. drones/robots equipped with a range of sensors, robust communications capabilities, etc.) with the main objective of increasing both their protection and their efficiency.

ASSISTANCE will also improve the skills and capabilities of the FRs through the establishment of a European advanced training network that will provide tailored training based on new learning approaches (e.g. virtual, mixed and/or augmented reality) adapted to each type of FR organizational need and the possibility of sharing virtual training environments, exchanging experiences and actuation procedures.

Disclaimer

Executive Summary

There are two main components of the risks and opportunities (R&Os) management strategy for the ASSISTANCE project: the Risks and Opportunities Management Policy (ROMP), which describes how risks and opportunities (R&Os) are registered and handled by the ASSISTANCE project management; and the R&Os register, a document in which the identified R&Os are recorded.

The ROMP is described in detail in D1.3, submitted in M6, and there has been no need to change it since that time. Therefore, the focus of this document is on analysing the ongoing R&Os listed in the R&O register. Both the ROMP and the register are posted on the ASSISTANCE file repository so that all project participants can have access to them at any time.

The register is a spreadsheet into which the R&Os are recorded, analysed and tracked. There have been 6 new risks and 8 new opportunities since M6.

This is the second of three R&O deliverables. It includes an analysis of the status of the initial R&Os identified in the proposal phase of the project, together with new R&Os identified before M18. The final R&O deliverable (D1.5, due M30) will include all R&Os identified during the ASSISTANCE project up to M30 and the final ROMP if any changes have been made since M18.

List of Authors

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Change control datasheet

Version	Changes	Chapters	Pages	Date
1	First draft	All	11	07/09/20
2	Internal version updated	All	33	15/09/20
3	Revisions from reviews	All	34	20/10/20
4	Final version	All	35	28/10/20

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Acronyms

ASSISTANCE	Adapted situation awareneSS tools and taIlored training curricula for increaSing capabiliTie and enhANcing the proteCtion of first respondErs
AB	Advisory Board
D#.#	Deliverable number #.# (D1.4 deliverable 4 of work package 1)
DoA	Description of Action of the project
EC	European Commission
EU	European Union
EUAB	End User Advisory Board
GA	Grant Agreement
H2020	Horizon 2020 Programme for Research and Innovation
IPR	Intellectual Property Rights
M#	Month of the project (M1=May 2019)
PC	Project Coordinator
PO	Project Officer
PIC	Project Implementation Committee
PSB	Project Security Board
PSC	Project Steering Committee
R&O	Risks and Opportunities
ROMP	Risks and Opportunities Management Policy
SA	Situational Awareness
TL	Task Leader
WP	Work Package
WPL	Work Package Leader

1. Introduction

There are two main components of the risks and opportunities (R&Os) management strategy for the ASSISTANCE project: the Risks and Opportunities Management Policy (ROMP), which was described in detail in D1.3 and submitted in M6, and the Risk and Opportunity Register. Both documents are posted on the ASSISTANCE file repository so that all project participants can have access to them at any time.

The ROMP describes how risks and opportunities (R&Os) are registered and handled by the ASSISTANCE project management. It provides guidance for all ASSISTANCE participants about how to bring a risk or opportunity to the attention of the appropriate people. It also enables decision-making that will reduce exposure to harmful events (risks) and increase exposure to beneficial events (opportunities). The ROMP provides the framework for a systematic and transparent approach to planning, assessing, and treating R&Os that have the potential to impact the ASSISTANCE project in a negative or positive way.

The ROMP is a living document that can be revised as needed during the project. There have been no revisions to the ROMP since D1.3 was submitted so there is no need to reproduce it again in this document.

The register is a spreadsheet into which the R&Os are recorded, analysed and tracked. There have been 6 new risks and 8 new opportunities since D1.3 was submitted. The focus of this document is to examine the status of all the R&Os listed in the R&O register.

2. Status of ongoing R&Os

There are currently 16 risks and 8 opportunities listed in the R&O register. Most of the risks have remained at the same acceptable level since they were identified. Three of the risks (R12, R13, and R15), associated with bringing and using drones and robots in Turkey, have been resolved. There are two risks with a moderate rating that require continuous attention: R8 is the potential for a misalignment between the end user partners and the development of the technology, for which the action plan calls for increased efforts to connect the end user partners with the technology development partners; and R16 is the military situation in Turkey, which is outside the control of the project management but contingency plans for a different pilot location have been explored. The global COVID-19 pandemic (R9) is a severe risk to the project's ability to conduct the demonstration pilots in 2021 and 2022. This risk will be given considerable attention in the coming months.

Five of the opportunities have been resolved or postponed due to COVID-19 impacts on conferences and workshops. A more detailed discussion of the R&Os is presented in the following subsections.

2.1. Risk analysis

The 16 risks are listed in Table 1. All risks have been assigned ratings, owners and action plans. The former R9 risk was considered to be a duplicate of the R4 risk so it was deleted and a new risk, global pandemic effects, was inserted into the vacant position in the register.

Risk Name	Category	Description	Statement
R1	Manage-ment	Partner performance issues	If partners do not perform their work on time, then delays in dependent work and deliverables/milestones could occur.
R2	Manage-ment	Planning issues	If planning during the project is not adequate or timely, then resources may not be used efficiently, and deliverables/ milestones could be delayed.
R3	Manage-ment	Collaboration issues (conflict resolution)	If the consortium cannot work well together, then the quality of the project outcomes is likely to suffer.
R4	Innovation	Obsolete technology	If the state-of-the-art in FR technology evolves beyond the project technology, then the market for and scientific benefit of project results would not have as much impact as expected.
R5	Innovation	pilot/technology/ FR needs mismatch	If the technological approach chosen for a pilot does not fulfil the needs of the FRs involved, then either the technological approach or the pilot must be modified.
R6	Innovation	Technology development delays	If development delays occur, then evaluation work later in the project could fall off schedule as well.
R7	Innovation	Insufficient resources for technology development	If resources are not sufficient to support technical development activities, then the technology may be unavailable or delayed.
R8	End User	Final results are not as expected by end users	If lack of communication between end users and technical partners happens, then the final project results may not be useful for the end users.
R9	Other	Global pandemic	If the pandemic continues, then some of the project activities could be delayed.
R10	Business	Insufficient exploitation of results	Taking into account that the expected project results will be a fully operating prototype and not a commercial product, if the results of the project are not fully exploited by the partners, then the benefits of the project will not be fully realized.
R11	End User	Lack of female end users	If insufficient data about female FRs is available for the gender dimension analysis then the technical and usability needs of female FRs cannot be fully understood

			and implemented in the ASSISTANCE technology and training systems.
R12	Other	Unable to fly drones in Turkey	If CATEC pilots' licenses are not valid in Turkey due to Turkish legislation, then the Turkish demo could be jeopardized due to lack of pilots for flying the drones during the demonstration.
R13	Other	Drones arrival delay/stoppage due to Turkish customs procedures	If some important devices (e.g. drones) sent to Turkey are stopped in customs, then the Turkish pilot could be jeopardized due to lack of important elements for performing the demonstration.
R14	Security	Unauthorized access to repository	If an unauthorized person, e.g. a person that leaves the project and still has access to the repository through the partner's login, then that person can still get data/information that might be sensitive about the project.
R15	Other	Robots arrival delay/stoppage due to Turkish customs procedures	If some important devices (e.g. robots) sent to Turkey are stopped in the custom, then the Turkish pilot could be jeopardized due to lack of important elements for performing the demonstration.
R16	Other	Turkey increases its military conflict	If Turkey increase its military conflict on the Syrian border (or anywhere that could affect safety during the pilot), then travel to Turkey could be too dangerous.

Table 1: Summary of risk register entries

Viewed from a probability/consequence perspective in Figure 1, most of the risks have been rated as acceptable (in the green zone), while only 3 of the risks are considered threatening to the project (yellow or red zone), although all risks are monitored periodically regardless of their rating. Recall from the ROMP (D1.3) that the scales for consequences and probabilities range from 1 to 5, where 1 is low and 5 is high. Each of the risks will be described in the following subsections, including a risk rating history if a risk has had a change of rating during its lifecycle.
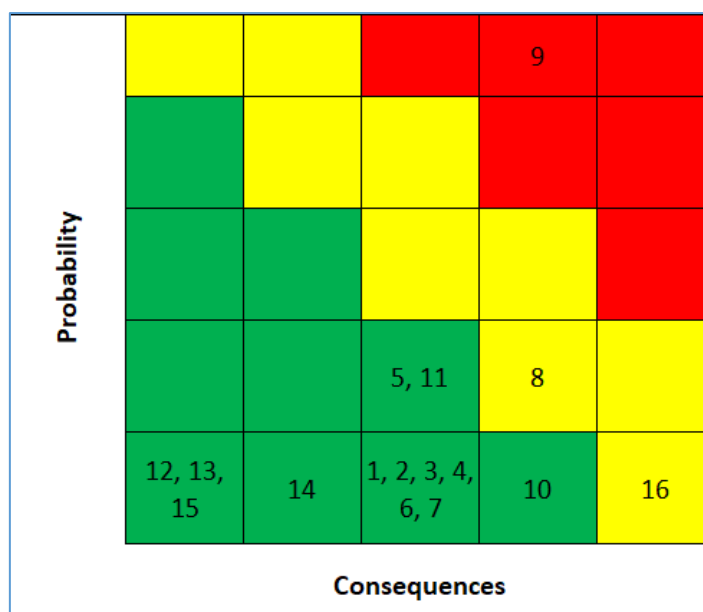
Figure 1: Probability/consequences depiction of the ASSISTANCE risks

2.1.1. Risk R1 Partner performance issues

Risk statement:

If partners do not perform their work on time, then delays in dependent work and deliverables/milestones could occur.

Context:

Partners can underperform or leave the project. Key personnel may be temporarily unavailable. This can happen to any partner at any time during the project.

Impact on project:

Delayed results can interrupt the flow of work elsewhere in the project, contribute to animosity between partners, and can cause delays in deliverables.

Current rating: probability 1, consequence 3 (overall 3). No change during R1 lifecycle.

WPs affected: All

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- Have quarterly reports and plenary meetings to confirm that all partners are performing their tasks within the budget and schedule.
- If deviations are needed, the coordinator will inform the PO immediately for advice.

2.1.2. Risk R2 Planning issues

Risk statement:

If planning during the project is not adequate or timely, then resources may not be used efficiently, and deliverables/milestones could be delayed.

Context:

Poor planning can lead to wasting resources and delaying work, which in turn reduces the motivation of the partners. NOTE: See also R6.

Impact on project:

Partners may lose confidence in project management. They may also try to solve planning problems themselves, which could lead to chaos.

Current rating: probability 1, consequence 3 (overall 3). No change during R2 lifecycle.

WPs affected: All

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- Have quarterly reports and plenary meetings to confirm that all tasks are performed within the schedule.
- Convene a PIC meeting/telco for detecting the origin of the delay and to take corrective actions.
- Apply the corrective actions agreed by the PIC.
- Monitor the issue periodically to ensure that the solution is working.

2.1.3. Risk R3 Collaboration issues (conflict resolution)

Risk statement:

If the consortium cannot work well together, then the quality of the project outcomes is likely to suffer.

Context:

Partners are expected to communicate their needs and ideas in a professional manner, and to treat each other with respect. When this does not happen, the project can become toxic for everyone.

Impact on project:

The quality and timeliness of the deliverables can be affected. Important decisions may be delayed or blocked. WP and/or task interactions could be insufficient or misunderstood. Resources could be wasted.

Current rating: probability 1, consequence 3 (overall 3). No change during R3 lifecycle.

WPs affected: All

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- Project coordinator discusses the issue with partners involved to find a quick/easy solution
- Project coordinator apply appropriate decision-making and conflict resolution procedures.
- If necessary, involve the management of the affected organisations, together with the ASSISTANCE project coordinator.

2.1.4. Risk R4 Obsolete technology

Risk statement:

If the state-of-the-art in FR technology evolves beyond the project technology, then the market for and scientific benefit of project results would not have as much impact as expected.

Context:

SA and FR training technology is evolving at a fast pace. The project could fall behind, and the results will not have as much value as anticipated. End users are very careful with their technological choices.

Impact on project:

The results of the ASSISTANCE project could be viewed as obsolete by end users, in which case they will not implement them.

Current rating: probability 1, consequence 3 (overall 3). No change during R4 lifecycle.

WPs affected: WP2 – WP7

Overall status: Monitoring

Owner: Eva Muñoz Navarro (ETRA)

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- The consortium is continuously analysing the market, see T9.1, to detect technology obsolescence.
- If some technology is found to be phasing out, then the replacement technology will be adopted by the project if possible.
- The project Innovation Manager will conduct a market analysis to ensure that market trends are considered in a timely manner.
- An exploitation plan that includes business analysis (in WP9) will monitor user needs and market trends.

2.1.5. Risk R5 Pilot/technology/FR needs mismatch

Risk statement:

If the technological approach chosen for a pilot does not fulfil the needs of the FRs involved, then either the technological approach or the pilot must be modified.

Context:

First, the pilots should be designed to demonstrate how the project solutions satisfy the needs of the end users. Second, the technological approach for the pilots must satisfy the needs of the FRs. NOTE: See also R8.

Impact on project:

The pilots may not demonstrate the full potential of the technological approaches to meet the needs of the end users. The end users may not, therefore, implement the ASSISTANCE solutions.

Current rating: probability 2, consequence 3 (overall 6). No change during R5 lifecycle.

WPs affected: WP2 – WP5, WP7

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- Special care must be placed on the evaluation of the requirements and existing solutions for each pilot. Possible assessment devices include questionnaires and rating the technology using a system usability index.
- A proof of concept based on a technology can be created if its capacity is not fully understood.

2.1.6. Risk R6 Technology development delays

Risk statement:

If development delays occur, then evaluation work later in the project could fall off schedule as well.

Context:

The technical development work must be completed before evaluation work can begin. Delays in the technical work could propagate delays in evaluation, which does not have much scheduling flexibility. NOTE: See also R2.

Impact on project:

Worse case: there is no time left in the project for evaluation. The project end date may need to be postponed. Partners may need to work beyond their budgeted time.

Current rating: probability 1, consequence 3 (overall 3). No change during R6 lifecycle.

WPs affected: WP3 - WP5, WP7

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- Have quarterly reports and plenary meetings to confirm that all tasks are performed within the schedule.
- Convene a PIC meeting/telco for detecting the origin of the delay and to take corrective actions.
- Apply the corrective actions agreed by the PIC.
- Monitor the issue periodically to ensure that the solution is working.

2.1.7. Risk R7 Insufficient resources for technology development

Risk statement:

If resources are not sufficient to support technical development activities, then the technology may be unavailable or delayed.

Context:

The affected partners would not have estimated their budgets/resources correctly during the proposal preparation phase.

Impact on project:

The technological results of the project could be unsatisfactory.

Current rating: probability 1, consequence 3 (overall <mark>3</mark>). No change during R7 lifecycle.

WPs affected: WP3 – WP5

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- The consortium will prioritize the technological needs of the project, focusing firstly on the components necessary for the implementation of the pilots.
- If the problem is severe, the coordinator will inform the PO to determine if resources or tasks must be restructured/reassigned.

2.1.8. Risk R8 Final results are not as expected by end users

Risk statement:

If lack of communication between end users and technical partners happens, then the final project results may not be useful for the end users.

Context:

The testing stakeholders are primarily the end users of the technology and training platforms. The project results must fulfil their needs. Some end users have expressed their concern for the lack of fluent and direct communications between end users and technical partners. NOTE: See also R5.

Impact on project:

The testing stakeholders (end users) will not use the ASSISTANCE solutions if they do not believe that sufficient value has been added to their operations.

Current rating: probability 2, consequence 4 (overall <mark>8</mark>). No change during R8 lifecycle.

WPs affected: WP6, WP7

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 6/11/2019, 14/2/2020, 7/7/2020

Action plan:

- ASSISTANCE strategy implements a permanent feedback loop in order to prevent misalignment between user needs and platform specifications.

- Arrange more opportunities (telcos, meetings, workshops) for productive interactions to promote a constant dialog between research teams and end users.
- Reach out to the End Users Group for input and feedback as technology develops.

2.1.9. Risk R9 Global pandemic

Risk statement:

If the pandemic continues, then some of the project activities could be delayed.

Context:

Some of the partners could be isolated or even become infected. It is possible that some partners will not be able to perform their project duties on time due to restrictions imposed by responses to the pandemic.

Impact on project:

Some of the project developments could be delayed. End users may need to adjust their priorities in response to the pandemic.

Current rating: probability 5, consequence 5 (overall 20). No change during R9 lifecycle.

WPs affected: All

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 18/03/2020, 7/7/2020

Action plan:

- Maintain communication channels within the whole consortium
- Increase the number of bilateral contacts for early detection of potential problems regarding the partner's ability to perform their activities.
- Contingency plans for conducting the pilots will be made if the pandemic situation prevents the pilots from being conducted according to the original plan.

2.1.10. Risk R10 Insufficient exploitation of results

Risk statement:

Taking into account that the expected project results will be a fully operating prototype and not a commercial product, if the results of the project are not fully exploited by the partners, then the benefits of the project will not be fully realized.

Context:

Maximizing the benefits of participating in the project is in the best interest of the consortium, the project as a whole, and the EU.

Impact on project:

The partners/consortium may not experience the full benefits of participating in the project.

Current rating: probability 1, consequence 4 (overall 4). No change during R10 lifecycle.

WPs affected: WP1, WP9

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 26/09/2019, 14/2/2020, 7/7/2020

Action plan:

- Clear individual exploitation plans will be defined in order to identify an exhaustive list of future exploitation opportunities.
- A clear coordinated business plan will be triggered with the support of two procurements (PCP and PPI) prepared in T9.4.

2.1.11. Risk R11 Lack of female end users

Risk statement:

If insufficient data about female FRs is available for the gender dimension analysis then the technical and usability needs of female FRs cannot be fully understood and implemented in the ASSISTANCE technology and training systems.

Context:

There tends to be much fewer female FRs than male FRs, especially firefighters. It is important to include the technical and user needs of women FRs but it could be difficult to collect a statistically valid number of women end users to do the gender dimension analysis.

Impact on project:

The validity of the gender dimension analysis will be questioned.

Current rating: probability 2, consequence 3 (overall 6). No change during R11 lifecycle.

WPs affected: WP2, WP6 – WP8

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 7/05/2019, 14/2/2020, 7/7/2020

Action plan:

- Ask project partners for contact information for female FRs.
- Ask UC whether they have received enough information about female participation in FR teams.

2.1.12. Risk R12 Unable to fly drones in Turkey

Risk statement:

If CATEC pilots' licenses are not valid in Turkey due to Turkish legislation, then the Turkish demo could be jeopardized due to lack of pilots for flying the drones during the demonstration.

Context:

Some partners have expressed their concern because Turkey is not an EU member and they have different legislation with respect to drone flying licenses than the EU member states.

Impact on project:

Turkish pilot could be jeopardized or even suspended.

Current rating: probability 1, consequence 1 (overall 1). See Figure 2 for R12 lifecycle.

WPs affected: WP7

Overall status: Resolved

Owner: Zeynep Sofuoglu

Monitoring dates: 11/5/2019, 14/2/2020, 20/3/2020, 7/7/2020

Action plan:

- Turkish partners must investigate potential legal restrictions and necessary permissions.
- Turkish partners must check potential pilot replacements. (e.g. Turkish firefighter drone pilots)
- Potential subcontracting of drone pilots for the pilot.
- Drone pilots in Turkey will be from local firefighter drone teams or local pilots subcontracted by AAHD.
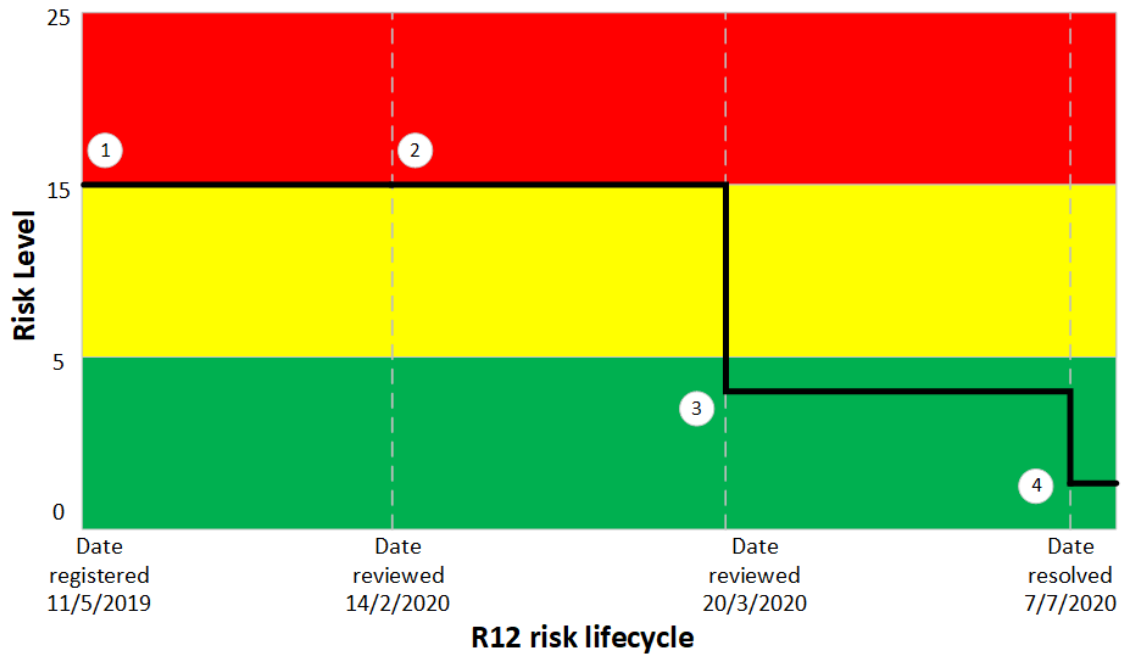
Figure 2: History of R12 risk rating

2.1.13. Risk R13 Drone arrival delay/stoppage due to Turkish customs procedures

Risk statement:

If some important devices (e.g. drones) sent to Turkey are stopped in customs, then the Turkish pilot could be jeopardized due to lack of important elements for performing the demonstration.

Context:

Some partners have expressed their concern due to past experiences with the Turkish customs.

Impact on project:

Turkish pilot could be jeopardized or even suspended.

Current rating: probability 1, consequence 1 (overall 1). See Figure 3 for R13 lifecycle.

WPs affected: WP7

Overall status: Resolved

Owner: Zeynep Sofuoglu

Monitoring dates: 23/10/2019, 14/2/2020, 20/3/2020, 7/7/2020

Action plan:

- Turkish partners must investigate potential customs restrictions and necessary permissions.
- Turkish partners must check potential drones' replacement. (e.g. Turkish firefighter drones).
- Potential subcontracting of drones and pilots for the pilot demonstration.
- Commercial drones provided by CATEC or commercial drones rented by AAHD will be used in the Turkish pilot to avoid potential customs problems.
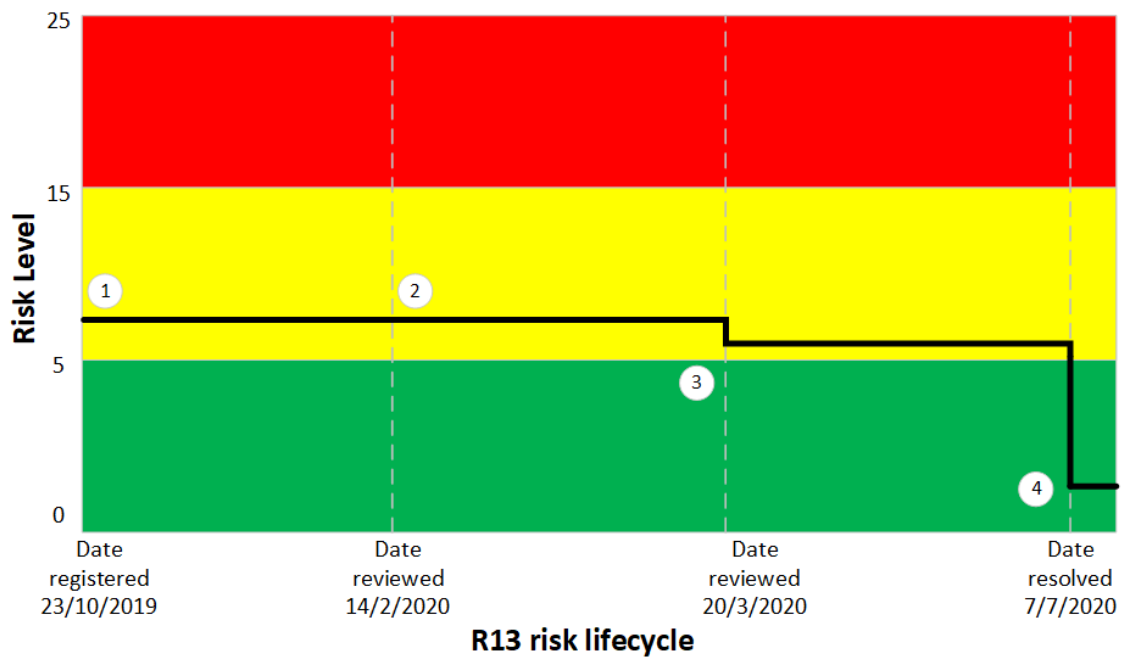
Figure 3: History of R13 risk rating

2.1.14. Risk R14 Unauthorized access to repository

Risk statement:

If an unauthorized person, e.g. a person that leaves the project and still has access to the repository through the partner's login, then that person can still get data/information that might be sensitive about the project.

Context:

When partners have a single login to the repository it is hard to control who has access to it. Also, people that have left the organization or project can still access the repository. There should be a protocol for notifying someone, maybe the assigned DPO within each organization, to ensure data security.

Impact on project:

Sensitive data in the repository that should not spread beyond the consortium could be compromised.

Current rating: probability 1, consequence 2 (overall 2). No change during R14 lifecycle.

WPs affected: WP1

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 31/10/2019, 14/2/2020, 7/7/2020

Action plan:

- Inform partners that they must control access to the repository so that no sensitive data is compromised.
- In case a person leaves a partner in a bad manner, the main contact for that organization shall immediately inform the coordinator to change the credentials for accessing the repository.
- If necessary, establish a regular change of passwords.

2.1.15. Risk R15 Robots arrival delay/stoppage due to Turkish customs procedures

Risk statement:

If some important devices (e.g. robots) sent to Turkey are stopped in the custom, then the Turkish pilot could be jeopardized due to lack of important elements for performing the demonstration.

Context:

Some partners have expressed their concern due to past experiences with the Turkish customs.

Impact on project:

Turkish pilot could be jeopardized or even suspended.

Current rating: probability 1, consequence 1 (overall 1). See Figure 4 for R15 lifecycle.

WPs affected: WP7

Overall status: Resolved

Owner: Zeynep Sofuoglu

Monitoring dates: 5/11/2019, 14/2/2020, 20/3/2020, 7/7/2020

Action plan:

- Turkish partners must investigate potential customs restrictions and necessary permissions.
- Turkish partners must check potential robot replacement. (e.g. Turkish firefighter robots).
- Potential subcontracting of robots and pilots for the pilot demonstration.
- Consider whether robots are needed in the Turkish pilot.
- Robots will not be used in Turkish pilot due to the potential problems in customs and because they don't play an important role in the pilot, which is focused on sanitary staff protection.
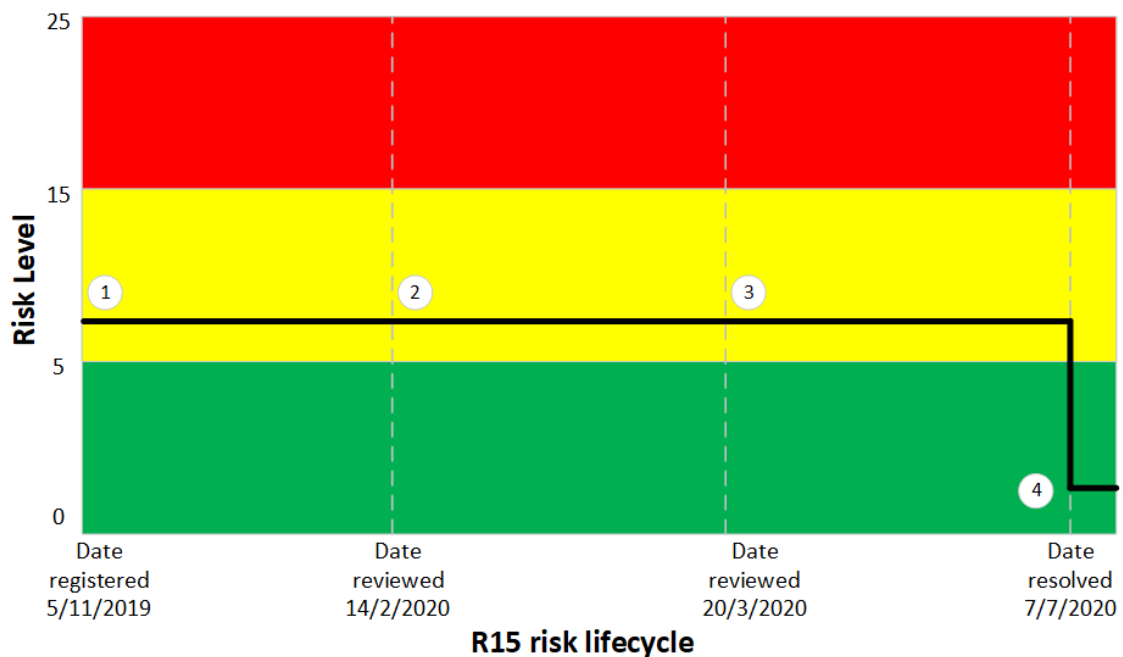
Figure 4: History of R15 risk rating

2.1.16. Risk R16 Turkey increases its military conflict

Risk statement:

If Turkey increase its military conflict on the Syrian border (or anywhere that could affect safety during the pilot), then travel to Turkey could be too dangerous.

Context:

The current situation analysis describes a short military conflict on the Syrian border, but if the conflict goes larger, travel to Turkey could be much too dangerous. As of October 2020, the military conflict has reduced significantly.

Impact on project:

Turkish pilot could be suspended.

Current rating: probability 1, consequence 5 (overall 5). No change during R16 lifecycle.

WPs affected: WP7

Overall status: Monitoring

Owner: Zeynep Sofuoglu

Monitoring dates: 5/11/2019, 14/2/2020, 7/7/2020

Action plan:

- Continuously check the conflict status.
- Scout for a potential place for performing the first project pilot (e.g. Sweden).

2.2. Opportunities analysis

The 8 opportunities are listed in Table 2. Five of these opportunities (O1, O2, O4, O5, O8) are meetings (conferences, workshops, exhibitions) in which dissemination to end users and other stakeholders could occur. Unfortunately, only the first Drone Tech conference (O1) was possible to attend in person due to the COVID-19 situation. The DRS Community of Users (CoU) Workshop had a reduced number of sessions that were presented online. . The Drone Tech 2020 conference will be held online. Hopefully, there will be new opportunities to attend the remaining meetings, and others, before the project ends.

Opportunity Name	Category	Description	Statement
O1	End User	Drone Tech conference and end user meeting 2019	If ASSISTANCE has a presence at the Drone Tech 2019 meeting, then we can get more information about end user needs, state-of-the-art technology, and disseminate the project.
O2	Business	Drone Tech conference and end user meeting 2020	If ASSISTANCE has a presence at the Drone Tech World Meeting 2020, then we can get more information about end user needs, state-of-the-art technology, and disseminate the project.
O3	Innovation	Possible use of ATMON FL sensor for design purposes	If a new sensing technology can be used on the ASSISTANCE drones and compatible with the ASSITANCE platform, then a feasibility study should be conducted to determine possible costs and benefits to the ASSISTANCE project.
O4	Business	Participation in Interschutz event	If the ASSISTANCE project has a presence at Interschutz this summer, then new exploitation opportunities can be found and interested end users can be added to the ASSISTANCE network.
O5	Business	Participate in Civil Security Research event	If the Preparing for Tomorrow: The Future of Civil Security Research – for People, for Society, for Europe event occurs, then the PO has requested the ASSISTANCE project to have an exhibition there.

O6	End User	NL platform for female firefighters	If ASSISTANCE can connect to the platform for female firefighters in The Netherlands, then the resulting information about the needs and opinions of female firefighters can be included in the Gender Dimension work in WP8.
O7	End User	Renewed interest in VR training due to pandemic	If more first responders are interested in VR training, then there could be a better market for the new training being developed in the ASSISTANCE project.
O8	Business	Participation in DRS Community of Users Workshop	The Commission's Community of Users (CoU) for Secure, Safe and Resilient Societies provides a platform to share information across Member States and brings together the latest policy and research developments in an easily accessible format. This CoU is composed by policy makers, scientists, industry (including SMEs), practitioners, NGOs and the general public with interests in security, safety, and resilience.

Table 2: Summary of opportunity register entries

Viewed from a probability/consequence perspective in Figure 5, most of the opportunities are considered quite advantageous to the project for different reasons. Each of the opportunities will be described in the following subsections.
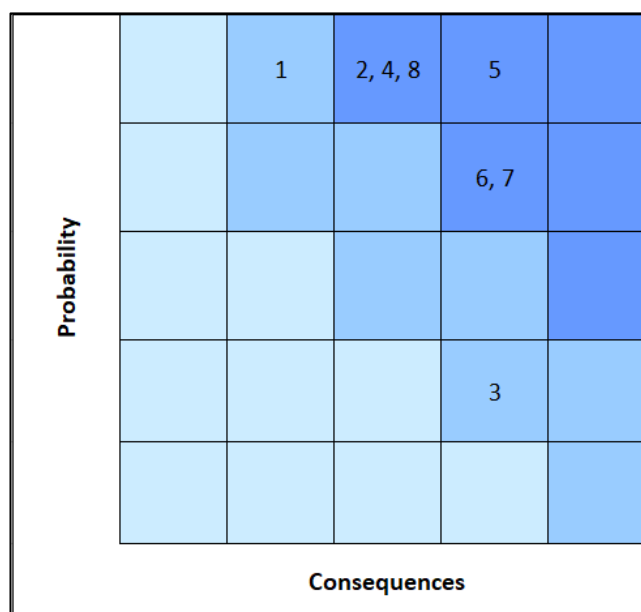

Figure 5: Probability/consequences depiction of the ASSISTANCE opportunities

2.2.1. Drone Tech conference and end user meeting 2019

Opportunity statement:

If ASSISTANCE has a presence at the Drone Tech 2019 meeting, then we can get more information about end user needs, state-of-the-art technology, and disseminate the project.

Context:

The meeting is about drones and will include a special VR zone and workshops in which CNBOP and CyberLab will present a short simulation of the usage of VR/presenting a landscape view after a disaster in virtual reality and conduct workshops on this subject. A large number of representatives of uniformed services will be at the event.

Impact on project:

More exposure for the project, possible new members of the end user network.

Current rating: probability 5, consequence 2 (overall 10). No change during O1 lifecycle.

WPs affected: WP2 – WP6, WP9

Overall status: Resolved

Owner: Federico Carvajal

Monitoring dates: 30/09/2019, 2/3/2020

Action plan:

- Advertise Drone Tech to consortium and encourage everyone to spread the word through their networks.

2.2.2. Drone Tech conference and end user meeting 2020

Opportunity statement:

If ASSISTANCE has a presence at the Drone Tech 2020 meeting, then we can get more information about end user needs, state-of-the-art technology, and disseminate the project.

Context:

Next edition of Drone Tech World Meeting will be held 6-7 November 2020 in Torun (Poland). The biggest cyclic drone meeting in Poland is about unmanned technology (mainly drones, but also ground vehicles, see https://dronetech-poland.com/?lang=en) and will include: conference, seminars, B2B meetings, exhibition, special VR zone and workshops in which CNBOP and partners (e.g. CyberLab) will present a short simulation of the usage of VR/presenting a landscape view after a disaster in virtual reality and conduct workshops on this subject. A large number of representatives of uniformed services will be at the event (e.g. Secret Services, Police, Voluntary Fire Service, State Fire Service, Border Guard, medics). NOTE: This meeting will take place online.

Impact on project:

More exposure for the project, possible new members of the end user network. There is also opportunity to find contractors, partners.

Current rating: probability 5, consequence 3 (overall 15). No change during O2 lifecycle.

WPs affected: WP6, WP7, WP9

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 2/3/2020, 7/7/2020

Action plan:

- Advertise Drone Tech to consortium and encourage everyone to spread the word through their networks.
- Postponed until next year?

2.2.3. Possible use of ATMON FL sensor for design purposes

Opportunity statement:

If a new sensing technology can be used on the ASSISTANCE drones and compatible with the ASSITANCE platform, then a feasibility study should be conducted to determine possible costs and benefits to the ASSISTANCE project.

Context:

A new sensor technology (ATMON FL) can measure many hazardous gaseous substances that are of interest to the project. This system is made for use on light weight drones.

Impact on project:

Depending on the costs and benefits of using this technology, it could fulfil an important need for the project.

Current rating: probability 2, consequence 4 (overall 8). No change during O3 lifecycle.

WPs affected: WP3 – WP5, WP7

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 2/3/2020, 7/7/2020

Action plan:

- Conduct a cost benefit analysis to determine whether the technology is good for the project.

2.2.4. Participation in Interschutz event

Opportunity statement:

If the ASSISTANCE project has a presence at Interschutz this summer, then new exploitation opportunities can be found and interested end users can be added to the ASSISTANCE network.

Context:

The Interschutz first responder event occurs every 5 years and, luckily, will happen during the ASSISTANCE project. Therefore, it is an excellent opportunity to expose the project to a wide range of first responders from all over the world. NOTE: Interschutz has been postponed until 2021. The ASSISTANCE project has confirmed participation in the next Interschutz event, which is scheduled for June 2021.

Impact on project:

Potential customers of the ASSISTANCE system may be found at Interschutz. New SA and training technologies that may improve the outcome of the ASSISTANCE project if implemented will be on display.

Current rating: probability 5, consequence 3 (overall 15). No change during O4 lifecycle.

WPs affected: WP6, WP7, WP9

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 2/3/2020, 7/7/2020

Action plan:

- Promote attendance of ASSISTANCE partners at the event.
- Get a booth?
- Postponed until next year.

2.2.5. Participate in Civil Security Research event

Opportunity statement:

If the Preparing for Tomorrow: The Future of Civil Security Research – for People, for Society, for Europe event occurs, then the PO has requested the ASSISTANCE project to have an exhibition there.

Context:

This is a high-profile dissemination opportunity that is of particular interest to the PO. Note: this event has been cancelled, don't know if it will be attempted again in 2021.

Impact on project:

New exposure to the research community. Partners that were planning to attend Interschutz in 2020 are especially encouraged to attend this event.

Current rating: probability 1, consequence 4 (overall 4). See Figure 6 for O5 lifecycle.

WPs affected: WP6, WP7, WP9

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 7/7/2020

Action plan:

- Promote attendance of ASSISTANCE partners at the event.
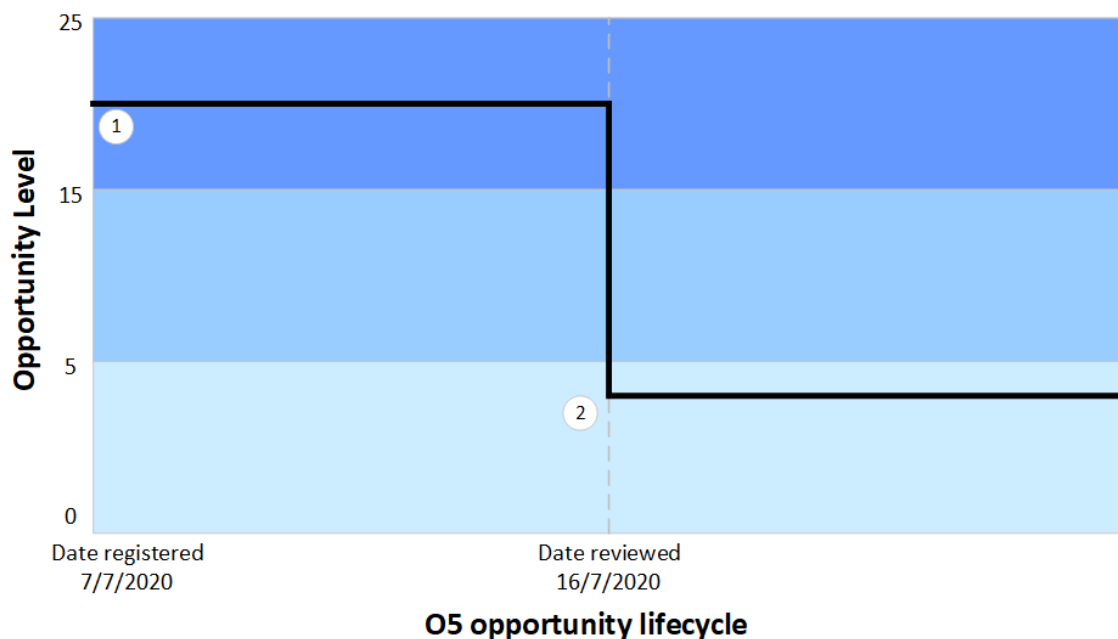- Event was cancelled. Don't know if it will be attempted again next year.

Figure 6: History of O5 opportunity rating

2.2.6. NL platform for female firefighters

Opportunity statement:

If ASSISTANCE can connect to the platform for female firefighters in The Netherlands, then the resulting information about the needs and opinions of female firefighters can be included in the Gender Dimension work in WP8.

Context:

Eric (IFV) knows about a platform for female firefighters in The Netherlands that could be a great source of information for the Gender Dimension work being done in WP8.

Eric will contact the chairwoman and ask her if she would like to discuss this with Arturo (UC). After a few internal meetings, the association chairwoman (Claudia Prins) has shown her interest of involvement in the project and even in the Dutch pilot. Zeynep (AAHD) is also aware of this and we will contact them soon.

Impact on project:

It is very difficult to get statistical (or other) information about female firefighters because there aren't many of them. Having a substantial source of information about their needs and concerns would be very helpful to WP8.

Current rating: probability 4, consequence 4 (overall 16). No change during O6 lifecycle.

WPs affected: WP8

Overall status: Active

Owner: Federico Carvajal

Monitoring dates: 7/7/2020, 9/24/20

Action plan:

- Eric will try to connect the chairwoman of the platform with Arturo.
- Arturo (UC) and Zeynep (AAHD) will contact the chairwoman of the platform to discuss further their involvement.

2.2.7. Renewed interest in VR training due to pandemic

Opportunity statement:

If more first responders are interested in VR training, then there could be a better market for the new training being developed in the ASSISTANCE project.

Context:

Since most organizations are trying to avoid close contact among their people, opportunities to do things such as training remotely or virtually are being considered more seriously now. Eric has noticed a difference at IFV.

Impact on project:

First responder organizations may be looking for new ways to train their people. This could increase the impact of the results of the training part of the ASSISTANCE project.

Current rating: probability 4, consequence 4 (overall 16). No change during O7 lifecycle.

WPs affected: WP6, WP9

Overall status: Monitoring

Owner: Federico Carvajal

Monitoring dates: 7/7/2020

2.2.8. Participation in DRS community of users workshop

Opportunity statement:

The Commission's Community of Users (CoU) for Secure, Safe and Resilient Societies provides a platform to share information across Member States and brings together the latest policy and research developments in an easily accessible format. This CoU is composed by policy makers, scientists, industry (including SMEs), practitioners, NGOs and the general public with interests in security, safety, and resilience.

Context:

We were contacted from the Commission's Community of Users for Secure, Safe and Resilient Societies to participate in their 15th meeting to be held online.

Impact on project:

Participating in this kind of events under the umbrella of the Commission gives the project a high visibility to a large number of stakeholders. As well it can be an opportunity to find synergies and support the development of new initiatives.

Current rating: probability 5, consequence 3 (overall 15). No change during O8 lifecycle.

WPs affected: WP6, WP9

Overall status: Complete

Owner: Federico Carvajal

Monitoring dates: 31/08/2020, 14/10/2020

Action plan:

- UPV to participante in the CBRN technologies for first responders session
- UC to participate in the Natural Hazards technologies for first responders session.

3. Conclusions

- All R&Os must be reviewed on a regular basis to ensure that the risks are minimized, and the opportunities are maximized.
- The 10 basic management risks that were identified during the proposal phase of the project have maintained their acceptable ratings.
- The three risks related to using drones and robots in the Turkish pilot have been resolved.

- There is a continuing moderate risk for which the action plan calls for increased efforts to connect the end user partners with the technology development partners to avoid a potential misalignment.
- Two risks have been identified with sources that are outside the control of project management. These are military conflict in Turkey and the global pandemic.
    - Contingency plans are being explored for relocating the Turkish pilot if necessary, although the military conflict has reduced significantly during the past year.
    - Social distancing procedures are in effect for project meetings. Contingency plans for conducting the pilots will be made if the pandemic situation prevents the pilots from being conducted according to the original plan.
- Three of the four opportunities to disseminate project results and gain feedback from end user and technical communities have been cancelled or postponed due to the global pandemic. Hopefully, they will be reinstated during the project lifetime.
- A positive outcome of the global pandemic is that there is increased interest in virtual training for first responders.