European Lighthouse to Manifest Trustworthy and Green AI

Activities plan

Deliverable D7.1

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Distribution List

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List of Abbreviations & Acronyms

AI	:	Artificial intelligence
CEDC	:	Communication, Engagement, Dissemination and Cooperation
CRVR	:	Common Research Vision and Roadmap
DMP	:	Data Management Plan
EDIHs	:	European Digital Innovation Hubs
KER	:	Key Exploitable Result
KPI	:	Key Performance Indicator
SSRAF	:	Safety and Security Risk Assessment Framework
TES	:	Third-party Exchange Scheme
TIS	:	Third-party Innovation Scheme
WP	:	Work Package

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Executive Summary

The current deliverable “D7.1 - Activities Plan” outlines the strategic approach to achieve the objectives of the WP7. Within this Work Package, the focus is set on supporting innovation, contributing to policy development, facilitating standardization efforts, coordinating with EU ecosystems, and ensuring the sustainability of the ENFIELD network beyond the project's duration.

Key aspects of the plan include fostering innovation through tailored workshops, coaching, and collaboration sessions. Additionally, the project aims to engage policymakers by developing a White Paper on Green and Trustworthy AI, offering insights and recommendations to shape AI policies at the European level.

Moreover, the project is committed to identifying and capitalizing on exploitation pathways for ENFIELD outcomes, conducting market research, analysing business models, and ensuring the wider adoption of project results.

Furthermore, efforts extend to standardization, certification, and regulatory compliance, where the project actively engages with standardization bodies and contributes to the development of the Artificial Intelligence Act to uphold safety, security, and interoperability standards.

Lastly, the project is dedicated to ensuring the sustainability of the ENFIELD network post-project. Through extension plans, exploration of funding mechanisms, and the potential establishment of a European Interest Group (EEIG), efforts aim to foster ongoing collaboration and knowledge exchange among stakeholders.

In summary, the "Activities Plan" for WP7 represents a comprehensive strategy to drive innovation, shape policy, foster collaboration, and ensure the long-term impact of the ENFIELD project within the AI landscape.

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1. Introduction

The objective of this deliverable is to outline the activity plans for advancing AI innovation, policy dialogues, standardization, certification, regulation, and exploitation pathways within the ENFIELD project. The project's aim is to foster a robust innovation paradigm through workshops, while concurrently engaging in proactive policy dialogues to shape the regulatory landscape, notably contributing to the Artificial Intelligence Act. The deliverable outlines the approaches for standardization, certification, and regulation, alongside a detailed exploitation strategy plan aimed at navigating AI market dynamics effectively. Through the identification of key exploitable results, market analysis, intellectual property management, and the establishment of a sustained network, ENFIELD aims to maximize its impact and ensure long-term success.

1.1 Structure of the document

The document is structured as follows:

- **Section 1**: this section outlines the general structure of the deliverable.
- **Section 2**: this section entails the innovation paradigm which supports the innovative outcomes of the project.
- **Section 3**: this section is dedicated to the contribution of the ENFIELD project the European AI policies, describing how the project will work on providing recommendations to policy makers through the creation of a White Paper on Green and Trustworthy AI. Key activities include research, stakeholder engagement, and synthesizing actionable policy recommendations, aiming to influence European AI policy development.
- **Section 4**: this section includes the methodological approach to standardization, certification and regulation aspects of the Enfield project.
- **Section 5**: this section delineates the exploitation and business strategy, detailing its components and the potential exploitation models for the ENFIELD project, as well as the paths for exploitation that each partner may pursue.

1.2 Structure of the Work Package

1.2.1 Objectives

The objectives of ENFIELD encompass a multifaceted approach aimed at fostering innovation, driving policy development, and ensuring sustainable growth within the EU landscape. ENFIELD endeavours to support the emergence of ground breaking innovations by nurturing and promoting advancements stemming from the internal project activities. Additionally, it seems to play an integral role in shaping EU policy frameworks.

The WP7 activities are mainly centred around 5 objectives:

1. Supporting innovation originating from ENFIELD activities;
2. Contributing to Policy development at European Level;
3. Contributing to standardization, certification, and regulation e.g. AI Act
4. Coordinating with major EU ecosystems and marketplaces that support AI innovation and exploitation
5. After the end of the project, ensuring a sustained ENFIELD network.

This section outlines the key milestones for the project completion in relation to WP7 and identifies the critical risks that may impact WP7 activities. By defining these milestones and risks upfront, we can proactively manage and mitigate challenges throughout the project lifetime.

Milestone nr.	Milestone name	WP nr.	Lead	Means of verification	Due date
1	ENFIELD start	WP4, WP1, **WP7**, WP5, WP6, WP3, WP2	*NTNU*	*(1) management procedures set, kick-off meeting held; (2) website and social network profiles created, CEDC delivered (D6.1); (3) Open Calls prepared (D5.1), DMP released (D1.2).*	M6
2	ENFIELD research initial	WP4, **WP7**, WP5, WP6, WP3, WP2	*NTNU*	*(1) a set of TES and TIS calls finalized (D5.2); (2) a set of co-creation workshops and progress in research achieved (D2.2, D3.2); (3) released initial versions of the CRVR (D4.2) and the SSRAF (D4.3); (4) CEDC intermediate report delivered including the White Paper (D7.2)*	M18
4	ENFIELD research	**WP7**, WP3, WP2	*NTNU*	*(1) Research activities completed by TIS and TES; (2) Dissemination KPIs achieved; (3) Delivery of 75+ innovative solutions in the context of pillars and verticals*	M34
5	ENFIELD finalization	WP4, WP1, **WP7**, WP5, WP6, WP3, WP2	*NTNU*	*(1) ENFIELD achieved objectives, milestones, specific KPIs and submitted all deliverables; (2) ENFIELD network continuation confirmed (D7.3); (3) Final versions of CRVR, SSRAF, the White Paper and the Ethics and Gender Framework submitted*	*M36*

Table 1. Milestones related to WP7

Description of risk (likelihood / severity)	WPs involved	Proposed risk-mitigation measures
R4: Overall Outreach-Low participation is planned events (Low / Low)	WP4, WP6, WP7	*(1) events (hackathons, summer schools, workshops, and conference) location and/or date may be changed; (2) intensified information spread on media channels; (3) engagement of regional and national networks and international alliances*
R8: Policy, regulatory and standardization	WP7	*Mutual development: recommendations will be developed and agreed upon with the linked stakeholders to increase impact and relevance.*

recommendations not taken up (High / Medium)		*Networking: As standardization procedures are time intensive and require different viewpoints all partners will use networks to increase visibility, prior to issuing recommendations, or starting the implementation. Coordination with CENCELEC and ISO communities in the context of linked initiatives*
R9 Sustained ENFIELD Network- ENFIELD fails to engage a critical stakeholder mass (Medium / Medium)	WP7	*(1) present the ENFIELD message to a widerrange of AIlabsin Europe, both within research and industry organizations; (2) demonstrate benefits for the research and industry entities participating in ENFIELD and beyond; (3) preparing a set of different engagement and business models suitable for a wider range of participants*

Table 2. Critical risks for implementation

In relation with the objectives of WP7, the project has set specific KPIs (Table 3. WP7 objectives and related KPIs) in order to measure the effectiveness of the activities carried out during the project. The goal is to promote and cultivate innovative mechanisms to facilitate the robust exploitation of emerging ideas stemming from the activities within the ENFIELD network. This entails fostering dynamic collaborations between research entities and industry stakeholders, thereby creating fertile ground for the cultivation of pioneering concepts. Additionally, the project endeavours to make **significant contributions to the establishment of standards, certifications, and regulatory frameworks as well as policy-making**, thereby enhancing the credibility and trustworthiness of AI technologies. Moreover, forging robust partnerships with European Digital Innovation Hubs (EDIHs) and incubators will provide invaluable support in nurturing nascent innovations, fostering their growth and scalability. By engaging with EU platforms and marketplaces, the project aims to amplify the visibility and accessibility of its outcomes, ensuring their widespread adoption and usability. Furthermore, an ongoing commitment to the development and enrichment of the innovation ecosystem remains paramount, with the overarching objective of fostering socio-economic benefits that resonate across European communities and businesses. Through concerted efforts, the project seeks to contribute to the objectives of the EU regarding Artificial Intelligence, fostering a future defined by innovation.

To effectively achieve these objectives, MAGGIOLI will organize **monthly meetings of WP7**, ensuring coordinated efforts among partners and fostering smooth collaboration. These regular meetings will serve as crucial activity to foster participation and facilitate communication with the consortium, as well as for aligning strategies, addressing challenges, and collaborate towards the shared goals of the ENFIELD project.

Objective nr.	Description	KPI
#24	Nº of innovation workshops	*> 2 workshops*
#25	Nº of coaching and mentoring activities (recommendations, expert advice)	*> 30 recommendations*

#26	Nº of policy recommendations prepared	*> 9 recommendations*
#27	Nº of contributions to standards prepared	*> 6 recommendations*
#29	Sustained network	*1*
#33	Nº of policy makers involved	*> 40*
#34	Nº of strategic documents prepared - **White Paper**	*> 4*

Table 3. WP7 objectives and related KPIs

1.2.2 Organizational structure

WP7 - Innovation and Exploitation work package is led by MAGGIOLI and supported by the whole ENFIELD Consortium. The tasks of WP7 and their corresponding deliverables are outlined below.

Task nr.	Task Name	Lead	Start	End	Involved Partners
T7.1	Innovation paradigm	INOVA+	M7	M36	INOVA+(L), all
T7.2	Policy dialogues	MAGGIOLI	M1	M36	MAGGIOLI(L), NTNU, INESC TEC, IMT, UON, TUC, UCM
T7.3	Exploitation pathways	MAGGIOLI	M7	M36	MAGGIOLI(L), ISK, EDP CNET, UCM
T7.4	Standardization certification and regulation	MAGGIOLI	M1	M36	MAGGIOLI(L), NTNU, INESC TEC, IMT, DTI, TUC, POLIMI, ESF
T7.5	Sustained ENFIELD Network	MAGGIOLI	M7	M36	MAGGIOLI(L), NTNU, EDP CNET

Table 4. Tasks list

Three official **deliverables** are associated with the work package, listed in the table below.

Deliverable nr.	Deliverable name	Lead	Type	Dissemination level	Due date
D7.1	Activities plan	MAGGIOLI	*R*[1]	*PU - Public*	*M6*
D7.2	Report on innovation and exploitation 1	MAGGIOLI	*R*	*SEN – Sensitive*	*M18*
D7.3	Report on innovation and exploitation 2	MAGGIOLI	*R*	*SEN – Sensitive*	*M36*

Table 5. Deliverable list

[1] Document, report

1.2.3 Relation with other Work Packages

WP7 collaborates closely with WP2, WP3, and WP4 to oversee project tasks progression and gather results, which are then translated into project outputs for various purposes such as innovation, regulation, standardization, certification, policy-making, and exploitation activities. Additionally, it maintains a close collaboration with WP6 for dissemination efforts. Notably, tasks like T6.4 and T6.6, spearheaded by MAGGIOLI, hold particular collaboration significance for WP7 as they aim to bolster the ENFIELD network by involving regional, national, and EU projects, EDIHs incubators, and other organizations. This network is deemed essential for the endeavours undertaken within WP7.

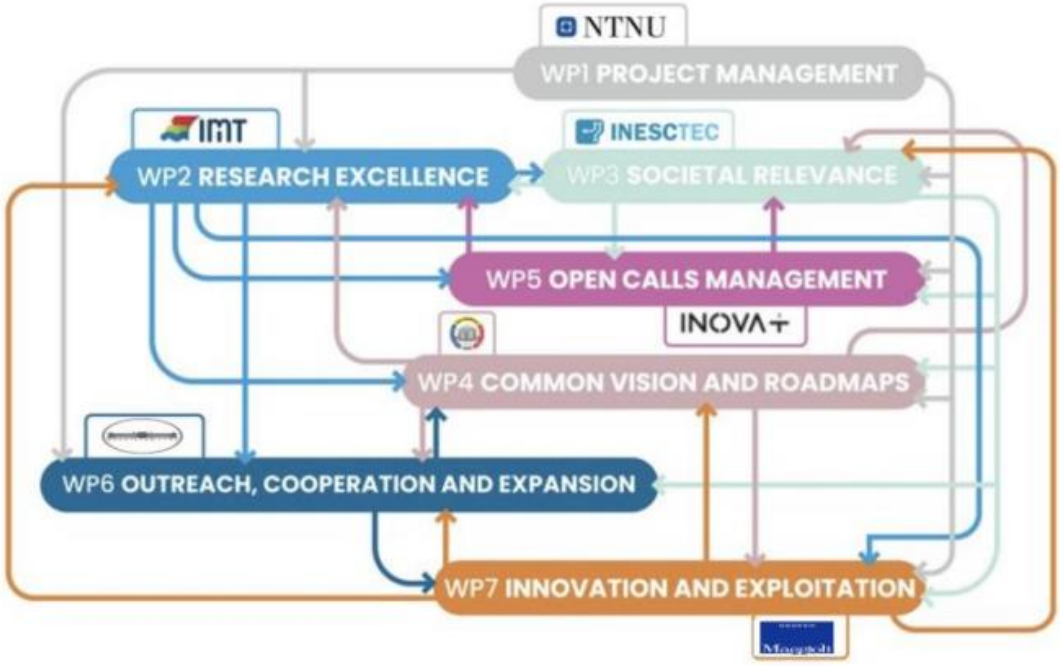

Figure 1. ENFIELD work plan and interdependencies

Collectively, WP6 and WP7 play pivotal roles in generating enduring and long-lasting impact. These work packages facilitate the dissemination of information, interaction with specific stakeholder demographics, cooperation with pertinent projects and research endeavours, formulation of strategies for sustained ENFIELD network involvement beyond the project's funding duration, and guarantee the continued utilization and integration of ENFIELD project outcomes beyond the end of the project as well. Additionally, WP7 will produce strategic document in from of White papers. The exploitation and extension arm of CRVR (Common Research Vision and Roadmap) will rely on inputs from WP7 to provide plans and models for ENFIELD sustained network, counting on the collaboration with providers of required resources and infrastructures. It is essential to underline that the outcomes of continuous monitoring and analysis of the markets will be beneficial and act as a feeder to the dissemination and communication activities carried out in WP6, as they render help in better defining the target groups of the project and their core characteristics.

2. Innovation paradigm

This section is dedicated to Task 7.1 – Innovation Paradigm that aims at supporting innovation coming out of ENFIELD activities, including those emerging from the intervention and collaboration with the third parties selected through the Open Calls. To achieve this, the task entails the organization of Innovation Workshops and the provision of coaching/mentoring to the beneficiaries of the Third-Party Innovation Scheme Open Call. The task is led by **INOVA+** and will benefit from the participation of all ENFIELD members, who will contribute with their competencies, multidisciplinary and inter-sectoral approaches in regards to innovation.

2.1 Innovation Workshops

Two Innovation Workshops will be organised and are planned to occur, the first at Month 18 (February 2025), and the second at Month 30 (February 2026) of the project. It is expected that each event gathers about 50 participants.

The Innovation Workshops are targeted to the selected participants from the project Open Calls, particularly from TIS, but also open to participants from TES. Besides, industry partners and other players, such as DIHs and incubators are expected to be engaged in these workshops. The participation in these events will be subject to invitation from the consortium.

These events intend to provide participants with information about international and national initiatives that can be useful in leveraging their research results, as well as available funding opportunities to pursue their research endeavours. In addition, these events shall ignite and foster collaboration among participants beyond the scope of the events.

The programme of the Innovation Workshops will be defined collaboratively within the ENFIELD consortium and shall consider the outcomes and results from the collaboration with the third parties (i.e., demos, novel methods…). The screening of these outcomes and results will support the definition of the workshops sessions, including hands-on activities, as well as the identification of the moderators and speakers. When relevant, external speakers will be invited to the workshop.

At the end of each workshop, a brief report will be elaborated to describe the interactions and the innovation routes discussed (and agreed) between participants. It is expected that the findings of these innovation workshops can influence and support the formulation of policy recommendations (Task 7.2), the definition of the exploitation pathways (Task 7.3) and the sustainability of the ENFIELD network (Task 7.5).

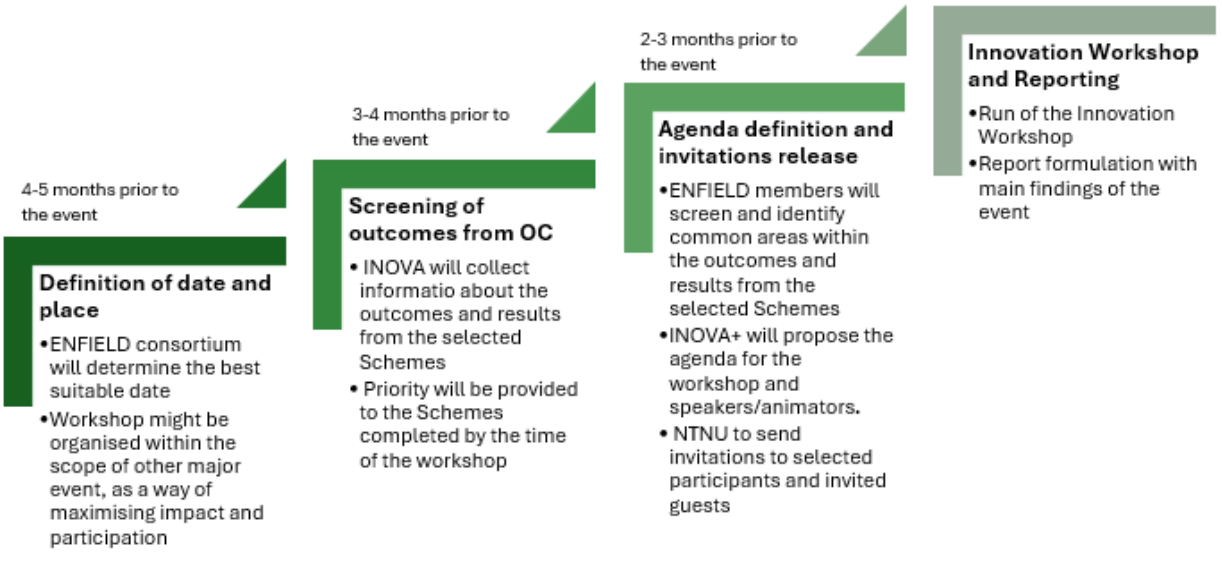

Figure 2 - Timeline for planning the Innovation Workshops

2.2 Coaching and Mentoring

The Coaching and Mentoring will be provided to the selected participants from the project Open Calls, particularly from TIS, to ensure the greatest scientific outcomes. ENFIELD members will actively contribute by leveraging their diverse competencies, employing multidisciplinary and inter-sectoral approaches to foster innovation expansion. Drawing upon their diverse competencies in various subjects, they will provide individually tailored coaching and mentoring to third parties.

For each third-party project resulting from TIS, two mentors will be assigned from the ENFIELD pool of experts. Regular digital meetings will be scheduled to ensure effective communication and support. The assigned mentors will provide technical support, including guidance thought the technical implementation, provide expertise for solving technical challenges and support the development of solutions that are the beyond state-of-the-art.

One coach will be allocated to each TIS Project, and if deemed beneficial, also for applicants selected in the TES. Coaches will have a more generic scientific-technical and business expertise, enabling them to provide comprehensive support tailored to the specific needs of each project.

Overall, ENFIELD goal is to engage more than 25 individual entities (start-ups, SMEs and R&D intensive establishments) in coaching/mentoring activities and to provide more than 30 recommendations or expert advice to boost the EU innovation ecosystem.

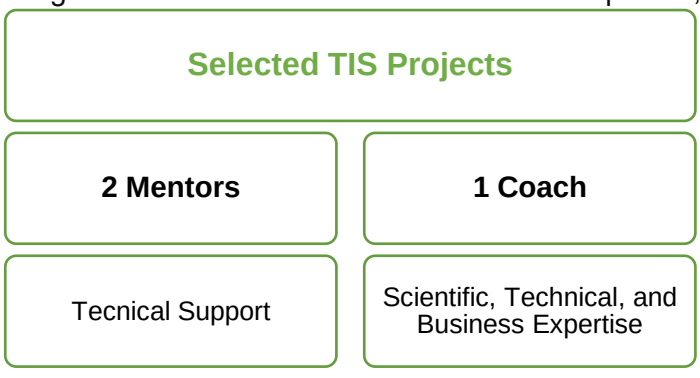

Figure 3. Coaching and Mentoring approach for each TIS project

3. Policy dialogues

This section outlines the strategic plan for T7.2 – Policy dialogues, which is dedicated to contributing to policy development at the European level within the framework of the ENFIELD project. The primary objective of this task is to **provide recommendations to policymakers** on national policies and international cooperation. To achieve this goal, the task will produce a comprehensive White Paper on Green and Trustworthy AI, which will serve as a guiding document for policymakers and stakeholders. Key activities within this task include conducting thorough research and analysis, engaging with relevant stakeholders through dedicated workshops, and synthesizing findings into actionable recommendations for policymakers. Through these activities, the consortium seeks to leverage the expertise and insights gained within the ENFIELD project to contribute meaningfully to the development of AI policies at the European level.

The primary targets for ENFIELD's policy recommendations encompass **European and international bodies**, alongside **policy and regulatory authorities**. Engaging with these stakeholders is crucial to gain visibility, input, and establish collaborative links beneficial to all parties involved. Through its core outcomes - the *Common Vision Research and Roadmap* (CRVR*)*, the *Safety and Security Risk Assessment Framework* (SSRAF), and the *White Paper* - ENFIELD aims to contribute to the agendas of European and international bodies, while also seeking recommendations to enhance its visibility and outreach. Additionally, ENFIELD will actively engage with policy and regulatory authorities to contribute to the development of harmonized rules on AI and European standardization efforts, ensuring compliance with regulations and laws. Through open dialogue and discussions centred around ENFIELD's core outcomes, the consortium will provide inputs to both national and international regulatory and policy agendas.

3.1 Methodology and action plan

The aim is to actively involve project partners in formulating policy recommendations based on project outcomes and deliverables, enhancing the project's impact and facilitating the creation of policy recommendations in-form of a White Paper.
This collaborative approach ensures that the insights and findings from the project are translated into actionable EU policy recommendations that address real-world challenges posed by the emergence and evolution of AI. By engaging editors, we harness diverse perspectives and expertise, enriching the quality and relevance of the proposed policies for broader societal benefit.

Towards this objective, an action plan has been created and summarized in Figure 3. The action plan is further described in the following steps:

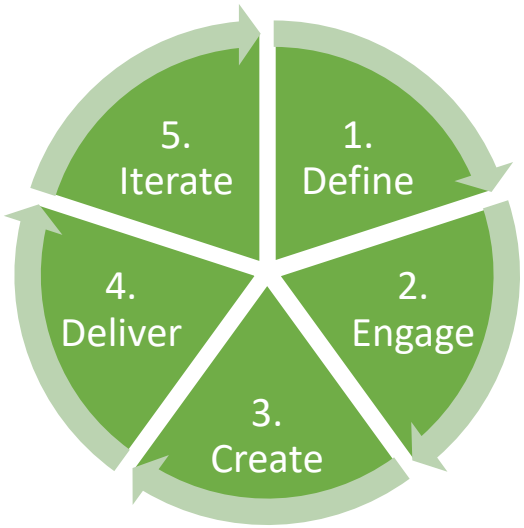

Figure 4. Policy recommendation creation process

1. Define **Scope and Criteria**: outline the scope of the task, emphasizing the objective of collecting technical contributions with policy-making potential. Define criteria for selecting project deliverables to study, excluding any that lack policy-making potential such as those related to project management (e.g., WP1: Project Management). This step ensures a focused and targeted approach to identifying relevant policy recommendations within ENFIELD deliverables and results.
2. **Engage** partners: reach out to the editor or co-editor of each selected deliverable to identify potential policy recommendations arising from the work performed and the results. This contact will facilitate the integration of research findings into actionable policy suggestions. Particular emphasis will be put on the following aspects of this phase:
   - Pose targeted questions: present specific inquiries to the editors to guide the discussion towards policy implications. The topics should include questions referred to the applicability of the specific deliverable(s) to policymaking and the usefulness for policy makers. For example, if it could be used for future Call for Proposals in the various funding programmes of the European Commission (Horizon Europe, Digital Europe, etc.) as well as relevant regulations such as the GDPR or the AI Act. If applicable, the next step is to identify which findings within the deliverable are most pertinent to policymakers and request a concise summary for each significant finding.
   - Encourage thoughtful responses: emphasize the importance of clear and concise responses, highlighting actionable insights that could influence policy decisions. Partners should provide succinct summaries of findings and articulate key messages for effective communication to policymakers.
   - Document responses: Systematically document partners' responses to the posed questions, organizing them for easy reference and analysis. Synthesize the collected information to distil key policy recommendations from across all deliverables.

3. **Creation** of the recommendation: Integrate the identified policy recommendations into relevant deliverables, ensuring alignment with the overarching goals and objectives of the project. Particular attention will be paid to clarity and coherence in presenting recommendations to maximize their impact on policymakers. Consortium partners who have specific expertise on the recommendation topic will be asked for feedback before the delivery to the stakeholders.
4. **Delivery** of the recommendation: ENFIELD's policy recommendations will be presented through a White Paper on Green and Trustworthy AI. This paper will provide an overview of research frontiers and potential investment opportunities, as well as strategies for fostering a digital ecosystem, shaping an enabling policy environment, building human capacity, and preparing for labour market transformation. Additionally, at least two dedicated workshops will be organized with stakeholders to maximize impact and disseminate the results of ENFIELD's and contribute to the EU policy development.
5. Iterate, refine and foster collaboration: establish a collaborative dynamic with editors, encouraging open dialogue and mutual engagement in the policy recommendation process. Facilitate an environment where project partners feel empowered to contribute valuable insights and perspectives. Continuously refine the engagement process based on feedback and lessons learned from partners' responses. Iterate on the approach to enhance effectiveness and foster greater collaboration between researchers and policymakers.

3.2 Contribution to the Artificial Intelligence Act

The use of AI in the EU is regulated by the world's first comprehensive AI Act, which as a part of Digital Strategy regulates AI and ensures suitable conditions for the development of AI and prudent use of this innovative technology[2]. The AI act aims to provide AI developers, deployers and users with clear requirements and obligations regarding specific uses of AI. At the same time, the regulation seeks to reduce administrative and financial burdens for business, in particular small and medium-sized enterprises. The AI act aims to instil confidence among Europeans regarding the reliability of AI technologies. Although many AI systems carry minimal or negligible risks and can effectively tackle various societal issues, certain systems introduce potential hazards that require attention to prevent unfavourable consequences. One such concern arises from the opacity of AI decision-making processes, making it challenging to discern the rationale behind a decision or action taken by an AI system. Consequently, this lack of transparency may hinder the evaluation of instances where

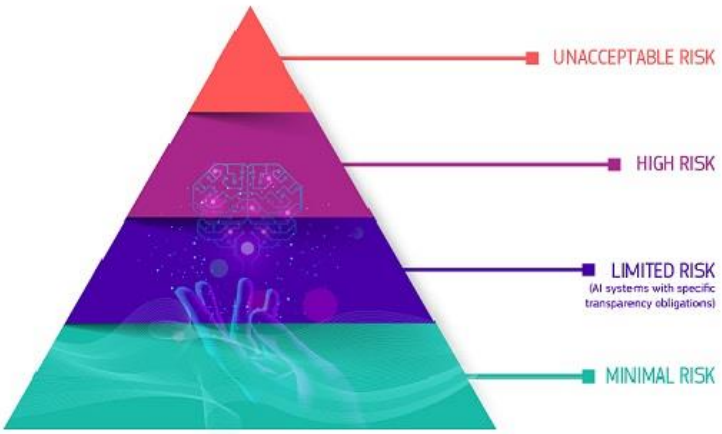

Figure 5. Four levels of risk in AI (EU Commission)

[2] https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence

Individuals may have been unjustly stacked at a disadvantage, such as in employment selection processes or when applying for public assistance programs.

Currently the regulatory framework has defined 4 levels of risk in AI[3]: Unacceptable risk, High risk, Limited risk and Minimal risk. Any AI systems deemed to pose a definite risk to the safety, well-being, and rights of individuals will be prohibited, ranging from government-implemented social scoring mechanisms to toys featuring voice assistants that promote hazardous actions.

The tasks within the Enfield Project will contribute in shaping the development of the Artificial Intelligence Act. This WPs will involve monitoring the regulatory progress, gathering individual inputs, and compiling comprehensive feedback to be submitted to the European Commission. Additionally, active engagement in events and workshops related to the Artificial Intelligence Act will be a part of the task activities.

Contribution to policy-making and decision-making processes is an integral aspect of ENFIELD. The consortium will actively participate in public consultations and provide feedback on policy initiatives related to the European Commission. Specifically, it will offer insights for the development of the Artificial Intelligence Act, produce a White Paper, and contribute to the standardization of AI in Europe. Furthermore, ENFIELD will also provide input to national regulatory and policy agendas, such as Hungary's AI strategy and Finland's age of AI, through open dialogue on the outcomes of ENFIELD.

The **White Paper** will not only offer insights into the current landscape of AI research and development but will also provide an outlook on future research frontiers and potential investment opportunities. Furthermore, it will propose measures aimed at fostering a digital ecosystem conducive to the advancement of AI technologies, shaping an enabling policy environment, building human capacity, and preparing for the transformation of the labour market in the era of AI.

[3] https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai

4. Standardization, certification and regulation

4.1 Methodology and approach

Standardization and Certification are important parts of the ENFIELD project, with the aim of advancing project discoveries towards safety and **security of AI**, **Big Data**, **knowledge representation** and **ontologies**, **telecommunications** related to AI, performance testing based on **use cases**, **AI libraries** and **interoperability requirements** as well as **trustworthiness of AI**. ENFIELD's plan for standardization can be succinctly outlined as follows:

1. **Evaluate the alignment of the ENFIELD framework** and assess the compliance with existing standardization efforts and recognize the additional value ENFIELD brings to relevant standards.
2. **Develop a strategy** for disseminating the ENFIELD solution to existing standards and promote the adoption of the approach into established or emerging standards, as well as certification methodologies for Artificial Intelligence.
3. **Engage and involve stakeholders** from standardization and certification bodies to contribute their expertise within the consortium.
4. **Structure the ENFIELD proposal** to align with actions related to green and trustworthy regulations and certification approaches for Artificial Intelligence, while establishing connections with active regulatory bodies and certification entities to gather feedback.
5. **Contribute to the evolution of relevant standards**, thereby advancing the outcomes of ENFIELD's innovation activities.

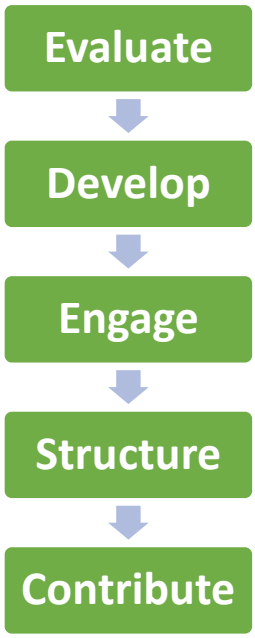

Figure 6. Plan for standardization

To achieve these objectives, a preliminary methodology has been outlined for ENFIELD. Naturally, this methodology will evolve over the course of the project. The initial standardization methodology encompasses several key actions:

- Identification of Standards utilized within the consortium: ENFIELD comprises a diverse consortium consisting of academic partners, SMEs, and industrial partners. This action focuses on identifying existing standards that consortium partners adhere to.
- Identification of ENFIELD technologies with potential standardization significance: ENFIELD's proposition involves fundamental research in the scientific pillars of Adaptive, Green, Human-Centric, and Trustworthy AI that are new, strategic and of paramount importance to successful AI development. This action aims to identify technologies/tools developed and provided by various partners that may be of interest for standardization.
- Identification of targeted bodies, working groups, technical committees, initiatives, etc.: various bodies, working groups, and initiatives may express interest in ENFIELD's outcomes. Identifying these entities is essential for disseminating the project and gathering feedback.

- Identification of ENFIELD's potential stakeholders: this entails identifying and documenting all project stakeholders, including their interests, impact, and potential influences on the project, whether organizational, geographical, or related to involvement in various project phases or outcomes.
- Monitoring the standardization landscape: the standardization landscape is dynamic, with ongoing innovation and distribution of new technologies, processes, approaches, products, and services. Regular research into the standardization landscape is necessary to stay abreast of the latest developments in relevant domains. The goal is to find out what technology reports, specifications and standards have been published, are in the process of being published or are being investigated/studied for potential standardisation. This approach can be followed in various sectors such as:
    - European Countries
    - Business sectors
    - New technologies
    - Legislation and regulation
- Coordinating contributions/interactions with relevant standardization initiatives: once a targeted standard and a working group initiative are identified, the nature of interaction with these entities must be defined, ranging from disseminating ENFIELD's outcomes to contributing to specific sections of standards.
- Organization of standardization workshops: a standardization workshop serves an exploratory function aimed at fostering the creation and exchange of technical knowledge in alignment with established standards, while also providing valuable input to ongoing standardization initiatives. Within the framework of ENFIELD, such workshops are instrumental in identifying potential standardization areas and pinpointing the necessary steps to initiate standardization activities. Moreover, these workshops offer insights into the importance of specific topics and serve as a platform for disseminating information about pertinent standards. For ENFIELD, the plan is to organize at least two standardization workshops before the end of the project.

4.2 Identification of the main standards related to ENFIELD

The starting point for Standardization and Certification related activities for ENFIELD involves identifying pertinent initiatives and bodies related to AI systems. To this end, a shared spreadsheet has been created in the project's repository and will be continually updated throughout the project's duration to consolidate relevant information from all consortium members.

The information to be collected includes:

- *Standardization bodies*: bodies relevant to the ENFIELD project, with members indicating their affiliation where applicable.
- *Standards*: relevant standards for ENFIELD to adhere to, as well as those the project could potentially contribute to or enhance.
- *Organization of events*: details of events organized by the ENFIELD consortium, including workshops and other relevant gatherings.
- *Participation in events*: events that the ENFIELD consortium has participated in or plans to participate in, which are pertinent to the project and/or promote its objectives.

- *Publications*: information about publications contributing to the communication of the project's outcomes to standardization, regulation, and/or certification communities.
- *Standardization activities*: information regarding any activities in which ENFIELD partners have participated, contributing to the promotion of standardization of the project's outcomes.
- *Certification Bodies*: information concerning certification bodies/initiatives that may be relevant to the ENFIELD project.
- *Regulation Bodies*: information related to bodies/initiatives associated with regulations that may be relevant to ENFIELD.

In more detail, the project has already identified some relevant bodies (such as the International Data Space Association, IDSA) and standards on which the contributions will be focused: ISO/IEC JTC1/SC42 Artificial intelligence, IEEE, ITU-T and CEN CENELEC by joining, e.g., the following Working Groups of IEEE (IEEE P7000, IEEE P7002, IEEE P7003, IEEE P7006, IEEE P7007), ETSI GR SAI), CEN-CENELEC JTC21 and the technical committee ISO/IEC JTC1/SC 42 which considers the entire ecosystem in which AI systems are developed and deployed.

This information will be instrumental throughout the project's lifespan in identifying potential standardization, regulation, and/or certification activities that could be influenced by ENFIELD's outcomes.

The outcomes of these activities, including a list of the most relevant bodies, standards and certifications will be reported in the next deliverable “D7.2 - Report on innovation and exploitation 1”.

5. Exploitation pathways

This chapter dives into the details of the strategic planning to be undertaken for the exploitation of the ENFIELD project's outcomes. Exploitation measures within the project encompass a multifaceted approach aimed at maximizing the impact of its research and innovations across various domains.

The project serves as a catalyst for a new ecosystem, introducing innovative paradigms that span foundational research, strategic domain advancements, and the formulation of long-term visions and strategies. Key objectives include **fostering the development of foundational research** through the creation of scientific publications, novel algorithms, models, and tools. Additionally, the project aims to benchmark and further advance these scientific outcomes in domains strategically relevant to Europe, ensuring their **practical applicability and impact**.

Furthermore, the exploitation strategy extends beyond immediate research outcomes to encompass broader objectives such as the reinforcement of networking, establishment of new partnerships, and the sustainability of the ENFIELD network beyond the project's lifetime. This holistic approach emphasizes the project's commitment to long-term impact and sustainability within the European AI landscape.

Central to the execution of the exploitation strategy is T7.3, which supports the creation of detailed exploitation plans tailored to each partner's business and research strategy. These plans are aligned with respective market areas and complemented by wider exploitation opportunities facilitated by the consortium. A critical component of the planning process involves conducting an **in-depth market analysis** to identify potential markets and applications for ENFIELD's key exploitable results. Through meticulous market analysis, the project aims to identify the most suitable business models, to maximize the commercial potential of its innovations.

Moreover, the exploitation planning includes an initial validation of the chosen business models through techno-economic assessments, ensuring alignment with the project's overarching objectives and market demands. Components demonstrating high maturity and market readiness will be prioritized for exploitation, commercialization, and broader dissemination, thus maximizing the project's societal and economic impact.

Throughout this chapter, we will delve into the detailed planning process, methodologies employed, and anticipated outcomes, highlighting the project's commitment to effective exploitation and long-term value creation within the European AI landscape. Chapter 5 “Exploitation pathways” starts by outlining the **strategy and planning for project exploitation**, which is divided into three phases. Each phase is explained in its own section, detailing the activities involved. Following this, the chapter delves into specific key activities such as **exploitation modelling**, **KER collection** and **market analysis**. Lastly, it covers the **ENFIELD sustained network** and the creation of the **sustainability plan**.

5.1 Exploitation strategy plan

The exploitation plan within the ENFIELD project is strategically divided into three distinct phases, each serving a pivotal role in steering the project towards successful commercial and non-commercial outcomes. This structured approach is necessary to effectively navigate the complexities of innovation capture and business planning within evolving market landscapes. By delineating these phases, ENFIELD ensures comprehensive coverage of key aspects necessary for optimal exploitation of project results. The three phases show in Figure 6 are explained in more detail in the next sub-sections.

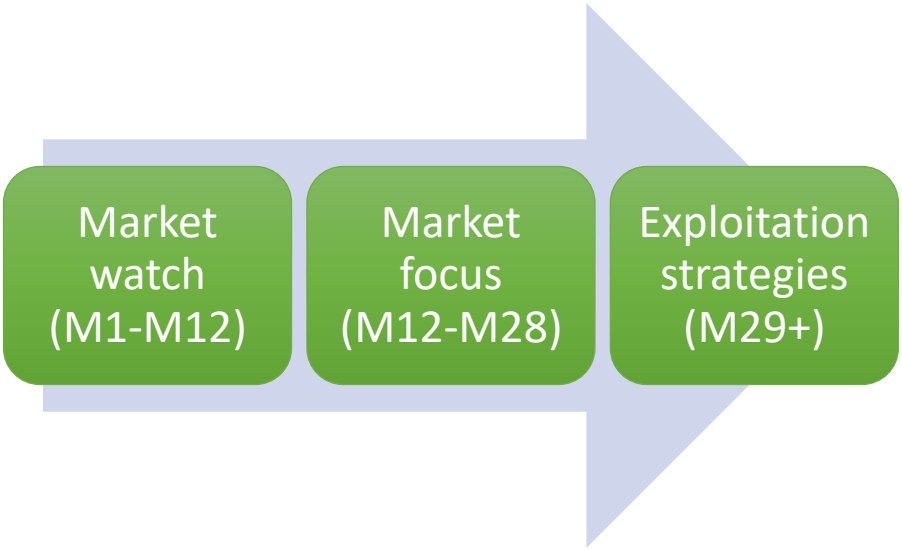

Figure 7. Exploitation plan strategy

5.1.1 Phase 1 – Market watch

In order to delineate the appropriate pathway towards the creation of the exploitation plan(s) (both for commercial and non-commercial offerings), ENFIELD must initiate early-stage planning activities. This phase, from M1 to M12, involves mapping out outputs and formulating plans for the project **Key Exploitable Results** corresponding to the services, products and outcomes to be exploited, while considering the evolving project dynamics and market conditions. The forthcoming document "D7.2 - Report on Innovation and Exploitation" (M18), will include the results of the monitoring of project results and market information collected using an **Innovation Capture Form** (see Section 5.3, Tables 7 and 8) as well as findings derived from the **Market Analysis** (see Section 5.4).

The objective is to draft the initial version of the KERs descriptions by M12. At this juncture, the project would have completed its first year, indicating that work is still ongoing and there remains a considerable amount to be accomplished. However, it is crucial to establish a preliminary version to raise awareness among partners and commence the process of gathering this information. Additionally, it is important to ensure that the forms are consistently updated in parallel with the progress of the work. Towards this goal, the steps to be undertaken between the submission of the current document and the conclusion of Phase 1 include:

1. Conducting a preliminary briefing session to present to all partners the KER template as well as the actual planning and implementation of exploitation pathways. It is particularly important that all partners involved in the process are familiar with the concept of KER, the possible exploitation pathways and the current planning.
2. Encouraging and supporting in the process of completing the KER templates by relevant partner groups intending to exploit each result. MAGGIOLI, as WP7 leader, will be the leading partner in supporting the consortium in this work.
3. Organizing a series of meetings to finalize the selection of KERs and formulate plans for Phase 2 and Phase 3 activities.

5.1.2 Phase 2 – Market focus

This phase builds upon the groundwork laid in Phase 1 by expanding the content collected through the Innovation Capture Forms, encompassing three primary areas of focus. During this phase, from M13 to M28, partners will be organized into groups based on their contributions to KERs to facilitate advancement in exploitation and business planning aspects.

- **Continuation of market monitoring** activities to stay abreast of the latest developments in the field, ensuring alignment of project innovation with external trends. This entails monitoring media sources for relevant innovation news, tracking publication of pertinent research papers, and monitoring product launches in the market.
- **Formulation of quantified business plans**, commencing with an analysis of market potential and exploration of exploitation scenarios. These scenarios will be examined collaboratively, ensuring alignment between the solution and the accompanying business model for long-term commercial success. Business modelling techniques will employ a new version of the Innovation Capture Forms in the form of **KERs template** where partners will be asked to provide more detailed information about project outputs as the work performed has progressed (see Section 5.2 for more details). Active participation from all partners is anticipated to support this endeavour.
- **1st Exploitation workshop**: a structured event aimed at maximizing the utilization and commercialization of research outcomes and innovations. Participants brainstorm, discuss, and strategize on:
    - identifying potential value and applications
    - assessing market demand and competition
    - defining pathways for commercialization
    - exploring collaboration and partnership opportunities
    - developing an action plan for exploitation

5.1.3 Phase 3 – Exploitation strategies

Phase 3, from M29 to M36, marks a critical juncture in the ENFIELD project, where concerted efforts are directed towards the development of robust exploitation strategies. Building upon the groundwork laid in preceding phases, this stage is characterized by the creation of detailed and tailored plans aimed at maximizing the impact of project outputs in the target markets. Exploitation strategies encompass a multifaceted approach, incorporating insights gleaned from market analysis, stakeholder engagement, and collaborative decision-making processes.

During this phase, towards the end of the project, exploitation activities will peak prior to the delivery of the project final results, when also the project dissemination activities will be intensified to attract potential stakeholders and customers. Emphasis is placed on the refinement and consolidation of business models, ensuring alignment with identified market needs and opportunities.

Additionally, during Phase 3, the 2nd exploitation workshop of the project will take place, an initiative aimed to encourage strategic discussions and explore diverse avenues for commercialization and value creation, which is one of the key objectives of this last phase.

5.2 Exploitation modelling

This section outlines the consortium's approach to leveraging and developing a business strategy, aiming to guide their exploitation and business-related endeavours. The proposed strategy takes a phased approach, involving a range of activities that will unfold over the course of the project. The intensity of these activities will be contingent upon the information available and the outcomes generated during the project's lifespan. To this end, the consortium partners have already established an initial strategy. As the project evolves and the consortium partners gain a more comprehensive understanding of the project's assets and the market that can be exploited for commercial and non-commercial purposes, this strategy will be further expanded and refined. This strategic process encompasses the following activities:

- Identifying the innovative assets that can be exploited, namely the **KERs** of the project, whether they are technological components or value-added services delivered by the project to its target users.
- Conducting a comprehensive **Market Analysis**, based on an assessment. This analysis aims to pinpoint the market for ENFIELD, including its target audience (e.g., academia, software companies, application developers, public bodies, policy makers, etc.), market segmentation, current competitors' positions, and emerging industry trends.
- Monitoring the **Intellectual Property Rights (IPR)** based on the principles outlined in the project's Consortium Agreement and Grant Agreement. This monitoring activities will serve as a guide for the collaborative and individual exploitation efforts of the project partners.
- Analytically defining all **potential commercial and non-commercial Exploitation Models**, which have been initially identified and are detailed in the following sections.
- Thoroughly defining and assessing the **sustainability by creating a viable extension plan** (both for not-profit and for-profit scenarios) to maximize the long-term post-project results

5.2.1 Exploitation models

The ENFIELD consortium recognizes three main exploitation models for the project results:

- **commercial exploitation model**, which implies the paid provision of the project results to the end users and other stakeholders, complying with a licensing scheme which will be defined in the ENFIELD business plan (included in the next deliverables of WP7 “D7.2 and D7.3;
- **research exploitation model**, which implies the re-utilisation of the research know-how acquired in future activities; this model encompasses all the project outputs generated by research activities such as publications, policy recommendations, contribution to standards and certifications, etc.

- **technological exploitation model**, which implies the re-utilisation of the technological know-how acquired for the development of innovative products and the provision of advanced services built on top of them.

However, not all project partners and interested stakeholders may exploit all project results using the three models defined above. Hence, it is crucial that the exploitation models of the ENFIELD project results will take into consideration and depend on three main parameters:

a. the **nature and interests** of the project partners and stakeholders in general;
b. the **distribution model** (commercial or non-commercial) of the project results;
c. the **distribution of the IPRs** amongst the project partners.

5.3 ENFIELD Key Exploitable Results

The Grant Agreement already provides an initial list of Exploitable Results of the ENFIELD project, as reported below in Table X (Table 2.4 of the GA).

Exploitable Result	Value proposition	Main exploitation roles	Main markets
#1. Enhanced AI technologies	ENFIELD will provide enhanced AI algorithms, models, tools and approaches through the research conducted in the four pillars.	ENFIELD will take up the role of the technology provider and provide commercial or open access to technology developed.	AI ecosystem vendors, academia, large enterprises
#2. AI datasets	ENFIELD will produce multiple datasets that will be used during the project but will also be valuable to other researchers	ENFIELD will provide public or restricted access to datasets to enhance the formation of a European AI network.	AI research community
#3. Vertical specific AI products	Through the collaboration of academia and industry in the four verticals, ENFIELD will develop domain specific AI products for energy, healthcare, manufacturing, and space industries.	ENFIELD will take up the role of the technology provider and provide commercial or open access to technology developed.	Enterprises in the energy, healthcare, manufacturing, and space industries.
#4. AI policies standards and guidelines	ENFIELD outcomes and results will pave the way towards developing policies, standards, and guidelines for applying AI technology for the four verticals	ENFIELD will provide developed material to the AI community and the four industries	AI research community, Enterprises in the energy, healthcare, manufacturing, and space industries

#5. Training material	ENFIELD project will develop AI courses and training material.	ENFIELD will take up the role of education provider	AI research community, Enterprises in the energy, healthcare, manufacturing, and space industries

Table 6. Key Exploitable results from ENFIELD GA

However, in order to map the project outputs, a series of forms will be circulated among partners to collect information about the key exploitable results of ENFIELD.

These forms will serve as foundational documents, initiating the collection of essential information to map ENFIELD outputs during Phase 1 and that will be subsequently reviewed, improved and updated during Phase 2. Initially, data will be sourced from multiple channels, including the identification of KERs in collaboration with project partners and market monitoring and analysis conducted via desktop reviews, industry reports, trade publications, academic journals, expert interviews, and participation in external events.

Innovation Details	Description
Short description	
Technical description	
Problem(s) addressed by the innovation	
Existing solutions to the problem(s) that you are aware of and consider to be closest to the new innovation	
Key aspects of the invention which make it novel and demonstrate its advantages over the existing solutions	
Potential commercial (or academic) application (products, processes, services, or research tools) based on the invention	
Companies that might be interested in using, developing or marketing this invention	

Do you plan to publish any papers on your innovation and in what medium/publication?	

Table 7. Innovation Capture Form, part A

Prior Research	
Please list relevant references from the scientific literature	
Please list the results of any patent search you have conducted (google.com/patents)	
Has any public disclosure of the invention occurred already, without the protection of a Non-Disclosure Agreement?	
Is any disclosure pending?	
Is the innovation linked to any of the following whether past, present or currently under negotiation?	
Material transfer agreement(s)	*YES / NO*
License agreement(s)	*YES / NO*
Personal consultancy(s)	*YES / NO*
Provision of equipment	*YES / NO*
Open-source software license	*YES / NO*
If YES to any of the above, please provide details	

Table 8. Innovation Capture Form, part B

5.4 Market Analysis Plan

This section undertakes the analysis of the market targeted by the ENFIELD project. It outlines the plan for market analysis, which will serve as the foundation for project exploitation activities. This plan follows a step-by-step methodology designed to solidify the approach for successfully exploiting project results. The outcomes of this analysis will be initially reported in "D7.2 - Report on Innovation and Exploitation" at M18, with final results detailed in "D7.3 - Report on Innovation and Exploitation 2" at the project's conclusion in M36. These documents will include a comprehensive analysis defining the market landscape relevant to the ENFIELD project, identifying similar or alternative solutions, and utilizing SWOT analysis to highlight strengths, weaknesses, opportunities, and threats associated with project exploitation. It is important to emphasize that the results of the continuous monitoring and analysis of the markets will also be beneficial for the dissemination and communication activities conducted in WP6 as they will assist in better defining the project's target groups and their characteristics.

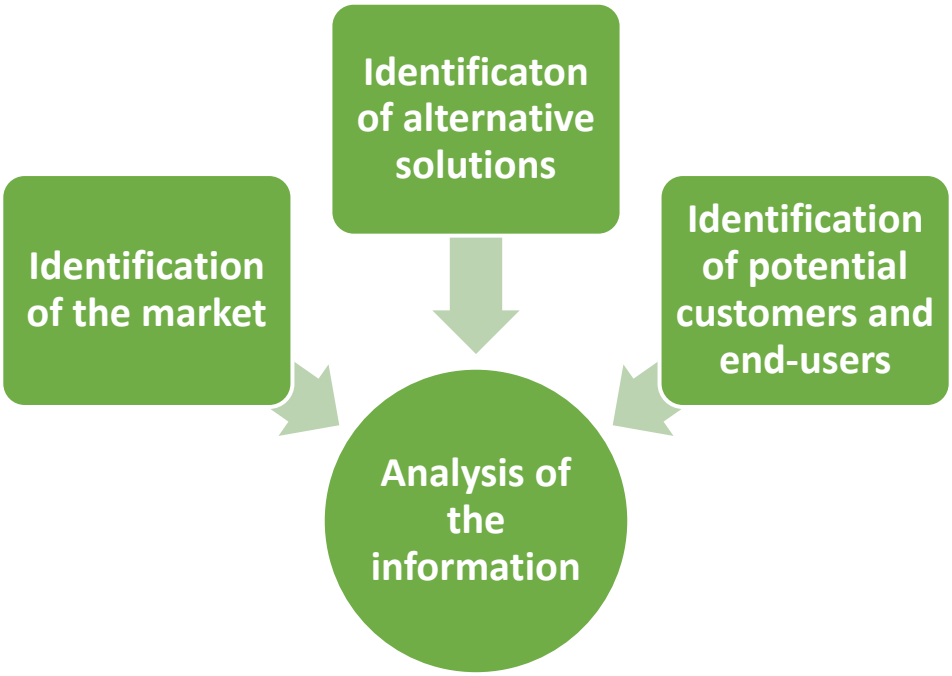

Figure 8. Key activities of Market Analysis

This section outlines the plan for market analysis, which will also guide the exploitation activities of the project. This plan adopts a stepwise approach aimed at solidifying the strategy for successfully exploiting the project results. Specifically, it includes:

1. **Identification of the market** towards which the project results are targeted, encompassing an analysis of the market status, size, and projections. This analysis will inform targeted exploitation actions.
2. **Identification of alternative solutions** to the ENFIELD Key Exploitable Results (KERs) to evaluate strengths and weaknesses, identify competitors, and refine commercialization strategies and pricing policies.
3. **Identification of potential customers and end-users** of the ENFIELD project results, further understanding the target market, and refining exploitation policies.

4. **Analysis of the information collected**, which involves understanding markets, segments, target groups and competitors towards the formulation of a solid commercial and non-commercial exploitation plans. Towards this goal, different frameworks of analysis will be used (e.g. SWOT, PESTEL, etc.). The results of this work will be particularly useful to better understand the various target groups that dissemination and exploitation activities will target and impact, such as:
   - Researchers outside ENFIELD, leveraging knowledge exchange through scientific papers, conference presentations, webinars, and other resources to enhance AI skills and advance research.
   - Academic organizations, facilitating research frontiers, international collaborations, and joint projects.
   - Industry stakeholders, fostering closer collaboration with academia, access to top-level research outcomes, and potential solutions to address industry needs, bolstering the European industry's competitive position.

By integrating these steps, the plan ensures a comprehensive approach to market analysis and exploitation, optimizing the project's impact and success.

5.5 IPR Management

The IPR management strategy will focus on three main goals:

- Fostering a focused project approach towards generating IPR (e.g., patents, design rights, copyright) as one of the main drivers of the project work.
- Evaluating project results to identify opportunities for IPR protection.
- Avoiding premature disclosure, which could compromise the ability to secure patents.

The IPR monitoring will be conducted through the distribution of Innovation Capture Forms. Throughout the project duration, all partners and especially Work Package (WP) leaders will oversee the identification, monitoring, and release of outcomes relevant for protection or confidentiality, using these forms and they will draft an IPR Chapter in their Periodic Reports. To ensure compliance with the GA and CA terms, as well as to facilitate business planning and prevent disputes, MAGGIOLI will maintain an IPR Directory throughout the project's lifespan. The IPR Directory incorporates also all knowledge items related to the project's work detailed in the CA, including pre-existing know-how and project-developed results, specifying the owner(s), nature of knowledge, perceived exploitation potential, and current status regarding access rights, exploitation plans, or dissemination outside the Consortium.

IPR considerations are crucial also for third-party projects funded via Open Calls. Therefore, all involved parties will be required to sign Non-Disclosure Agreements (NDAs) to prevent improper use of sensitive information. The consortium will ensure that unauthorized parties do not access applicant-provided information.

Promising exploitation opportunities, identified based on technology solutions, business readiness, and impact, will undergo a tailored IPR strategy development process.

5.6 ENFIELD Sustained Network

This section is dedicated to the activities carried out in the context of "T7.5 - Sustained ENFIELD Network" and it is focused on the development of a comprehensive extension plan, encompassing

both Not-for-profit and For-profit scenarios, with the goal of enhancing long-term post-project collaboration and results sharing among stakeholders including academia, RTOs, and industry. Key priorities include:

- Shared goals among network members
- Clear governance structures: define clear governance structures outlining roles, responsibilities, decision-making processes, and accountability mechanisms.
- Strong leadership/champions: identify and empower strong leaders or champions from academia, RTOs, and industry to drive sustained efforts and foster collaboration. Provide training and support to enhance coordination and engagement among network members.
- Sustained resources: develop comprehensive strategies to secure sustained resources, including infrastructure, human capital, and financial support. Explore diverse funding opportunities from public grants, private investments, and other sources to ensure long-term sustainability.
- Effective communications support within and beyond the network: stakeholder engagement and alignment will be prioritized. Through the collaboration with WP6, stakeholder mapping and workshops, key players will be identified and their interests aligned to establish shared goals for sustained collaboration

Furthermore, the consortium will explore the feasibility of creating a European Interest Group (EEIG) built upon the foundations of the ENFIELD network. This initiative aims to deepen collaboration and resource-sharing among stakeholders while also considering the potential roles of academic, RTO, and industrial partners in post-project funding schemes resembling established models such as EARTO or PPP approaches.

This sustainability will benefit from exposure to existing ecosystems, such as AIOD and the AI Lighthouse projects that will enrich the network's activities and contribute to its longevity. Moreover, the availability of additional funding opportunities from national and international programs will serve as a vital instrument in maintaining and expanding the network's reach, ensuring the continuity of newly formed partnerships and initiatives.

The success of sustaining the network beyond the duration of the ENFIELD project will, to some extent, rely on the outcomes of these initiatives and the collaborative efforts developed around them and with the collaboration with other work packages.

Conclusions

In conclusion, this deliverable of the ENFIELD project has undertaken a comprehensive approach towards standardization, policy recommendation, and strategic exploitation of its key results. Through meticulous methodology and collaborative efforts, the deliverable has identified and addressed critical aspects such as innovation paradigms, policy dialogues, and standardization methodologies. The document presents a clear roadmap for navigating the complex landscape of AI regulation and certification while also outlining strategies for effective market exploitation. Moving forward, it is imperative to leverage these insights and recommendations to foster responsible AI development and ensure the long-term success of the ENFIELD initiative in driving innovation and societal impact.