

Deliverable D1.3

Risk Management Plan

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Change Log

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v0.1	01.02.2023	Initial draft created
v0.2	28.03.2023	Draft submitted for internal review
v0.3	30.03.2023	Final draft approved

Acronyms and Abbreviations

AI	Artificial Intelligence
D	Deliverable
PU	Public
RI	Research Infrastructure
v	Version
WP	Work Package
RMP	Risk Management Plan
RMS	Risk Management Strategy

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Executive Summary

AI4Life is a project from the Horizon Europe Work Programme that brings together ten partners from 8 countries into a 4 million EUR effort for three years with the goal of bridging the life science and computer science communities through artificial intelligence(AI) and machine learning(ML).

For AI4Life to fulfil its objectives, awareness of possible risks and implementation of risk management measures are required. Risks are defined as any situations, events or conditions which may reasonably occur and have an impact on the project. A specific risk may originate from multiple sources, and the effect(s) may be positive, negative or both.

This document outlines the Risk Management Plan (RMP) for AI4Life, detailing how the consortium will monitor and mitigate possible risks. The RMP deliverable is a part of Work Package 1(WP1) 'Project Coordination'.

1. Risk Management Strategy

To maximise the likelihood of success and to minimise any negative impacts of risks throughout the project, a proper Risk Management Strategy (RSM) must be in place. A RSM provides a systematic approach for identifying and managing possible risks.

In collaboration with the Project Management Team and Steering Committee i.e., the WP Leads, the Project Manager is responsible for aggregating the identified risks and ensuring proper mitigation measures are employed at the appropriate intervals.

The RMS steps:

1. Development of the Risk Matrix
2. Identification and categorization of risks
 - a. Via the monthly Project Management Team and Steering Committee meetings, the administrative coordinator and the scientific coordinators will monitor the project progress and identify any deviations from the work plan.
 - b. Work package leaders will report any problems to the coordinators during the monthly steering committee meetings.
3. Mitigation measures will be identified, and the relevant partners will participate in their implementation.
4. Evaluation and Updates of identified risks
 - a. Identified potential risks will be regularly evaluated and updated based on timelines fitting of the specific risk.
 - b. Assessments will also be done in alignment with the internal progress reports from each partner at months 9, 18, and 27 (described in Deliverable 1.1) and with formal periodic reports

2. Risk Matrix

The Risk Matrix shows the overall risk category assumed based on the likelihood that the risk will occur and the severity of the effect. In total there are 5 risk categories, ranging from Very Low =1 to Very High=5.

		SEVERITY		
		Low	Medium	High
P R O B A B I L I T Y	Low	Very Low 1	Low 2	Medium 3
	Medium	Low 2	Medium 3	High 4
	High	Medium 3	High 4	Very High 5

3. Identified Risks and Mitigation Measures

WP	Risk	Likelihood	Severity	Category	Mitigation Measures
1	Pandemic restrictions remain and we can never meet in person.	High	Low	3	All used to virtual meetings, sound management structures in place, online collaboration space available.
1	Delay of key Milestones or Deliverables.	Low	Low	1	The Project Management Executive will conduct a thorough progress monitoring and flag potential problems early on. Any potential delays will be discussed in the bimonthly project management meetings, and corrective actions will be worked out and decided on jointly.
2	Unavailability of dependent services such as Zenodo and Github.	Low	High	3	We use Zenodo as our storage for models and website metadata, and Github for providing continuous integration (CI). If any of them stop providing services, we can quickly set up our own service built with open source software such as MINIO for providing object storage and GitLab for storing source code and performing CI tests.
2	Insufficient compute power for serving users.	Medium	Low	2	If the scheduled compute power is not sufficient, we will help some of our heavy users to set up more instances with our deployment toolkit, or we can implement a queue system to delay the user requests.
2,7	Low usage of web services due to insufficient visibility	Medium	Medium	3	Dissemination measures have been planned to create high visibility. The use e.g. of social media platforms can be scaled up quickly to increase awareness



WP	Risk	Likelihood	Severity	Category	Mitigation Measures
3	Overwhelming number of help requests.	High	Low	3	Organize the community (for example, extensively use the forum), so they help each other and lower the number of requests; superusers can be delegated from the community to provide support to others. Revise the documentation and include more tutorial material on the web page.
3	Use of resources below expectation	Low	Low	1	Coordinate with WP7 to increase the awareness of the life science community and of the developers on the resource; prepare and release more training materials.
3	Delayed development of tools.	Medium	Medium	3	Build stronger ties and connections with the community of developers to speed up the implementation.
4	Dependent services become unavailable or costly	Low	High	3	We will use DockerHub to storage Docker images to easily distribute deep-learning algorithms and GitHub for hosting container building instructions, auxiliary code and providing continuous integration (CI). If any of them stop providing their services (or stop to offer these services for free), we will either switch to one of many existing alternatives or set up our own service(s), e.g., the open source solution MINIO for providing object storage or GitLab for storing source code and performing CI tasks. Many of the hosting institutions of our consortium partners do, in fact, already have such services running in-house.
4	Containerization technologies evolve at fast pace	Medium	Low	2	If new and better containerization technologies beyond docker and singularity become available, we will procure to migrate our



WP	Risk	Likelihood	Severity	Category	Mitigation Measures
					codebase to take advantage of these technologies, ensuring we provide access to industry-standard developer resources.
5	Community cannot agree on annotation file format.	Medium	Medium	3	Adoption/merging of best available existing formats, provide effective tools and examples.
5	Standardised formats have low uptake	Medium	Low	2	Implementation of easy-to-use conversion programs, require formats as part of deposition to BIA/BMZ.
6	No (or too few) responses to Open Calls.	Low	Medium	2	Open Call deadlines can be extended and additional 'marketing' strategies applied. It is certain that many interesting open analysis problems exist, but potential benefactors need to be made aware of our offer to support them in finding sustainable solutions.
6	Requests received via Open Calls relevant but not computationally solvable with available computational methods.	Medium	Low	2	While important analysis tasks that are not fully automatable are common, these tasks still benefit from partial automation. Additionally, such problems can be ideal candidates for open challenges of Task 6.2.
6	Solutions submitted to challenges require computational directives not yet covered by AI4LIFE standards.	Medium	Low	2	Standards are a moving target and the field is moving fast. We are prepared to adapt and develop our standards and can always fall back to including arbitrary processing steps into the 'model' source itself. Hence, we can always work around the problems until the model standard catches up with the required computational elements.



WP	Risk	Likelihood	Severity	Category	Mitigation Measures
7	Unequal representation of specific scientific communities.	Low	Low	2	Communicate and work together with the participating RIs to boost outreach to specific communities.



Summary of the Categorised Risks

Of the 16 possible risks which have been identified, none received a category High (4) or Very High (5) classifications. Therefore, none of the risks with a potentially high or moderate impact are highly likely to occur during the AI4Life project lifecycle. Seven risks were identified as Medium (3), i.e., having either a moderate severity and moderate likelihood or seven risks were identified as Low (2), and two were identified as Very Low (1).

4. Conclusion

The RMP outlines one of several quality assurance mechanisms in the AI4Life project. The RMP provides an important framework for managing potential risks and ensuring a completion of the project objectives.



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