

Work Package 7 – Dissemination, communication, and exploitation of results

D7.4 – Exploitation and IPR Plan

Lead Contractor: SIE

Author(s): Carla Sebastiani

This document is the ALIGNED project (grant no. 101059430) deliverable 7.4, containing the initial exploitation and IP management plans for the project results.

PROJECTS DETAILS

Project title		Aligning Life Cycle Assessment methods and bio-based sectors for improved environmental performance.	
Project acronym	ALIGNED	Start / Duration	01/10/2022 – 36 months
Type of Action	RIA	Website	www.alignedproject.eu

DELIVERABLE DETAILS

Dissemination level	PU	Nature	Report
Due date (M)	M6	Submission date	24/03/2023

DELIVERABLE CONTRIBUTORS

	Name	Organisation	Job title
Deliverable leader	Carla Sebastiani	SIE	Business Development Manager
Contributing Author(s)	Jorge Barona	SIE	In-house Consultant and Quality Reviewer
Reviewer(s)	All partners	All partners	All partners
Final review and quality approval	Flora Champetier	AAU	Project coordination
	Massimo Pizzol	AAU	Project coordination

DOCUMENT HISTORY

Date	Version	Name	Changes
22/02/2023	0.1	First draft	Initial version
27/02/2023	0.2	Internal quality review	Comments
01/03/2023	0.3	Second draft	Feedback implemented from internal quality review
24/03/2023	1.0	Final version	Final version

TABLE OF CONTENTS

Acronyms and abbreviations.....	5
Executive summary.....	6
1. Introduction	7
2. Exploitation Plan Methodology	8
2.1. Exploitation obligations.....	8
2.2. Exploitable innovations and ambitions.....	8
2.3. Exploitation plan.....	9
2.4. Internal exploitation risks	10
2.5. External exploitation limitations	10
3. Exploitation Plan for ALIGNED.....	11
3.1. ALIGNED’s innovation and ambition.....	11
3.2. ALIGNED’s key exploitable results.....	11
3.3. External exploitation limitations	13
4. IP management methodology	14
4.1. Management of knowledge and foreground IPR.....	14
4.2. Foreground IP	14
4.3. Background IP.....	14
4.4. Ownership allocation.....	15
4.5. Transfer and licensing of results.....	15
4.6. IPR risks.....	16
5. IP strategy for ALIGNED	17
5.1. Background IP.....	17
5.2. Foreground IP	18
5.3. IPR risks.....	18
6. Conclusions.....	20
References	21

List of tables

Table 1: Exploitation risk table format.....	10
Table 2: ALIGNED's Key Exploitable Results (summarised)	12
Table 3: Risk classification.....	16
Table 4: Example of IPR risk matrix.....	16
Table 5: IP background and foreground of the KER identified in ALIGNED	17
Table 6: ALIGNED's IPR risk matrix.....	18

List of figures

Figure 1: Exploitation strategy depending on TRL.....	9
---	---

Acronyms and abbreviations

ABBREVIATIONS	Description
CA	Consortium Agreement
EC	European Commission
EP	Environmental Performance
GA	Grant Agreement
IP	Intellectual Property
IPR	Intellectual Property Rights
KER	Key Exploitable Results
LCA	Life cycle assessment
M	Project Month
TRL	Technology Readiness Level
WP	Work Package

Executive summary

This document describes the initial version of the **Exploitation and Intellectual Property Rights Plan** as deliverable **D7.4** due **month 6**, customised for the ALIGNED project financed under Grant Agreement (GA) No. 101059430.

The initial ambition of the consortium members is to transform the project results into open-source materials, frameworks, and standards to contribute to the development of life cycle assessment harmonisation for the woodworking, textiles, biochemicals, construction and pulp and paper sectors, to aid the transition to biobased solutions as a way to support the green transition.

The first draft table of the Key Exploitable Results was taken from the proposal and was further discussed and detailed via a 1st exploitation workshop that took place on M4, and an exploitation questionnaire sent to the partners on the same month. The plan for exploitation at this stage of the project is to develop the Key Exploitable Results detailed in this report via the use of other open-source materials, frameworks, and data. Regarding IP background within the consortium, IP risks have been properly identified and addressed considering potential conflicts among partners, and the assessment of said risks as well as the definition for appropriate mitigation measures will be overseen by SIE every 6 months.

This report contains ALIGNED's exploitation and IPR management plans, and it will be updated twice throughout the project, specifically as deliverables D7.5 (M18) and D7.6 (M36).

1. Introduction

This report is part of **Work Package 7 - Dissemination, communication, and exploitation of results**, and is related specifically to *Task 7.2 - Exploitation and intellectual property rights management of project results*. The main objective of this work package is to coordinate within the project consortium the performance of dissemination, communication, and exploitation activities, including intellectual property rights (IPR) management strategies.

The purpose of this work package (WP) is to ensure that the project results reach out key targeted audiences with different objectives: **(1)** the exploitation of the project's KERs by the bio-based industry stakeholders, **(2)** the execution of dissemination activities which will also foster knowledge replication of the lifecycle assessment (LCA) frameworks developed, **(3)** the identification and engagement of stakeholders around the bio-based industry and the LCA practitioners, **(4)** the communication to wider, non-specialised audiences and the building of a cooperation strategy with the European Commission (EC) and relevant projects and initiatives.

The partners will maximise, as much as possible, the openness of the project results and the interaction with sectoral stakeholders in a balanced way with intellectual property (IP) protection measures established where necessary to ensure the proper exploitation of the project's key exploitable results (KER) and the protection of potentially confidential information. The Consortium will also contribute to common information and dissemination activities to increase the visibility and synergies between other Horizon Europe and H2020 supported actions.

Due to its public nature, this report will not include information classified as sensible or confidential by the project partners.

2. Exploitation Plan Methodology

During the project, an exploitation and IP management plan will be continuously developed through Task 7.2, describing the framework that will be used. It will allow taking the most advantage of the results reached by the end of the project and aims at preventing and mediating any potential conflicts between partners regarding IP ownership and exploitation rights of said results after the project lifetime.

Having a broad knowledge of the market, knowing where the innovation is aimed, and defining a well-prepared exploitation strategy are essential steps to increase the possibility of success of a certain product and/or service.

2.1. Exploitation obligations

Up to four years after the project completion, all beneficiaries must use their best efforts to ensure the exploitation of the results either directly or indirectly (through transfer or licensing, for example). It is important to highlight that this exploitation is not limited to commercial exploitation, so it can be either by [1]:

- a) Using them in further research activities (outside the action).
- b) Developing, creating, or marketing a product or process.
- c) Creating and providing a service.
- d) Using them in standardization activities or other use scenarios (inform policy or for educational purposes).

However if, despite the best efforts for exploitation, no uptake happens within 1 year after the end of the project, then the project must use the [Horizon Results Platform](#) to make the exploitable results visible for interested parties [1].

2.2. Exploitable innovations and ambitions

This section aims to describe the novelty value of ALIGNED's innovations, as well as their advantages and disadvantages compared to similar existing technologies in the market. It will include a description of these innovations' technical information (limited in case of sensitive information) such as features, development stages, etc. Also, it will further describe the value proposition of the project, explaining the core values of these innovations, what problems will they solve, what unfulfilled needs will they meet, or what added value will they provide compared to existing technologies that target the same user segments.

The potential barriers or limitations will also be listed and will be targeted by carrying out a risk analysis, addressing the main limitations that could be encountered through the project and that could endanger the implementation of ALIGNED and its results.

2.3. Exploitation plan

The exploitation strategy will lead the way to how the innovations of the ALIGNED project can be exploited. This section will include the measures to put this strategy in place during the project’s lifetime and after its end.

The exploitation plan will develop guidelines to reach the targets, depicting a roadmap on how to achieve the exploitation objectives in the following years after the end of the project. It will also describe the parties who will be responsible for the exploitation, and the external partners or experts needed to exploit the results.

The activities described and the future versions of this report will be nurtured by the activities carried out from WP2 to WP6 regarding the development of the case studies for each of the sectors of interest: construction, woodworking, bio-based textiles, pulp and paper, bio-based chemicals.

Listed below are the possible exploitation routes to be considered, either for individual or group exploitation:

- ✓ Research activities.
- ✓ Deployment of novel product/service.
- ✓ Development of new legislation/standard.
- ✓ IP commercialisation, through license agreements, joint ventures, spin-offs, or other possible collaborations with the value chain’s stakeholders.

In Figure 1 is a scheme of the exploitation strategy defined considering the intended Technology Readiness Level (TRL) to be reached by each project result.

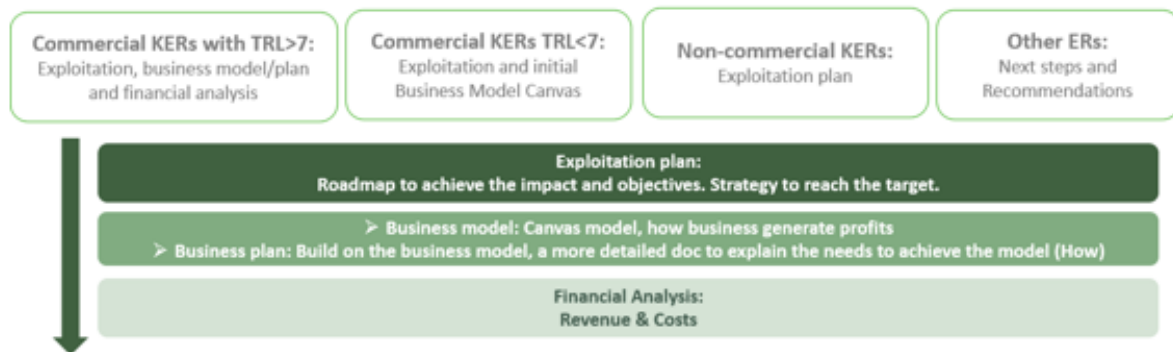


Figure 1: Exploitation strategy depending on TRL

In ALIGNED’s case, the results are all non-commercial KERs, so the exploitation plan will be customised to define the route and the timeline for its execution will be further refined through this and the following reports.

2.4. Internal exploitation risks

There are considerable risks for any newcomers to any market/sector, depending on their position in the value chain. These risks will become evident throughout the development of the project, so this and future versions of this Exploitation Plan will analyse the possible challenges that may arise when trying to exploit the achieved results.

On the table below is the format of the table to report internal exploitation risks, which will of course also be in line with the general risks identified for the project.

Table 1: Exploitation risk table format

Risk number	Risk description	Risk level (LOW=green, MODERATE=yellow, HIGH=red)
#1		
#2		

This table will be completed during the project lifetime with the identified exploitation risks and will be updated accordingly through this report's latter versions.

2.5. External exploitation limitations

Like in every project, there are always exploitation limitations that can be identified from the market trends and the general evolution of a specific market. They could often be considered as barriers to the penetration of the project results into the desired market segments.

3. Exploitation Plan for ALIGNED

The following sections will describe the exploitation plan for ALIGNED’s KER, analysing in detail each of the innovations, with their corresponding state-of-the-art overview and other technical information.

3.1. ALIGNED’s innovation and ambition

The ALIGNED project aims to improve the environmental performance of bio-based industrial processes in five sectors: **construction, woodworking, bio-based textiles, pulp and paper and bio-chemicals**. The goal is to provide an evidence-based approach for decision-making to improve the sustainability of present and future bio-based industries, specifically by improving modelling practices, filling data gaps, and developing new methods for the standardized assessment of bio-based products.

This will be achieved by **(1)** aligning LCA methodologies specifically to bio-based industries, covering both environmental and socio-economic aspects, **(2)** demonstrating this methodology on 6 technology development cases in the previously mentioned sectors in order to improve their environmental performance, and **(3)** inform, involve and empower all relevant stakeholders, enabling the efficient uptake of the methodology to support replication across Europe, for a sustainable growth of the bio-based sector in the region.

Currently, more and more bio-based products are being introduced to the market, leading to the growth of the sector. These products are often considered a better alternative to fossil-based products, however, measuring their environmental impact is a complicated task. This is why the use of LCA for bio-based products is recommended, hence this analysis to be carried out throughout the project’s lifetime will be useful to quantify the environmental impact and to implement low carbon and circular economy solutions [2].

Currently, LCA practices are not homogenous, which makes it hard to compare results between different sectors. This is why the ambition of the ALIGNED project is to produce novel modelling approaches to the environmental assessment of the bio-based products’ field, while ensuring applicability, relevance, and uptake for key stakeholders. By covering the previously mentioned sectors, the harmonisation of a very fragmented methodology landscape will be achieved via the use of advanced scientific models.

3.2. ALIGNED’s key exploitable results

The table below is a summarised version of the KER table for the ALIGNED project. This table can be found in the project SharePoint (restricted, only accessible to project partners), and it will function as a living document to be updated ideally every 6 months internally, up until the end of the project lifetime.

Table 2: ALIGNED's Key Exploitable Results (summarised)

KER No.	KER name	Lead	Participating partners	KER description	Partner contribution	KER market advantage
1	Methodological and modelling framework for improved LCA	AAU	AAU NTNU INSAT ANTW BTG	Partners listed, led by AAU, will develop a harmonised framework for LCA of bio-based products by reviewing existing methodologies and developing new ones. Use in sustainability assessment in consultancy, industry, and academia.	AAU: Methods for dynamic inventory carbon accounting, methods for considering constraints to biomass availability. NTNU: Methods to develop background prospective inventories. INSAT: Harmonised methodology for life cycle impact assessment for climate and biodiversity impacts. ANTW: Methodology for socio-economic assessment.	It is attractive to LCA practitioners working with bio-based products as it provides a one-stop-shop solution for guidance and support in performing the assessment of such products, that is currently difficult. Users are in sustainability consulting, industry, and academia.
2	Overview on EP in the five bio-based industrial sectors at EU level	BTG	AAU NTNU INSAT ANTW BTG	An overview of each of the five BBI sectors at EU level has been collected and reviewed via online consultations and workshops.	BTG (4) and NTNU (1) have drafted the original documents, the WP lead of each sector WP has provided input.	Strong knowledge on the EP in each sector gives a market advantage in consultancy activities.
3	Recommendations for LCA practitioners for the five bio-based industrial actors	AAU	SIE AAU NTNU INSAT ANTW BTG	The KER provides practical and synthetic guidance to LCA practitioners based on the application of the methodology developed in the project	Each partner will contribute from their respective case study and WP. As well as from WP1 (methodology) and WP7 (consultations and workshops)	The KER provides practical and synthetic guidance to LCA practitioners based on the application of the methodology developed in the project. It allows to see how the assessment can be used in practice and to avoid pitfalls and errors, as well to know the challenges in advance.
4	Recommendations for the five bio-based industrial sectors on how to improve their EP using the newly aligned LCA methodology	BTG	SIE AAU NTNU INSAT ANTW BTG	Recommendations for the five bio-based industrial sectors on how to improve their EP using the newly aligned LCA methodology, based on the work performed in multiple ALIGNED WPs.	Each partner will contribute from their respective sector WP as well as from WP1 (methodology) and WP7 (consultations and workshops)	N/A

3.3. External exploitation limitations

Among the market barriers identified in developing LCA for biobased solutions, are:

Immaturity of technologies involved [3] [4]

LCA studies tend to be retrospective, meaning that they rely on historical data. Many biobased materials are in the early stages of development, so there is limited knowledge on how they would integrate with existing technologies and infrastructure. This is why LCA for biobased materials relies often on assumptions and modelled data (instead of data collected from real processes). These assumptions make the results less certain when comparing them with real-life applications, which in turn also makes comparison among studies more difficult.

Carbon accounting [3]

Methodological freedom to account for biogenic carbon creates discrepancies in modelling approaches and methods used, impacting the outcome of results for bio-based products. This includes how biogenic carbon is accounted for.

Considering different perceptions of technology [4]

Dealing with different perceptions of technology and feedstock combinations, particularly in bioeconomy. The use of contrasting stakeholder perspectives on what can be considered bioeconomy technologies generates very different results because the goal and scope of the study depend on the stakeholder.

4. IP management methodology

The section below includes the methodologies and IP strategy that will be implemented for ALIGNED's KER. This is an initial approach, which will be further refined in future versions of this report.

4.1. Management of knowledge and foreground IPR

IP management is a very important matter since it ensures that results are protected in the most convenient possible way, while guaranteeing freedom to operate in potential market segments of interest, in the case of commercial results. Being one of the keys to the project's success, the background knowledge of each partner may be used to achieve the project's objectives.

The Exploitation Manager (in this case, SIE) is responsible for the management and the exploitation of Intellectual Property Rights (IPR). The role is defined to keep track of the partner's decisions on IP, as well as to manage efficiently the IP background to set a table of discussion within the consortium.

4.2. Foreground IP

The consortium agreement explains in detail how to ensure the protection of all intellectual property of the consortium. The IPR generated from a project's result will be the property of the partner that has developed it. Nonetheless, knowledge needed for the completion of the project must be shared among partners to ensure smooth collaboration between all parties.

Other results, such as publications, procedures and tools produced throughout the project will remain with their developing owners for exploitation. In the case of joint ownership, a joint ownership agreement is strongly recommended.

As stated in Annex 5 of the Grant Agreement under *Protection of results*:
"Beneficiaries which have received funding under the grant must adequately protect their results — for an appropriate period and with appropriate territorial coverage — if protection is possible and justified, taking into account all relevant considerations, including the prospects for commercial exploitation, the legitimate interests of the other beneficiaries and any other legitimate interests."

4.3. Background IP

The background knowledge of all the partners was identified prior to the Consortium Agreement. Background IP will remain with the originator partner and will continue to be updated throughout the project's duration. During ALIGNED's project lifetime, royalty-free access will be provided to all knowledge necessary to carry out the project activities, but once the project is over, access (if granted) must be managed by the owning partner under their conditions. The request for access must be made up to one year after the end of the action.

4.4. Ownership allocation

The basic rules to allocate the ownership of the project results have been set out in article 16 and annex 5 of the Grant Agreement and in section 8 of the Consortium Agreement which has been signed by all the partners participating in the project. In summary:

- ✓ The partner who generates the project results shall have the ownership.
- ✓ In case the results are co-generated by multiple partners, and it is impossible to establish the respective contribution of each partner or separate for the application, obtainment or maintenance of the protection, those partners who have participated in generating the results shall have joint ownership and a separate written agreement shall be signed to decide the allocation and terms of exercising ownership, and all relevant issues.
- ✓ Each of the joint owners shall be entitled to use (and sublicense to their respective entities under the same control) their jointly owned results for non-commercial research and teaching activities on a royalty-free basis, without requiring the consent of the other joint owners.
- ✓ Each of the joint owners shall be entitled to otherwise exploit the jointly owned results and will be able to grant non-exclusive licenses to third parties (without the right to sub-license), if the other joint owners are given: (a) at least 45 calendar days advance notice; and (b) fair and reasonable compensation. The joint owners shall agree on all protection measures and the division of related costs in advance.

The ownership allocation will be further confirmed in later stages of the project.

4.5. Transfer and licensing of results

Any party may transfer ownership of its results, including its share in a jointly owned result, following the procedures stated in the Grant Agreement Article 16.4 and annex 5, as long as it does not affect its obligations under said agreement. The beneficiary must ensure that their obligations under the agreement regarding the results are also passed on to the new owner to ensure compliance.

The transferring party must inform the other beneficiaries with access rights of the transfer at least 45 days in advance (or less if agreed in writing), unless agreed otherwise in writing for specifically identified third parties including affiliated entities or unless impossible under the applicable law.

Regarding licensing, the beneficiary may grant licenses to their results, including on an exclusive basis, as long as this does not affect compliance with their obligations. Exclusive licenses may be granted only if all the other beneficiaries concerned have waived their access rights.

Both beneficiaries seeking to transfer ownership of results or who plan to grant an exclusive license must formally notify the granting authority before it takes place. For this they must:

- ✓ Identify the specific results concerned.

- ✓ Describe in detail the new owner/licensee and the potential exploitation of the results.
- ✓ Include an assessment of the impact of this transfer/license.

The granting authority can object to the transfer/license within 60 days of receiving the notification. No transfer/licensing may take place in the following cases:

- ✓ Pending the granting authority decision.
- ✓ If the granting authority objects.
- ✓ Until the conditions are complied with (if the authority's objection comes with conditions).

4.6. IPR risks

For the consortium partners to exploit the project results freely and successfully after the end of the project, it is essential to foresee and identify any potential IP conflicts.

The assessment will be conducted and updated in the future version of the IPR management activities, which will be included in the future version of this report. The grid shown below will be used to identify if any conflict exists among the background IP owners and the partners who will be responsible for the exploitation.

As with any risk, the probability of it happening and the impact it can have on the project is considered to determine its level: minimal, low, moderate, high, or critical. The table below is a graphic representation of the risk classification to be used for the IP risks.

Table 3: Risk classification

		Likelihood of risk scenario				
		Unlikely	Rare	Possible	Probable	Almost certain
Severity of the impact for the project	Severe	Moderate	Moderate	High	Critical	Critical
	Large	Moderate	Moderate	Moderate	High	Critical
	Moderate	Low	Moderate	Moderate	Moderate	High
	Small	Minimal	Low	Moderate	Moderate	Moderate
	Insignificant	Minimal	Minimal	Low	Moderate	Moderate

As shown in Table 4, an IPR Risk Matrix will be used to detect any risks coming from partners' current activity or interests in certain IP asset protection.

Table 4: Example of IPR risk matrix

	Foreground Owner (partner A)	Foreground Owner (partner n)
Background Owner (partner A)	e.g.: same partner owns foreground and background.	...
Background Owner (partner n)	e.g.: different partners own foreground and background, and no agreements are in place to define ownership or potential conversations.	...

5. IP strategy for ALIGNED

ALIGNED’s IP background and foreground were updated at M6 of the project and will remain open to be updated throughout its entire duration. Specifically, the relevance of the IP will be checked and updated once a year.

5.1. Background IP

The IP background or background knowledge refers to all information relevant to a collaborative venture or open innovation project that should be defined by all partners at the beginning of the said project.

Even though the ALIGNED exploitable results will be obtained by taking as a basis already existing open-source tools and models, IP management is still a very relevant topic. The strategy and procedures for the IPR management will consider the basic principles set in the Grant and Consortium Agreement.

ALIGNED’s first mapping of background IP was done during the first months of the project, through an exploitation questionnaire sent to partners. This table will be updated when necessary if new relevant IP background is identified. The table below depicts both the background IP and the IP strategy as of M6.

Table 5: IP background and foreground of the KER identified in ALIGNED

KER Number	KER name	Lead partner	Participating partners	Background IP	IP owner	IP protection strategy
1	Methodological and modelling framework for improved LCA	AAU	AAU NTNU INSAT ANTW BTG	Every material to be used will be from open sources, so no IP background identified until this moment.	TBD.	Creative commons, to remain open source.
2	Overview on EP in the five bio-based industrial sectors at EU level	BTG	AAU NTNU INSAT ANTW BTG	N/A	TBD	Creative commons, to remain open source.
3	Recommendations for LCA practitioners for the five bio-based industrial actors	AAU	SIE AAU NTNU INSAT ANTW BTG	Every material to be used will be from open sources, so no IP background identified until this moment.	TBD	Creative commons, to remain open source.
4	Recommendations for the five bio-based industrial sectors on how to improve their EP using the newly aligned LCA methodology	BTG	SIE AAU NTNU INSAT ANTW BTG	N/A	TBD	Creative commons, to remain open source.

Regarding background IP, the intentions are to base all the work on open-source materials, meaning that at this moment, there would be no conflict with intellectual property used to base the results of the project.

5.2. Foreground IP

The IP protection strategy is also shown in the Table 5 and the intention that the partners have expressed during the first months of the project is for all the materials and frameworks developed in the project to be protected through a creative commons license, remaining open-source, with the intention that they are further used for research, academia and standardisation after the end of the project.

However, the IP protection strategy is still an important step to consider, even when speaking about open-source materials. The final decision on the protection strategy for the results and the corresponding license will be clearer in the following updates of this report.

5.3. IPR risks

Potential risks can arise when deciding the IP ownership of project results, this is why it is essential to identify potential risks beforehand, as well as to define the mitigation measures necessary in case said risk becomes a reality.

below is the IPR risk table for the ALIGNED project.

Table 6: ALIGNED's IPR risk matrix

		IP foreground												
		Partners	AAU	NTNU	INSAT	ANTW	BTG	SIE	OLEON	FOR	UTEX	CENT	KING	BLOOM
IP background	AAU													
	NTNU													
	INSAT													
	ANTW													
	BTG													
	SIE													
	OLEON													
	FOR													
	UTEX													
	CENT													
	KING													
	BLOOM													

As specified in Table 6, the dark green colour means that the risk is minimal and as shown in the table above, all relationships where a partner produces IP foreground using their own IP background are marked as a minimal risk. Potential conflicts may arise in cases where the background and foreground owner are not the same, in which case the risk will be classified by the consortium according to Table 3 when identified.

Until the submission of this report, the potential IP risks identified (marked in yellow in the table) were relating to the concern about keeping safe the confidential raw data to be used to perform and model the LCA analysis and frameworks. This is why, in the context of the use of this information after the project's lifetime, SIE will oversee this risk and will define with the partners the strategy to protect this information. The direct mitigation measure is to follow up every 6 months to ensure the strategy is up to date, and SIE will guide the involved partners (OLEON, FOR, BLOOM, KING, CENT and UTEX) in the definition of the availability for sharing and the conditions for doing so.

However, it is still too early to provide a definite strategy for the IP protection of the results, since during the first months of the project there are many uncertainties on the shape the results will take.

As mentioned previously, the IP strategy will be updated every 6 months via the General Assembly meetings and exploitation workshops to ensure the prompt identification of the risks and definition of mitigation measures.

The later versions of this report (due M18 and M36, specifically) will contain further details on this strategy.

6. Conclusions

The effective management of intellectual property is a critical part of the development of new technologies and services, and it supports organisations in remaining competitive. By adopting best practices in IP management, such as conducting thorough IP searches, drafting solid licensing agreements, and developing robust infringement monitoring strategies, organisations can maximise the value of their IP while mitigating the risk of legal disputes and reputational damage.

For the case of the ALIGNED results, commercialisation is not foreseen as a potential exploitation route, and the partners have confirmed their wish to generate open-source results. However, this does not mean that the results should not be protected.

Copyleft licenses or permissive copyright (like the creative commons licenses) allow the author to protect their creations by limiting their use, for example, to stop others from commercialising their intellectual property. When speaking about open-source results, the most important part for many creators/authors is that their works remain open-source (free of cost) for as long as possible. If no IP protection is sought, someone else could take the work and commercialise it or make it privative (the work itself or any derivative works), which would somehow put a stop to the chain of open-source and open-science development for that work.

As previously mentioned, it is still too early into the project to produce a definite exploitation and IP management strategy for the ALIGNED results, this is why two subsequent reports will provide the update of said strategies, specifically due **D7.5 – Intermediate report on the exploitation and IPR plan (M18)**, and **D7.6 – Final report on the exploitation and IP plan (M36)**.

References

- [1] European IP Helpdesk, “Your Guide to Intellectual Property Management in Horizon Europe,” 2022.
- [2] N. C. Max Sonnen, “LCA for biobased materials”.
- [3] Ecomatters, “LCA for biobased materials”.
- [4] N. H. Nishtha Talwar, “The limitations of bioeconomy LCA studies for understanding the transition to sustainable bioeconomy,” *The International Journal of Life Cycle Assessment*, no. 27, pp. 680-703, 2022.
- [5] F. J. Aguilar, *Scanning the Business Environment*, New York: Macmillan, 1967.
- [6] D. M. T. Nitank Rastogi, “PESTLE Technique - A tool to identify external risks in construction projects,” *International Research Journal of Engineering and Technology*, vol. 03, no. 01, 2016.
- [7] C. Kothari, *Research Methodology: Methods and Technique*, 1985.
- [8] M. Porter, “How Competitive Forces Shape Strategy,” *Harvard Business Review*, 1979.