

# The Inlecom Patent Framework (IPF) Method: A Novel Approach to Patenting in EU-Funded Research Projects

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## Abstract:

In the realm of EU-funded research projects, patenting innovations has historically presented multifaceted challenges, from alignment with strategic priorities to ensuring commercial viability. This paper introduces the IPF Method, a holistic approach developed over years of experience by the Inlecom team, having filed 50+ patents across both commercial and EU-funded research undertakings. The method uniquely emphasises a three-pronged assessment: technological novelty, market relevance, and strategic alignment with the European Commission's objectives. Through a comprehensive exploration, this paper highlights how the IPF approach can transform the trajectory of EU research innovations, ensuring they transcend academic archives to realise tangible market impact. While its transformative potential is evident, the method's challenges, such as evolving EC priorities and subjectivity in project review evaluations, are also dissected. Recommendations for refining and scaling the approach are proffered, emphasising feedback mechanisms, stakeholder training, and continuous refinement. The paper concludes with the assertion that the IPF Method, with its integration of commercial foresight and strategic alignment, can serve as a beacon for future EU research patenting endeavours.

## 1. Introduction

In the intricate landscape of EU-funded research projects, patenting has often emerged as a convoluted crossroad of innovation, legal intricacies, and strategic alignment. The European Union, with its ambitious agenda to bolster research and technological advancement, has regularly grappled with converting the resultant innovative prowess into fortified patents. While the traditional approach to patenting within these projects often emphasised technological novelty, it intermittently overlooked crucial facets such as market relevance, commercial potential, and alignment with overarching strategic objectives. Against this backdrop, this paper introduces and elucidates the Inlecom Patent Framework (IPF) method. This revamped approach seeks to marry innovation with commercial and strategic foresight, ensuring not only the legal sanctity of intellectual property but also its real-world relevance and applicability. Through this paper, we aim to underscore the significance of the IPF method and chart its potential trajectory in reshaping the patent landscape of EU-funded endeavours.

Patenting within the realm of EU-funded research projects has traditionally been a complex and multifaceted endeavour. While the very essence of these projects is to foster innovation and progress, converting these innovative ideas into legally protected patents often encounters several challenges:

1. **Broad Objectives:** EU research projects, by design, address a wide range of topics, from technology and science to societal challenges, making the patenting scope extensive and sometimes ambiguous.

2. **Mismatch Between Innovation and Strategic Priorities:** Not every innovation aligns perfectly with the European Commission's strategic priorities. The resultant gap can leave potential breakthroughs unprotected.
3. **Commercial Viability Concerns:** Many innovations, though technically sound and novel, might lack the necessary commercial thrust for market adoption. The traditional approach may not effectively gauge the market potential of these innovations.
4. **Overemphasis on Technological Novelty:** A singular focus on the novelty aspect may overlook other critical facets like market relevance, alignment with broader objectives, and real-world application.

The Inlecom Patent Framework (IPF) Method has been conceptualised against the backdrop of these prevailing challenges. Its primary objective is to provide a more comprehensive, aligned, and commercially relevant framework for assessing and patenting innovations stemming from EU-funded research projects.

Key goals of the IPF method are:

1. **Alignment with Strategic Directives:** Ensuring that the innovations being patented resonate with the European Commission's objectives and priorities, leading to more meaningful and impactful patents.
2. **Incorporating Commercial Value:** By considering the potential market value and commercial exploitation avenues for each innovation, the IPF method ensures that patents don't just sit on the shelf but have the potential to be commercialised.
3. **Holistic Assessment:** Moving beyond mere technological novelty, the IPF approach uses a set of Key Performance Indicators (KPIs) to evaluate innovations from multiple dimensions, offering a more rounded perspective.
4. **Enhancing Patent Strength and Practicality:** The method also emphasises the ease of discovering infringements and the practical challenges of working around the patent, ensuring robust legal protection.

In essence, the IPF Method is a timely and essential evolution in the patenting process, designed to navigate the unique challenges posed by EU-funded research projects and to optimise the value derived from the patented innovations.

## 2. The IPF: An Overview

The IPF Method is the culmination of years of dedicated work, driven by the experiences and insights of the Inlecom team across both commercial and EU-funded research projects. This method was not birthed overnight; instead, it was meticulously crafted over time, informed by real-world challenges and opportunities encountered during the patenting process. Over the course of its development, the team filed more than 50 patents, each serving as a learning experience and contributing to the method's evolution. These hands-on experiences, spanning various sectors and technological domains, have ensured that the IPF Method is not only theoretically robust but also practically attuned to the complexities of the patenting landscape in the European research ecosystem.

The EU's ambitious research and innovation projects, require state-of-the-art methodologies to ensure that the resulting intellectual property is effectively captured and protected. Central to this initiative is the IPF Method. Herein we elaborate on the detailed process of patent generation under this method.

## 2.1 General Approach

As discussed above, The IPF is a comprehensive and iterative approach that recognises the traditional patenting processes, especially in the context of EU-funded research projects, may not always emphasise alignment with strategic priorities, commercial value, and technological novelty simultaneously. Therefore, our approach seeks to bridge the gap by integrating these elements and ensuring that innovations not only meet legal patenting standards but also align with broader objectives and hold real-world relevance.

To achieve this, the IPF is structured around three main pillars:

1. Alignment with European Commission Objectives.
2. Alignment with Patenting Fundamentals.
3. Commercial Value.

Each pillar comprises a set of Key Performance Indicators (KPIs) that offer both a qualitative and quantitative assessment of an idea or innovation, ensuring a holistic evaluation.

## 2.2 Overview of Data Sources and Analysis Methods:

### 1. Primary Data Sources:

- **Strategic Documents from the European Commission:** These provide insights into current strategic priorities and objectives.
- **Living Labs Feedback:** Direct feedback from Living Labs to assess the applicability and relevance of a given innovation in real-world contexts.
- **Patent Databases:** Comprehensive searches to determine the novelty of the technology and any existing similar patents.
- **Market Research Reports:** These inform the commercial value and exploitation potential, offering insights into market trends, adopters' interests, and potential revenue streams.

### 2. Analysis Methods:

- **KPI Scoring System:** Each innovation is scored on various KPIs, each on a scale of 0-10. An average innovation score is then derived, providing an aggregate assessment of the innovation's potential for patent filing.
- **Qualitative Analysis:** Feedback, especially from Living Labs and commercial stakeholders, is qualitatively assessed to identify themes, challenges, and opportunities.
- **Gap Analysis:** By comparing against existing patents and market needs, gaps are identified which help in understanding the novelty and uniqueness of the proposed innovation.
- **Commercial Viability Assessment:** A deep dive into the potential revenue streams, be it through licensing, partnerships, or other avenues, combined with market growth projections to ascertain the commercial prospects of the innovation.

Through this structured methodology, the IPF approach ensures that innovations are not only patent-worthy in a legal sense but are also in alignment with strategic directives and have clear commercial potential, thus representing a significant departure from traditional patent approaches in EU-funded projects.

## 2.3 Patent Generation Process

Figure 1 aptly illustrates the four cornerstone steps of the IPF Method patent generation process:



Figure 1 Patent generation key steps

### 2.3.1 Education

Initiated by Inlecom, a dedicated 'Patent Education' online session is held, with its primary goal being to equip all partners of the relevant project with a robust understanding of intellectual property and the patent process. This interactive training covered a broad range of subjects including:

- The perspective and motivation of the European Commission in encouraging IP protection.
- Basics of intellectual property including patents, copyrights, trademarks, and trade secrets.
- Detailed insights into patent generation: its economics, litigation, and the software patent scenario.
- The importance of patent searching for ensuring novelty.
- A presentation of Inlecom's methodology framework.

Feedback from partners is generally positive, emphasising the value and clarity the session provided to the whole process.

### 2.3.2 Idea Stimulation

The education session proves instrumental in sparking innovative, patentable ideas from project partners. Inlecom then deploys an in house developed 'innovation disclosure form', which acts as the first formal step for partners to present their potential innovations for consideration. This form is pivotal in summarising the invention's details and assessing its novelty, background, and motivations for patenting.

### 2.3.3 Patent Selection

The project then leverages Inlecom's Innovation Management Methodological Framework for determining which of the proposed inventions would proceed to the patent filing stage. This decision-making process is meticulous, with considerations given to:

- Novelty: Ensuring the invention's uniqueness against global prior art.
- Inventive step (Non-Obviousness): Assessing if the invention brought a significant new perspective or method to the table.
- Utility: Ensuring the invention was practically feasible.

The entire process of invention evaluation is underpinned by a set of KPIs, as presented in Table 1. These KPIs aid in discussions between project stakeholders and inventors, ensuring that the dialogue remains concentrated on the patent's protection merits, all facilitated by the output KPI scores as seen in Figure 2.

*Table 1 Innovation KPI scoring.*

Focus Areas	Innovation KPIs (applied to each idea/innovation)	Rationale/Explanation	KPI Scoring
<b>(A)</b> Alignment with European Commission Objectives	<b>A1</b> Importance/relevance to European Commission priorities	Is the patent sufficiently relevant to the core R&D and objectives of the project such that a technical reviewer would support the patent expenditure as being directly relevant	9
	<b>A2</b> Is the patent in a technological area that the EC would deem strategic for EU	Do we anticipate that the partners would exploit the technology now or further down the road	9.5
	<b>A3</b> Alignment and relevance to the Project's Commercialisation Goals	Do we anticipate that the partners would exploit and monetise the patent now or further down the road	8.5
<b>(B)</b> Alignment with EPO Patenting Fundamentals	<b>B1</b> Technology strength - Degree of novelty	To what extent is the innovation new/novel & inventive	10
	<b>B2</b> Technology strength - non- Obviousness	To what extent is the innovation obvious to a subject matter expert (0=obvious, 10=not at all obvious)	10
	<b>B2</b> Technology strength - Technical Effect	To what extent has the invention achieved a substantive technical step/effect	10
	<b>B4</b> Legal strength - Ease of discovery	How easy is it to demonstrate that a 3rd party has infringed on the patent	8.5
	<b>B5</b> Legal practicality - Reduction to Practice	Is it convincing that the invention can be implemented and lead to a credible embodiment	9
	<b>B6</b> Legal practicality - Avoidance (difficult to avoid Vs easy to work around)	Could another actor file a patent in the same space by easily finding a different way to implement the idea (10=with great difficulty, 0=very easily)	9
<b>(C)</b> Commercial Value (Alignment on Business Value and Supporting Commercialisation)	<b>C1</b> Exploitation potential - Importance/relevance to Business and/or Customers	Is there reasonable confidence that this is important for industry/business, and they may/will become potential adopters. Likelihood of invention being exploited i.e., to make sure that it does not end up sitting on the shelf	7
	<b>C2</b> UVP & Novelty strength	Related to how well invented this area is. In general, well invented areas have significantly less commercial IP value owed to being in crowded spaces (0=well invented, 10=vanilla IP space)	9
	<b>C3</b> IP revenue potential	Potential to generate income through licencing, partnerships, investment and/or divestiture in the forthcoming years based on market growth projections	9.5
	<b>C4</b> Alignment with project's overall commercial vision	Is what we are protecting in line with and in support of the project's commercial ambition and/or supporting a Partner's internally commercial roadmap through the help/support of the project	8
<b>Average Innovation Score: (values 0-10, ideally achieving &gt;=8.0 in aggregate to justify EU/US Patent Filings)</b>			<b>9.000</b>

Inlecom's role is also to safeguard the confidentiality of the innovations. This is exemplified when the partners have an impending publication, necessitating the acceleration of its patent filing to avoid jeopardising its patentability.

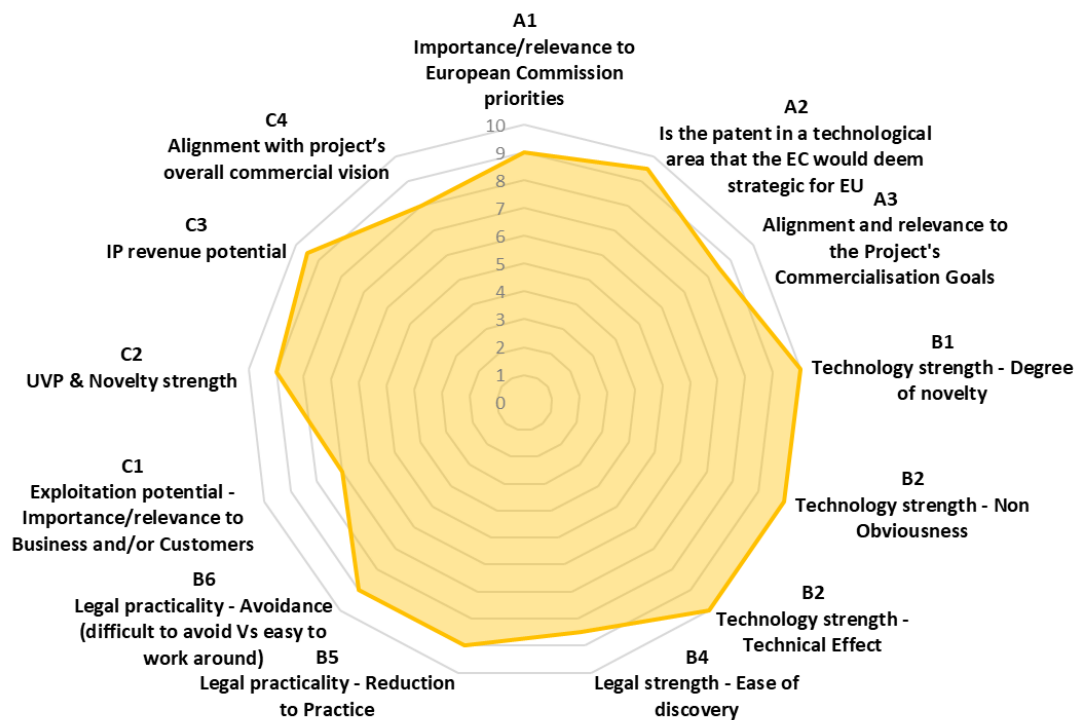


Figure 2 IP KPI Scoring Results (for each idea/ innovation)

### 2.3.4 Selection of Filing Region

The final step involves strategic decisions regarding the geography of patent filing. The Innovation & IPR Manager plays a crucial role in guiding inventors on the most appropriate region or country to lodge their patent application. This decision is based on several considerations, from the patent's intended use and protection against competitors to aligning with the patent holder's long-term business goals.

In conclusion, the IPF Method, as applied in a research project, showcases a comprehensive, holistic approach to intellectual property generation and protection. This method not only aids in the systematic creation and protection of IP but also paves the way for future European innovations to thrive both regionally and globally.

## 3. Advantages of the IPF Method

The methodology highlighted above represents a more strategic, detailed, and metric-driven approach to evaluating the potential of innovations for patent filing, especially when contrasted with the traditional approaches utilised in EU-funded research projects. Here are the significant distinctions:

1. **Focused Alignment with EC Objectives:** Historically, EU research projects might have been oriented around broad research themes or disciplines without necessarily emphasising direct alignment with the immediate strategic priorities of the European Commission. The new framework explicitly ranks innovations based on their relevance to current EC priorities, ensuring that funded innovations align with and directly contribute to the EU's strategic aims.

2. **Enhanced Legal Assessment:** Traditional approaches often heavily emphasised the technological novelty of an invention as the primary criterion for patentability. The modern methodology brings a more comprehensive legal perspective by not just considering the novelty but also examining the ease of detecting infringements and assessing how easily other entities can sidestep the patent.
3. **Direct Commercial Value Assessment:** In the past, the primary goal of many EU-funded research projects was knowledge generation and dissemination. While commercialisation was always a desired outcome, it wasn't always systematically evaluated. The outlined KPIs bring a rigorous focus on the commercial viability and potential revenue generation of the invention, ensuring that innovations don't just end up as shelved intellectual property but have a tangible market impact.
4. **Specific Attention to 'Living Labs' and Project Vision:** Traditional models might not have explicitly integrated feedback or anticipated uses from 'Living Labs' or other real-world testing environments. This new methodology integrates these considerations, ensuring the practical relevance and applicability of the innovations. It also aligns the innovation with the overarching commercial vision of the project, ensuring strategic consistency.
5. **Aggregate Scoring Mechanism:** One of the most distinguishing features is the aggregate scoring system. Rather than making subjective or binary decisions on patentability, this approach quantifies the potential of each innovation across multiple parameters. A clear threshold (e.g., an average score of  $\geq 8.0$ ) then becomes the benchmark for patent filing, introducing more objectivity into the decision-making process.
6. **Emphasis on UVP & Novelty in Crowded Spaces:** The traditional patent approach often lacked a metric to evaluate the uniqueness of an invention in an already crowded domain. This modern approach specifically scores the strategic IP value based on how saturated or fresh the innovation space is, ensuring that truly novel and valuable ideas are prioritised.

In conclusion, while traditional patenting approaches in EU-funded research projects provided a foundational framework, this updated methodology encapsulates a more holistic, strategic, and metric-driven approach. It aims to align innovations more closely with EU objectives, legal realities, commercial potentials, and real-world applicability, thereby enhancing the overall efficacy and impact of patenting efforts.

#### 4. The Value of Intellectual Property (IP) to the European Union

Intellectual Property Rights (IPR) have always been at the heart of the European Union's economic matrix, and recent data further underscores their significance. As of the latest study (EPO & EUIPO, 2022), the European Union boasts 357 IPR-intensive industries, up from 353 in 2019. Interestingly, 64% of these industries are intensive with respect to multiple IP rights, highlighting the intertwined nature of IP in various sectors.

The employment dimension of IPR-intensive industries has witnessed a notable surge. Between 2017 and 2019, these industries accounted for 29.7% of all EU jobs, marking an increase from the 28.9% figure in the 2014-2016 period. In numerical terms, this translates to more than 61 million individuals directly employed in these sectors. Furthermore, when one factors in the additional 20 million jobs created in ancillary industries that cater to IPR-intensive sectors, the total employment figure related to IPR is an impressive 82 million, or 39.4% of the total.

Economically, IPR-intensive sectors pack a powerful punch. Over the period, they were responsible for a remarkable 47% of the EU's total economic activity, equating to a GDP contribution of €6.4 trillion. Additionally, these industries played a pivotal role in the EU's trade balance, ensuring a trade surplus of €224 billion. They were instrumental in maintaining a level equilibrium in the EU's external trade.

A deep dive into the data reveals the profound impact of IPR-intensive industries on the EU's internal market dynamics. These industries account for an overwhelming 75% of intra-EU trade. While countries like Germany, France, Italy, and the Netherlands are at the forefront of IPR creation, nations like Hungary, Poland, and Estonia are also reaping considerable benefits from the division of labour within IPR-intensive sectors. As an illustration of the interconnected EU market, nearly 7 million IPR-related jobs across EU member states are attributable to companies from other member states. In some countries, over 30% of jobs in IPR-intensive industries are due to this cross-border collaboration.

Furthermore, there's a discernible wage premium in IPR-intensive sectors. Wages in these industries are 41% higher on average compared to other sectors. This is in alignment with the fact that the per-worker value addition in IPR-intensive sectors surpasses that in other areas of the economy.

Comparative analysis between the 2019 study and the latest one reveals an ascendant trajectory for IPR-intensive industries in the EU. There has been a measurable uptick in their relative contribution to the EU economy between the 2014-2016 and 2017-2019 periods.

A spotlight on sectors engaged in Climate Change Mitigation Technologies (CCMTs) and those associated with green Trademarks (TMs) shows their growing economic relevance. Between 2017 and 2019, these sectors accounted for 9.3% of employment and 14% of the EU's GDP. They also played a substantial role in the EU's external trade dynamics.

Lastly, when juxtaposing the EU's IPR-intensive industry contributions to countries like Iceland, Norway, Switzerland, and the UK, interesting patterns emerge. While the IPR-intensive industry's contribution to employment was somewhat lower in Norway, Switzerland, and the UK than the EU average, it was on par in Iceland. However, when it came to GDP contribution, Norway outstripped the EU average, while the other three trailed behind.

## **5. Potential Implications and Future Prospects**

The process of patenting, particularly within the framework of EU-funded research projects, has long been a subject of intense scrutiny. While the goal has always been to promote innovation and safeguard intellectual property, the dynamic nature of technology, market demands, and policy objectives presents a continuous challenge. The introduction of the IPF Method represents a novel attempt to address some of these challenges, offering a more integrated and strategic perspective on patenting. This section delves into the potential impact of this method on the broader EU research landscape, explores its inherent challenges, and provides suggestions for its further enhancement, ensuring that Europe remains a hub of innovation and technological advancement.

The key potential implications for this IPF method are summarised as follows:

### **5.1 Reshaping the Landscape of EU Research Innovations**

The IPF Method, with its emphasis on holistic assessment encompassing technological novelty, market relevance, and strategic alignment, has the potential to redefine the trajectory of EU research innovations. Historically, many groundbreaking inventions from EU-funded projects have been relegated to academic archives, failing to realise their market and commercial potential. By ensuring that innovations align with the European Commission's priorities and possess significant commercial



value, the IPF approach can help translate academic prowess into market-leading solutions. Such an integrated perspective could lead to a more streamlined patenting process, ensuring that the EU remains at the forefront of global technological advancements.

## 5.2 Potential Challenges and Limitations

While the IPF Method offers a promising avenue for optimising patenting within EU-funded projects, it is not without its challenges. The fluid nature of the European Commission's priorities means that innovations which align today might find themselves out of sync in the near future. Moreover, assessing commercial value and project alignment can be subjective, introducing potential biases into the evaluation process. There's also the risk of overemphasising market readiness, potentially sidelining early-stage innovations that require longer gestation periods but have profound long-term potential.

## 5.3 Suggestions for Further Refining and Scaling the Approach

To harness the full potential of the IPF Method and address its inherent challenges:

- **Feedback Mechanism:** Instituting a robust feedback mechanism where researchers, industry stakeholders, and patenting experts can regularly provide insights will ensure the methodology remains dynamic and up to date.
- **Training and Workshops:** Given the unique nature of the IPF approach, regular training sessions and workshops can help stakeholders understand and better navigate its nuances.
- **Collaborative Platforms:** Creating collaborative platforms where researchers can interact with industry experts can provide a practical lens to assess the commercial viability of innovations.
- **Iterative Refinement:** Periodic reviews of the IPF criteria, based on real-world patent outcomes, can further hone the methodology, ensuring it remains effective and relevant in the changing landscape of EU research.

In conclusion, while the IPF Method holds transformative potential for EU research innovations, its success will hinge on continuous refinement, stakeholder engagement, and adaptability to the evolving European research ecosystem.

## 6. Conclusion

The European Union, with its rich history of research excellence, has continually sought ways to translate academic discoveries into tangible benefits for society and the economy. However, the traditional patenting approaches used in EU-funded research projects have often fallen short in adequately bridging the gap between innovation and its real-world applications. This paper introduced the IPF Method, a holistic approach that places emphasis on technological novelty, market relevance, and strategic alignment with the European Commission's priorities.

While the early implications of the IPF method are promising, reshaping the patenting landscape, and ensuring that innovations not only secure patents but also achieve market and societal impact, it is not without challenges. The dynamic nature of strategic priorities, potential biases in assessment, and the risk of overlooking early-stage, high-potential innovations underscore the need for a balanced and continuously refined approach. The IPF method applied in conjunction with Inlecom's developed Commercial Pathway Methodology (Durkin & Keogh, 2023) helps to progress funded projects towards achieving valuable patents along with viable future commercial plans and aspirations, further working towards the commissions overall goal of improving funded projects impact.

As we stand at the cusp of a new era in EU research innovations, the IPF Method serves as a beacon, guiding stakeholders towards more effective patenting strategies. It is a call to action, urging researchers, policymakers, and industry leaders to collaborate, refine, and implement this methodology for a brighter, innovation-driven future for Europe. It is our hope that as the IPF Method becomes more entrenched, it will lead to a surge in groundbreaking innovations that transform industries, elevate European leadership in technology, and ultimately benefit humanity at large.

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