

The Cocreation Movement

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The Cocreation Movement Formalization – COCREATION NET– Concepts In Digitalization, Smart Cities, Complexity and Governance to Accelerate Innovation, Productivity & Self Organization

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Executive Summary

1. Executive Summary

The Cocreation Movement is an education and innovation framework that was started by Feras Naser, it was aiming to accelerate innovations and overcoming social problems such as unemployment. Feras Naser developed a number of methods for ideation and brain storming, then he developed a complete program to help young people self organization and transfer concepts into ventures called Cocreation 101-104.

In addition to the previous, Feras Naser has developed an infrastructure vision on cocreation, self organization and new formations that can be accelerated in various countries. Feras Naser efforts were not met with formal adoption by official organizations. Thus he decided to develop a Marie Currie Doctoral Network proposal to formalize the Cocreation Movement as a group of concepts around Digitalization, Smart Cities, Complexity and Governance that if combined together can be called the cocreation Movement Program.

It should be well understood that the concept of cocreation is an answer to Systems Complexity, where one expert cannot provide an answer to the interdisciplinary problems that our world is facing today. It is part of the following fields Open Innovation & Design Thinking, Social & Urban Systems and Complexity & Systems Science.

COCREATION-NET is a proposed Marie Skłodowska-Curie Actions (MSCA) Doctoral Network designed to formalize the **Cocreation Movement**. The initiative seeks to shift the global economy from a consumer-centric digital model to a creator-centric autonomous society. By training 15 doctoral candidates (DCs) across a consortium of academic and industrial partners, the network aims to solve systemic challenges like stagnant innovation and youth unemployment through the democratization of AI-driven invention.

The scientific ambition is structured around three interconnected pillars that bridge human-machine interaction, physical infrastructure, and social governance:

1. **Productive Human-Machine Interaction:** Focuses on the development of new tools or workflows that provide a productive Human-Machine interactions. In addition to replacing traditional trial-and-error discovery in materials science and pharma with **autonomous laboratories**. Key innovations include the **xDL 2.0** standard for digitizing chemistry and the use of **AI Copilots** to automate the synthesis of advanced materials like LFP battery cathodes.
2. **Shared Infrastructure & Smart Cities:** Formalizes the vision for **Citizen-Led Smart Cities** and large-scale industrial corridors (e.g., the Feras Naser Corridor). It utilizes **Digital Twins** to close infrastructure financing gaps while integrating renewable energy into existing networks, such as solar-powered corridors.
3. **Self-Organization & Emergence:** Investigates new forms of decentralized governance through **DAOs (Decentralized Autonomous Organizations)** and **Multi-Agent Systems (MAS)**. This pillar provides the "operating system" for the movement, enabling small, AI-driven firms to thrive in a volatile economy through micro-equity and self-organizing venture architectures.

The network is strategically aligned with the **EU Green Deal**, the **Digital Decade**, and the **Global Gateway** initiative. It emphasizes:

- **Intersectoral Mobility:** Doctoral candidates will spend at least 50% of their time with non-academic partners to ensure high employability.
- **The 101-104 Curriculum:** A specialized training program covering digital foundations, robotics, AI-driven discovery, and strategic governance.
- **Global Connectivity:** Strengthening ties between Europe and the "Southern Neighbourhood" through projects like the India-Middle East-Europe Economic Corridor (IMEC).

Dimension	Targeted Outcome
Economic	Creation of 10,000+ high-productivity jobs via decentralized AI-driven enterprises.
Environmental	80% energy reduction in battery synthesis and 30% reduction in transport energy use.
Scientific	Formalization of the xDL 2.0 standard and high-throughput autonomous discovery protocols.
Societal	Empowerment of rural and marginalized communities through "digital leapfrogging" and micro-grids.

COCREATION-NET serves as a catalyst for a global wave of citizen-led development. By synthesizing AI-driven scientific discovery with resilient physical infrastructure and decentralized governance, the network prepares a new generation of researchers to lead the transition to an autonomous, sustainable, and creator-based global society.

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Glossary of Terms / List of Abbreviations

A glossary is essential if you intend to use abbreviations or acronyms in the text. However, even if you list all the abbreviations in the glossary you still need to provide the full title / description etc., with the acronym in brackets, when you first use an abbreviation in the text. You would make reference to Three Letter Acronyms (TLAs) for example.

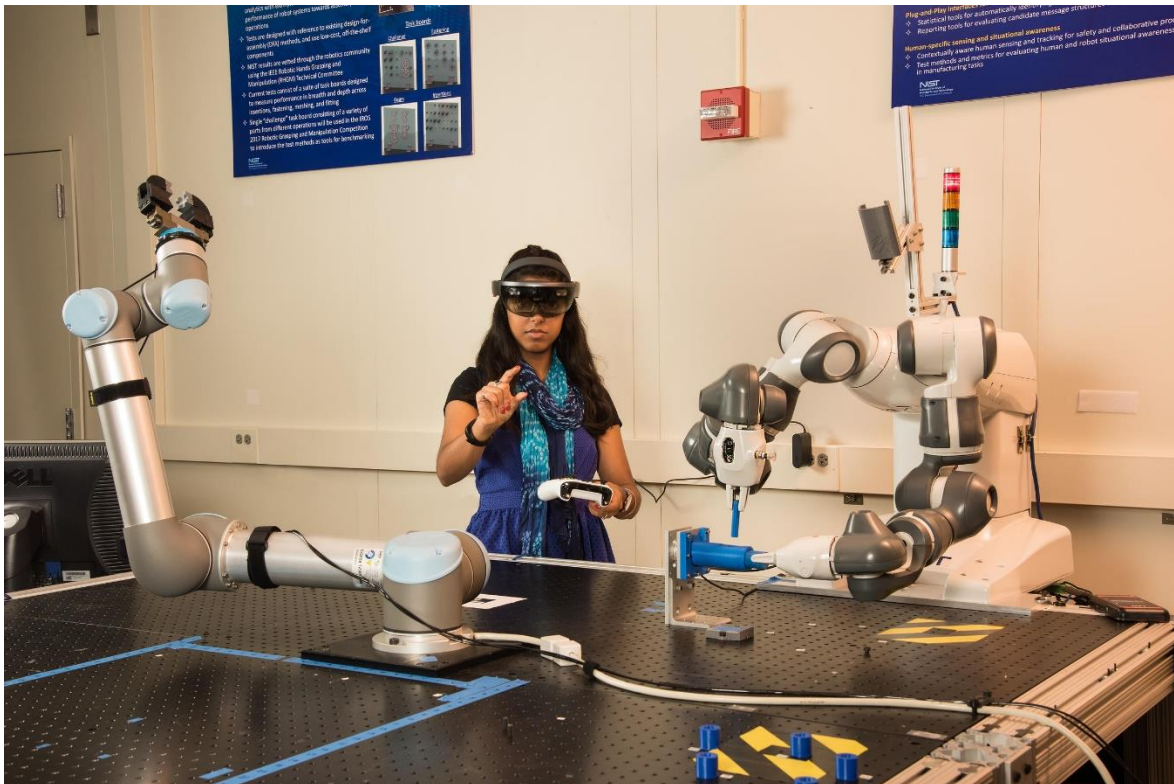
A glossary is normally sorted alphabetically:

Term	Explanation / Meaning / Definition
NR	Network Rail
TLA	Three Letter Acronym
GB	Great Britain (England, Scotland and Wales)
UK	United Kingdom (Great Britain and Northern Ireland)

NOTE: You can get Word to automatically sort the above table alphabetically. Simply click on the table and then go the <Home> tab on Word 2007, then select the button marked <AZ>.

1 Introduction & Excellence

The Cocreation Movement represents a radical departure from traditional industrial and innovative frameworks, proposing a systemic shift from a consumer-centric digital economy to a creator-centric autonomous society. At the heart of this movement is the conviction that the contemporary global challenges of unemployment, stagnant innovation, and infrastructure decay can be addressed by democratizing the capability to "invent with AI". This proposal seeks to formalize the Cocreation Movement through the establishment of a Marie Skłodowska-Curie Actions (MSCA) Doctoral Network, titled "COCREATION-NET." This network will implement a comprehensive doctoral program involving a consortium of universities, research institutions, and industrial actors, with the aim of training 15 doctoral candidates (DCs) to become the architects of this new socio-technical reality.



The scientific ambition of COCREATION-NET is to develop a robust, cross-disciplinary ontology that bridges the gap between productive human-machine interaction, shared physical infrastructure, and self-organizing social governance. The movement's foundational objective is to build 50 model smart cities globally, providing the tools and platforms for citizen-led development. By formalizing this concept within the MSCA framework, the network will leverage the European Union's strategic focus on the "twin" green and digital transitions, as well as the Global Gateway initiative, which seeks to narrow the global investment gap through sustainable connections. The research program is organized into three interconnected pillars, each addressing a critical dimension of the Cocreation Movement.

Research Pillar	Scientific Dimension	Technical Core	Strategic Alignment
Pillar 1	Productive Human-Machine Interaction	AI Copilots, xDL 2.0, & Autonomous Laboratories	European Green Deal, Horizon Europe Excellence.
Pillar 2	Shared Infrastructure & Smart Cities	Digital Twins, & Industrial Corridors	EU Global Gateway, IMEC, & UN SDGs.
Pillar 3	Self-Organization & Emergence	Multi-Agent Systems, DAOs, & Micro-Equity	Digital Decade, Decentralized Economics.

Pillar 1: Productive Human-Machine Interaction and AI Innovations in Materials and Pharma

The first pillar of COCREATION-NET addresses the fundamental inefficiency of the "Edisonian" trial-and-error approach in materials science and pharmaceutical discovery. Traditional experimental workflows are often slow, expensive, and lack reproducibility, creating a significant bottleneck in the development of sustainable energy storage and life-saving drugs. The Cocreation Movement seeks to replace this with a standardized, digitized, and autonomous laboratory environment where human inspiration is augmented by artificial intelligence (AI) and robotics.



The core of this pillar is the development and implementation of the "xDL 2.0" standard for chemical and material synthesis. Building upon the foundational work of the "Chemputer" and the original Chemical Description Language (XDL), xDL 2.0 aims to create an affordable, universal digitization standard for chemistry. This standard allows for the translation of natural language synthetic descriptions into executable machine code, enabling a "Robotic Explorer" to perform complex unit operations—such as temperature control, stirring, liquid and solid handling, filtration, and pH adjustment—without the need for low-level manual intervention.

The scientific research in Pillar 1 will focus on the integration of Large Language Models (LLMs) as "AI Copilots" within this autonomous framework. These GPMs (General-Purpose Models) have demonstrated an unprecedented ability to solve tasks for which they were not explicitly trained, operating effectively even with the small, fuzzy datasets characteristic of chemical sciences. The doctoral projects within this pillar will investigate how these copilots can autonomously search literature, design experiments in real-time, and refine protocols through feedback-based optimization. This is particularly critical for the synthesis of advanced inorganic materials, including metal-organic frameworks (MOFs), coordination complexes, and polyoxometalates (POMs).



A major application area for this research is the development of next-generation battery materials, specifically lithium iron phosphate (LFP) cathodes. The current global demand for sustainable energy storage systems necessitates the rapid discovery of high-performance, low-cost, and low-toxicity materials. Research projects will utilize machine learning to analyze the impact of hydrothermal synthesis conditions on the structural, morphological, and electrochemical properties of LFP. Furthermore, the network will explore the use of AI to optimize battery recycling processes, aiming to recover critical resources with 60% lower costs and 80% lower energy consumption compared to conventional methods.

Material Class	Scientific Challenge	Autonomous Approach	Target Outcome
LFP Cathodes	Optimization of energy density and cycle stability.	ML-driven retrosynthesis and hydrothermal optimization.	200+ mAh/g discharge capacity; 80% energy reduction.
Inorganic Complexes	Reproducibility of complex coordination frameworks.	Natural-language-to-code translation via xDL 2.0.	High-throughput, operator-independent synthesis protocols.
Battery Recycling	Resource recovery from spent Li-ion batteries.	Data-driven viability prediction and process optimization.	Sustainable circular economy for energy storage.

Pillar 2: Novel Technology for Shared Infrastructure and Smart Cities

Pillar 2 formalizes the Cocreation Movement’s vision for the physical and digital foundations of future human settlements. It centers on the concept of "Citizen-Led Smart Cities," where infrastructure is not merely a static utility but a dynamic, shared asset managed through advanced digital twins and innovative financing models. This pillar integrates large-scale industrial corridors with urban-level services, reflecting founder Feras Naser’s extensive background in the railway industry and his role as a trusted authority in the Gulf and Levant regions.



The primary focus is the "Feras Naser Industrial & Economical Corridor," a multimodal corridor connecting Saudi Arabia, Jordan, and Turkey. This corridor is designed to reduce transit times between the Gulf nations and Europe by 40%, enhancing global supply chain resilience and bypassing traditional geopolitical chokepoints. Within this corridor, doctoral candidates will research the development of specialized industrial hubs.

A critical component of this pillar is the research into "Asset Recycling" as a mechanism for closing the infrastructure financing gap. As fiscal constraints mount, governments are increasingly looking to monetization models—where existing public assets like toll roads, ports, or energy grids are leased to the private sector—to fund new, greenfield infrastructure.



The COCREATION-NET will study various asset recycling models, including direct contractual agreements, divestments, and structured financing mechanisms like Infrastructure Investment Trusts (InvITs). This research will directly support the implementation of the India-Middle East-Europe Economic Corridor (IMEC) and the EU's Global Gateway, which together aim to link Asia and Europe through state-of-the-art connectivity.

The integration of smart grid technology and renewable energy into existing transport networks represents a major scientific opportunity. Pillar 2 will investigate the potential of solar-powered rail systems, particularly the direct feed-in of photovoltaic power into the specialized 16.7 Hz railway grid. This research involves the development of multi-megawatt inverters with grid-forming behavior to ensure reliability and resilience. By strategically deploying solar panels along the vast railway network—estimated at over 37 GWp of rated capacity in Germany alone—this system could reduce urban transport energy consumption by up to 30%.

Infrastructure System	Research Technology	Economic Mechanism	Environmental Impact
Industrial Corridor	Digital Twin (DT) & Predictive Logistics.	IMEC strategic partnership and global supply chain diversification.	40% reduction in transit-related emissions.
Smart City Model	FlutterFlow platforms & Citizen-led services (Feras University/Market).	Asset recycling and PPP (Public-Private Partnership) models.	Enhanced urban sustainability and livability.
Resilient Energy Grid	Direct PV feed-in to 16.7 Hz railway networks.	Monetization of railway surface areas for solar generation.	32,920 GWh annual potential energy yield.

The pillar also emphasizes the "S-Twin" (Sustainability-Twin) model, which extends traditional digital twins to explicitly incorporate the United Nations Sustainable Development Goals (SDGs). This research will utilize multi-source heterogeneous data and LSTM (Long Short-Term Memory) neural networks to predict transportation behaviors and optimize resource allocation in real-time. By creating virtual models of physical assets—from unmanned vehicles to entire cities—the network will demonstrate how to achieve supply chain agility and responsiveness in the face of regional instability and geopolitical shocks.

Pillar 3: Self-Organization and Emergence in Venture Architectures

The third pillar of COCREATION-NET provides the organizational and governance framework for the movement, exploring how decentralized systems can replace traditional hierarchies to foster innovation and economic resilience. It investigates the "Self-Organization" of human and artificial agents, seeking to understand the "Emergence" of complex, stable structures from simple local interactions. This is essential for building a "shock-resistant fabric" of small, fast, AI-driven firms that can thrive in a volatile global economy.

A major research focus in this pillar is the development of Decentralized Autonomous Organizations (DAOs) and "Micro-Equity" governance models. DAOs utilize blockchain technology to create transparent, secure, and programmable organizational structures where users are also owners. The research will examine how DAOs can solve the "tragedy of the commons" by providing financial incentives for the maintenance of shared public goods, such as community recycling or city infrastructure. By financializing participation through tokens, communities like the proposed Feras Naser - Shafa Badran City can self-govern and allocate resources without centralized control.

The network will also study "TheBotCompany" model—a multi-agent system (MAS) designed for continuous software and venture development. This system features self-organizing agent teams where manager roles (Strategy, Execution, Verification) dynamically hire and assign worker agents based on specific project needs. Scientifically, the research will compare different coordination mechanisms, such as conversation-based versus pressure-field coordination, with the latter showing significantly higher solve rates in complex reasoning tasks. These MAS architectures are expected to provide the decision-making framework for the movement's industrial corridors and smart cities.



Governance Concept	Technical Implementation	Operational Advantage	Impact on Innovation
DAO (Decentralized Autonomous Org)	Blockchain & Multi-signature Wallets.	Radical transparency and value accrual to participants.	Reduced barriers to entry and lighter regulatory structures.
MAS (Multi-Agent Systems)	Strategy-Execution-Verification state machines.	32% higher accuracy in complex problem-solving.	Specialization and parallel processing for distributed intelligence.
AI-Driven Enterprises (AIDEs)	Low-code tools & Foundation models.	Higher revenue per employee and decentralized job creation.	Diversified resilience and reduced systemic risk in regions.

Furthermore, Pillar 3 investigates the "Rural Renaissance" driven by social entrepreneurship and digital leapfrogging. By integrating satellite connectivity, AI applications, and decentralized solar micro-grids, rural communities can circumvent traditional infrastructure limitations to generate shared prosperity. Research projects will develop "Blended Finance" approaches that address capital gaps for small and growing enterprises, empowering marginalized groups—especially women and youth—as change agents in their communities. This decentralized model positions rural areas as hubs of innovation, reversing long-established urban migration trends.

Integration and Intersectoral Dimension

COCREATION-NET is designed as a highly integrated network that seamlessly weaves together the scientific ambition of its three pillars. The "Excellence" of the proposal lies in its ability to synthesize these diverse fields into a coherent program that addresses the well-identified needs of the European Research Area (ERA). The interdisciplinarity is evident in the project's methodology, which combines chemical engineering (xDL protocols) with urban studies (asset recycling) and computer science (multi-agent systems).

The intersectoral dimension is a cornerstone of the network, with a mandatory involvement of the non-academic sector in the doctoral training. In "Industrial Doctorates" (DN-ID), candidates will spend at least 50% of their fellowship duration at the premises of non-academic partners, such as industrial hubs in Jordan or pharmaceutical labs in Europe. This exposure ensures that the skills acquired better match the needs of the private sector, enhancing the long-term employability of the researchers.

Non-Academic Sector	Role in COCREATION-NET	Specific Research Contribution
Industrial Manufacturing	Host for secondments and industrial pilots.	Development of advanced defense and automotive equipment.
Pharmaceutical/Materials	Providers of real-world synthetic challenges.	Validation of xDL 2.0 and AI-copilot protocols.
Urban Planning Agencies	Managing smart city model implementations.	Application of asset recycling and Digital Twin logistics.
Fintech & Blockchain	Supporting DAO and micro-equity frameworks.	Creation of decentralized incentive systems for public goods.

The research methodology also aligns with the **MSCA Green Charter**, integrating sustainability considerations throughout the project lifecycle. This includes the use of energy-efficient hardware and software, the reduction of single-use plastics in labs, and the prioritization of low-carbon transportation for project-related travel. By adhering to these principles, COCREATION-NET serves as a catalyst for promoting sustainable practices within the research sector.

Training Program: The Cocreation 101-104 Curriculum

The COCREATION-NET training program is designed to provide doctoral candidates with a unique set of core and transferable skills, enabling them to lead the transition to an autonomous, creator-based economy. The curriculum is based on the movement's established "101-104" program, adapted for high-level doctoral research.

- **Cocreation 101: Digital Foundations.** Focuses on Team Building and Brain Storming, building digital platforms (e.g., local newspapers, classifieds) and mastering low-code development tools like FlutterFlow. This provides the baseline "**digital citizenship**" skills necessary to manage community-led services.
- **Cocreation 102: Digital Manufacturing** Introduces advanced manufacturing concepts and digital media workflows. DCs learn to manage the "hardware" of the shared infrastructure.
- **Cocreation 103: AI-Driven Discovery.** Explores advanced concepts such as drug discovery with AI and the use of xDL 2.0 protocols for autonomous laboratory operations. This module bridges the gap between digital skills and high-level scientific experimentation.
- **Cocreation 104: Strategic Governance & Systems.** Focuses on the "operating system" of the smart city, including DAO management, asset recycling models, and multi-agent system coordination.

In addition to these technical modules, the program includes a comprehensive suite of **Transferable Skills Training**:

- **Entrepreneurship and IP Management:** Training on creating AI-driven enterprises (AIDEs), revenue-based finance (RBF), and managing intellectual property in decentralized environments.
- **Open Science and Research Integrity:** Promoting a culture of transparency and adherence to the European Code of Conduct for Research Integrity.
- **Communication and Societal Outreach:** Training in social media engagement, public presentations (e.g., at the HIVE complex), and effective communication with diverse stakeholders.
- **Gender and Diversity Awareness:** Addressing gender balance in research activities and ensuring an inclusive research environment.

The training is delivered through a combination of local training at the host institutions and network-wide activities, such as **Summer Schools, Workshops, and Training Weeks**. These events provide DCs with the opportunity to network with international peers and experts from both academia and industry.

2 Impact

COCREATION-NET will significantly enhance the European Union’s innovation capacity by formalizing a paradigm that empowers citizens and businesses to participate actively in the "Digital Decade". By training a cadre of 15 "Trend-setters" in the Cocreation Movement, the project contributes to the structuring of doctoral training at the European level, promoting international and inter-sectoral mobility as a standard for scientific excellence.

The project’s strategic value lies in its ability to foster stable, long-term collaborations between European research institutions and the burgeoning industrial sectors of the "Southern Neighbourhood" (Middle East and North Africa). This alignment supports the EU Global Gateway’s goal of strengthening research systems across the world and boosting the competitiveness of Europe’s net-zero industry. By integrating these regions into a shared framework for AI-driven discovery and resilient infrastructure, the network mitigates regional conflicts and counters the influence of destabilizing actors through economic integration.



Impact Dimension	Specific Contribution	Policy Driver
Research Capacity	15 highly skilled doctoral candidates with interdisciplinary expertise.	ERA Reform and Enhancement.
Industrial Leadership	Formalized xDL 2.0 standard and autonomous lab protocols.	Green Deal Industrial Plan.

Impact Dimension	Specific Contribution	Policy Driver
Strategic Autonomy	Diversified supply chains via the IMEC corridor and Global Gateway.	EU De-risking Strategy.
Social Inclusion	Decentralized job creation through AI-driven small firms.	Digital Decade Rights & Principles.

Contribution to Researcher Career Perspectives and Employability

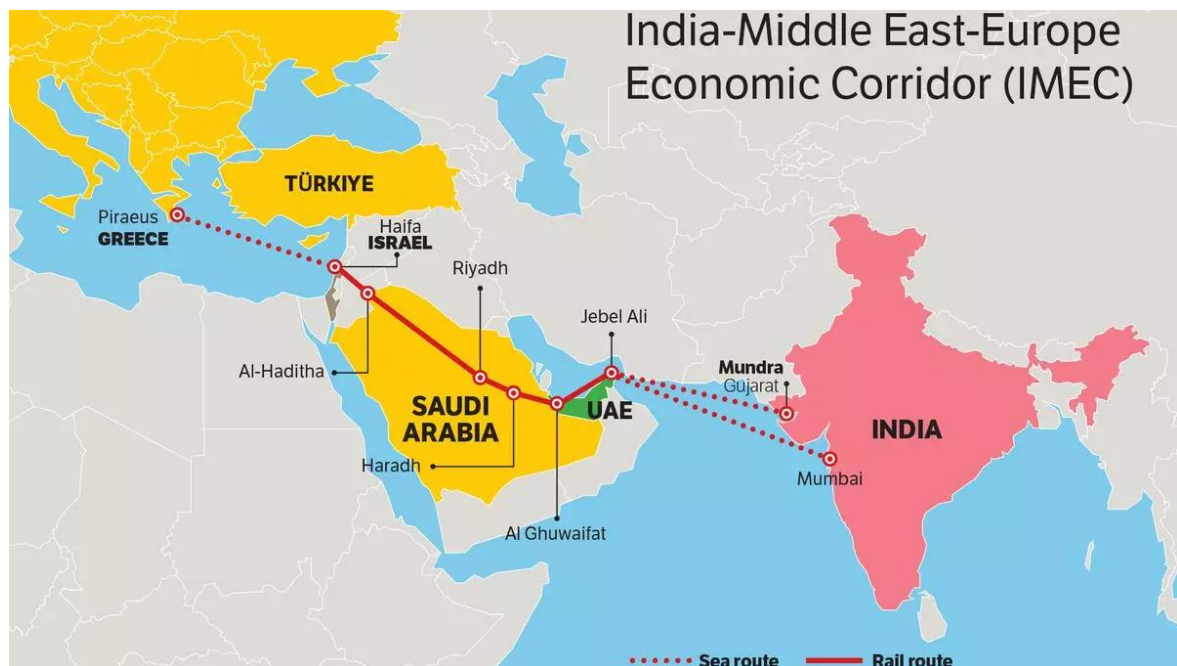
The COCREATION-NET doctoral program is specifically designed to enhance the long-term employability of its graduates. By providing exposure to both academic and non-academic sectors, researchers acquire a portfolio of skills—ranging from high-level scientific reasoning to practical entrepreneurship—that fit the needs of modern industry. Statistics indicate that 77% of MSCA Industrial Doctorate graduates find employment in the non-academic sector within two years of their fellowship, a significantly higher rate than traditional academic tracks.



The "Cocreation 101-104" curriculum, combined with worldwide secondments, ensures that DCs develop a "Global Mindset" and a diverse professional network. The use of the "EURAXESS" portal for recruitment ensures that vacancies are advertised internationally, attracting the best talent to the network. Furthermore, the guidelines on effective supervision and appropriate career guidance provide researchers with the necessary support to build their autonomy and achieve their full potential.

Societal, Economic, and Environmental Impacts

The potential scientific, societal, and economic impact of the Cocreation Movement is profound. By shifting to a decentralized, AI-driven model of job creation, the movement addresses the "Concentration Risk" of relying on a few large employers. Instead, economic strength is derived from a broad base of thousands of small, resilient firms (AIDEs) that can validate and monetize innovations in weeks rather than years. This "Portfolio Effect" allows regions to tolerate individual failures while compounding collective successes, leading to a more diversified and stable economy.



Societally, the movement’s focus on "Citizen-Led Smart Cities" empowers individuals to address their own community’s needs—including security, opportunity, and social cohesion. Platforms like the "Feras Market" and "Local Digital Newspapers" help citizens know each other, announce major events, and show the city's "vibe" to the globe. The inclusion of digital healthcare systems and social services (e.g., "Home Mates Finder") further enhances the wellbeing and social contract within these cities.

Socio-Economic Metric	Targeted Outcome	Mechanism
Job Creation	10,000+ resilient, high-productivity jobs within a decade.	Decentralized AIDEs and "Rural-preneur" micro-grids.
Economic Resilience	Reduced systemic risk through regional diversification.	Asset recycling and blended finance for infrastructure.
Sustainable Growth	30% reduction in transport energy use; 80% in battery synthesis.	AI-driven optimization and solar-rail integration.
Global Connectivity	40% reduction in transit times between Asia and Europe.	IMEC corridor and Global Gateway infrastructure.

The environmental impact is aligned with the European Green Deal's goal of making Europe the first climate-neutral continent by 2050. The project's research into LFP battery optimization and solar-powered rail directly contributes to the decarbonization of the transport and energy sectors. Furthermore, the network's adherence to the "Do No Significant Harm" (DNSH) principle ensures that its activities do not compromise the six environmental objectives detailed under the EU Taxonomy.

Dissemination, Exploitation, and Communication Strategy

A comprehensive plan for the dissemination and exploitation of project results is essential for maximizing the network's impact. The strategy involves a multi-channel approach to reach various audiences, from scientific peers to policymakers and the general public.

- **Dissemination to the Scientific Community:** Results will be published in high-impact, open-access journals and presented at major international conferences in AI, chemistry, materials science, and urban planning. The network will also organize dedicated workshops and a final conference to showcase the cumulative progress of the Cocreation Movement.
- **Exploitation of Research Results:** The "Feras Market" and the "Experts Knowledge Collection System" will serve as platforms for showcasing digital assets and novel ventures created by the DCs. The project will also develop "Asset Recycling Handbooks" and policy briefs to guide governments and investors in the implementation of the IMEC corridor and smart city models.
- **Communication and Outreach:** The "HIVE Complex" in the model cities will act as a hub for youth empowerment and cultural exchange, hosting events that tell the story of the Cocreation Movement. Social media, local digital newspapers, and public engagement activities (e.g., "Social Clubs") will be used to raise awareness of the project's benefits among citizens.

The network will also ensure the "reusability and valorization" of research data through the development of digital twins and open-source xDL 2.0 protocols. By making these tools broadly accessible, COCREATION-NET fosters a culture of innovation and entrepreneurship that lasts beyond the lifetime of the project.

3 Quality and Efficiency of the Implementation

Work Plan and Resources

The COCREATION-NET implementation plan is structured around a four-year (48-month) project duration, with 15 doctoral candidates recruited for 36 months each (totaling 540 person-months). The work plan is organized into six major Work Packages (WPs) that ensure the logical progression from fundamental research to exploitation and dissemination.

WP #	Title	Lead Sector	Primary Objectives
WP1	Project Management	Academic	Financial coordination, administrative reporting, and ethics oversight.
WP2	Autonomous Discovery (Pillar 1)	Non-Academic	Development of xDL 2.0 standards and AI-copilot synthesis protocols.
WP3	Shared Infrastructure (Pillar 2)	Non-Academic	Design of industrial corridor digital twins and asset recycling pilots.
WP4	Self-Organization (Pillar 3)	Academic	Formalization of DAO governance and multi-agent venture architectures.
WP5	Training & Career Development	Academic	Implementation of the Cocreation 101-104 curriculum and secondments.
WP6	Dissemination & Exploitation	Mixed	Scientific publishing, public outreach, and Feras Market launch.

The allocation of resources is designed to be efficient and appropriate for the ambitious goals of the project. Each beneficiary must recruit at least one doctoral candidate and will receive unit contributions covering living, mobility, and (if applicable) family allowances for the researcher. Institutional costs for research, training, and networking are also provided, ensuring that the necessary infrastructure and expertise are available to support the DCs.

Management Structure and Procedures

The network will be governed by a **Supervisory Board (SB)**, which includes representatives from all beneficiaries and associated partners, as well as a representative for the doctoral candidates. The SB is responsible for the overall strategic direction of the network, overseeing recruitment, training, and progress monitoring.

- **Recruitment Strategy:** The selection procedure for doctoral candidates will be open, transparent, and merit-based, in line with the Code of Conduct for the Recruitment of Researchers. Vacancy notices will be widely advertised on EURAXESS and other international platforms.

- **Supervision Arrangements:** Each doctoral candidate will have a dedicated supervisor at their host institution and a co-supervisor at an inter-sectoral secondment site. The **MSCA Guidelines on Supervision** will be followed on a best-effort basis, ensuring effective mentoring and career guidance.
- **Progress Monitoring:** Doctoral candidates will develop a Personal Career Development Plan (PCDP) within the first few months of their fellowship, which will be updated annually through meetings with their supervisors.

Management Body	Composition	Main Function
Supervisory Board (SB)	Beneficiaries, Associated Partners, DC Rep.	Network governance, progress oversight, and quality control.
Training Committee	Academic and Non-Academic leads.	Oversight of the 101-104 curriculum and network-wide training.
Exploitation Board	Industrial partners and Founder Feras Naser.	Managing the transfer of results to market and the Feras Cities.
Gender & Ethics Office	Dedicated specialists.	Ensuring diversity balance and adherence to ethical guidelines.

Quality and Capacity of the Participating Organizations

The COCREATION-NET consortium brings together a critical mass of expertise from across Europe and the Middle East. The participating organizations include premier research universities, world-class research infrastructures (e.g., Fraunhofer ISE), and innovative businesses ranging from SMEs to large industrial complexes.

- **Academic Partners:** Lead the fundamental research in AI, social governance, and institutional economics, and award the doctoral degrees. Institutions like Feras University provide the "online and remote" educational quality equivalent to Top 10 global universities.
- **Non-Academic Partners:** Provide the "real-world" laboratories for the Cocreation Movement, including the Feras Naser Industrial & Economical Corridor and autonomous labs for material synthesis. These partners organize secondments and offer practical training in transferable skills like defense manufacturing and railway engineering.

The consortium as a whole brings together all the necessary expertise to implement the project's three pillars. The involvement of partners from "Widening Countries" (e.g., Jordan, Turkey) strengthens the European Research Area by spreading excellence and promoting inclusive societal growth.

Risk Assessment and Contingency Planning

The project management structure includes a proactive risk assessment and mitigation framework to ensure the feasibility of the overall project.

- **Technical Risks:** The primary technical risk is the potential for AI models to produce hallucinations or unsafe protocols in chemical synthesis. *Mitigation:* The network will implement the "verification phase" from TheBotCompany model and CLAIRify program verification to ensure syntactically valid and safe programs.
- **Institutional Risks:** Delays in the recruitment of DCs or the accreditation of joint doctoral programs (for DN-JD). *Mitigation:* Utilizing established recruitment channels (EURAXESS) and requiring mandatory "letters of pre-agreement" for joint degrees during the application phase.
- **Geopolitical Risks:** Instability in the Middle East region affecting the industrial corridor or the safety of seconded researchers. *Mitigation:* Continuous monitoring of regional conditions and the use of "Digital Twins" to allow for virtual collaboration and remote experimentation when physical access is limited.
- **Sustainability Risks:** Failure to maintain the network or platforms beyond the funding period. *Mitigation:* The use of DAO-based financing and the "Feras Market" exploitation plan ensures that the Cocreation Movement is self-sustaining and value-generative.

By integrating these robust implementation measures, COCREATION-NET provides a high-quality environment for doctoral training, ensuring that the ambitious goals of the Cocreation Movement are achieved with excellence and efficiency.

Conclusion

The COCREATION-NET Doctoral Network is a strategically significant initiative that formalizes the Cocreation Movement within the Marie Skłodowska-Curie Actions framework. By synthesizing three pioneering research pillars—Productive Human-Machine Interaction, Shared Infrastructure, and Self-Organization—the network addresses the most pressing socio-economic and technical challenges of our time. It provides a unique, intersectoral training program that transforms doctoral candidates into the "Ruralpreneurs" and AI architects of the future, capable of bridging the gap between scientific inspiration and real-world implementation.

The project aligns with the highest standards of the European Research Area, promoting excellence through the "xDL 2.0" chemical standard, the resilient "Asset Recycling" model for smart city infrastructure, and the innovative "DAO" governance for decentralized economies. Through its strategic focus on the IMEC corridor and the EU Global Gateway, the network enhances Europe's global competitiveness and supports the sustainable development of its partner regions. Ultimately, COCREATION-NET serves as a catalyst for a global wave of citizen-led smart cities, ensuring that the vision of a creator-based, autonomous society becomes a tangible reality for citizens worldwide.