

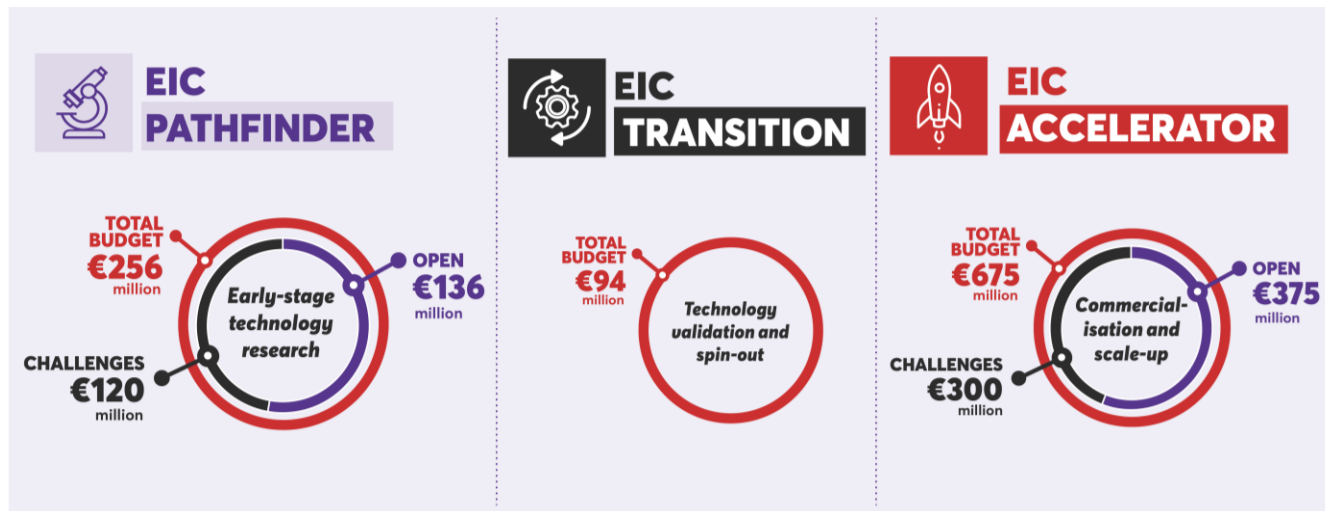


Tips prácticos para la preparación de propuestas EIC Pathfinder (Open)



Índice de contenidos

1. Haciendo memoria....
2. Consejos prácticos EIC Pathfinder
3. Información y enlaces de interés



Índice de contenidos

1. Haciendo memoria..... El EIC



Haciendo memoria ... El EIC

- ▶ El comisario de Investigación, Ciencia e Innovación, Moedas anunció su visión para la iniciativa EIC en junio de 2015.

«Mediante el Consejo Europeo de Innovación (EIC) apoyamos las tecnologías de vanguardia, futuras y emergentes, que son la clave para desvelar muchos de los secretos que nos llevarán a una sociedad y a un futuro mejores. Estamos invirtiendo en ideas innovadoras y en las personas que las ponen en marcha para crear los nuevos mercados del futuro».



<https://youtu.be/51uohQ0nwXc>, Pilot phase

<https://cutt.ly/uxYAlEj>, EIC impact report to find out more about the EIC pilot

<https://eic.easme-web.eu/>, European Innovation Council (EIC) datahub

Haciendo memoria ... El EIC

- ▶ Evento de lanzamiento del EIC 18/03/21 (ya no es un piloto), Ursula Von der Leyen, presidenta de la Comisión Europea.

«Los europeos somos muy buenos en hacer ciencia con dinero, pero no en hacer dinero con la ciencia».



<https://www.youtube.com/watch?v=UeB-wPksDxk&t=76s> Launch ceremony of the European Innovation Council

Haciendo memoria ... El EIC

PILAR 1 – Excellent Science		PILAR 2 – Global challenges and European industrial competitiveness		PILAR 3 – Innovative Europe	
	25.011		53.516		13.597
ERC – European Research Council	16.004	Clúster 1 - Health	8.246	EIC- European Innovation Council	10.105
MSCA - Marie Skłodowska-Curie Actions	6.602	Clúster 2 - Culture, Creativity and Inclusive Society	2.280	European innovation ecosystems	527
Research infrastructures	2.406	Clúster 3 - Security	1.596	EIT - European Institute of Innovation and Technology	2.965
		Clúster 4 - Digital Industry and Space	15.349		
		Clúster 5 - Climate Energy and Mobility	15.123		
		Clúster 6 – Food, bioeconomy, natural resources, agriculture and environment	8.952		
		JRC – Joint research centre	1.970		

Widening participation and strenghtening the European Research Area	
	3.393
Widening participation and spreading excellence	2.955
Reforming and enhancing the European R&D system	438

+ 5.000 M€ Next Generation EU

+ 4.000 M€ (political agreement MFP)

Haciendo memoria ... El EIC



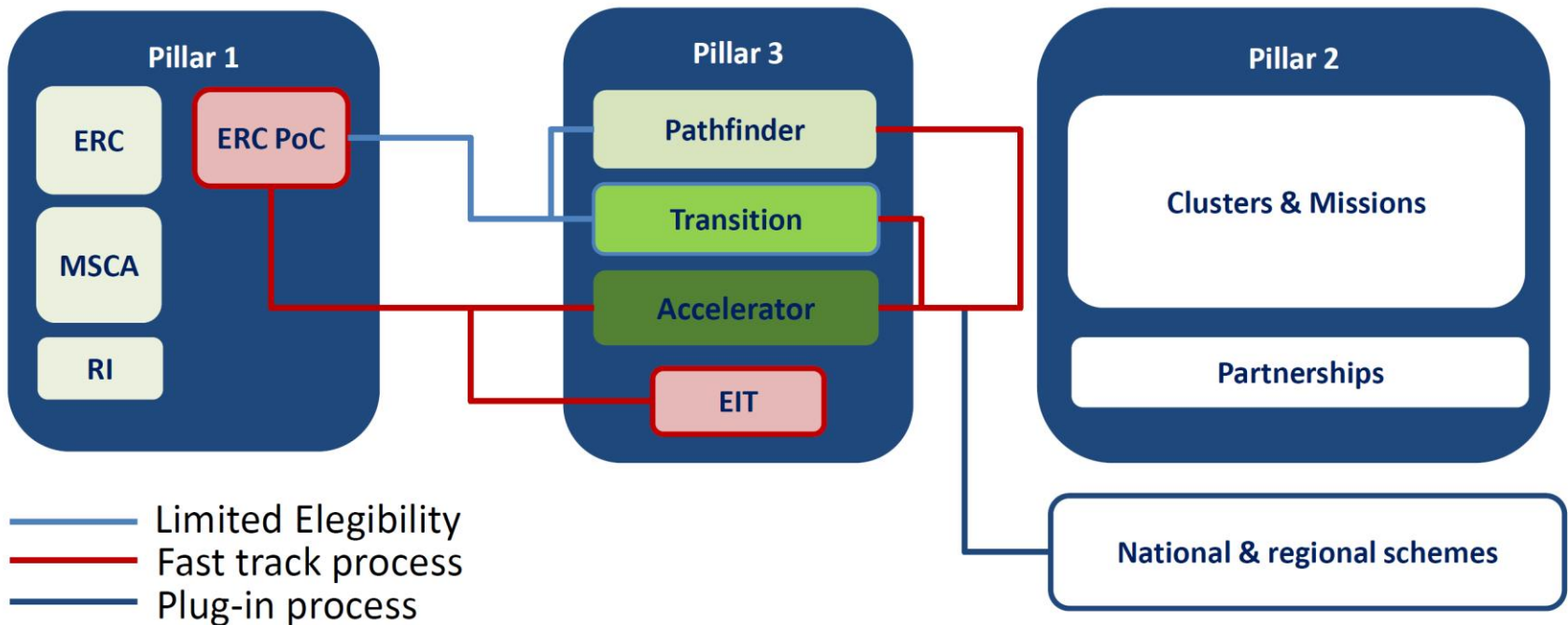
EIC: From idea to market

Haciendo memoria ... El EIC

<https://youtu.be/X5ZAJ3psZI>



Haciendo memoria ... El EIC



EIC: Interactions with its environment

Haciendo memoria ... El EIC

Pipeline of Opportunities	EIC funding scheme	Policy & economic drivers
<ul style="list-style-type: none">Scientific breakthroughs creating new technology opportunities	Pathfinder	<ul style="list-style-type: none">Properties and limits of technology not understood
<ul style="list-style-type: none">Opportunities for innovations from ERC and EIC Pathfinder, etc	Transition	<ul style="list-style-type: none">Still significant effort to mature the technology and demonstrate it in relevant environmentLack of business case for specific technology applicationsNeed to engage with commercial partners or design the venture to take the technology forward to commercialisation
<ul style="list-style-type: none">Start-ups/spinouts from EIC (Pathfinder, Transition), other parts of Horizon Europe (Fast Track), national programmes (Plug In)Opportunities from the market (start-ups, spinouts)	Accelerator	<ul style="list-style-type: none">EU policy objectives to be met by disruptive innovationsEnsuring EU players in emerging strategic technologiesIncumbents blocking the development of disruptive innovations

EIC: Serves EU political priorities

Haciendo memoria ... El EIC



Haciendo memoria ... El EIC

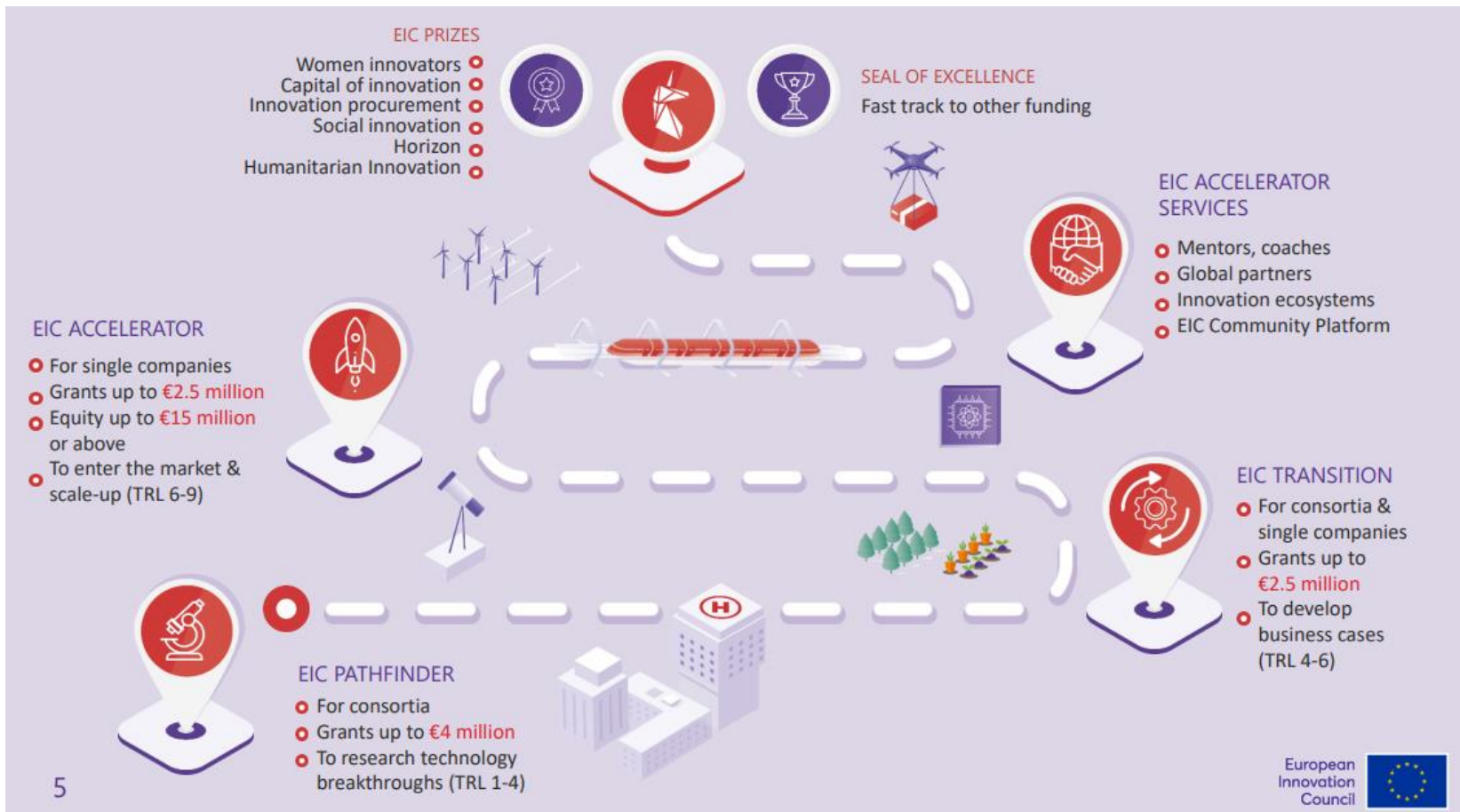
“The 12 unicorns and 112 centaurs supported, and the over €10 billion investments attracted into European deep tech illustrate the growing impact of the European Innovation Council. Its work programme for 2023 will keep delivering funding for deep tech start-ups, increasing talent flows and improving Europe’s innovation ecosystem”.

**Mariya Gabriel, Commissioner for Innovation, Research,
Culture, Education and Youth - 07/12/2022**

[EIC Impact report 2022](#) [EIC Tech report 2023](#)

[Stories: Europe broke records for Unicorns in 2021 – Discover who are the EIC-funded Unicorns and Centaurs](#)

Haciendo memoria ... El EIC



Índice de contenidos

2. Consejos prácticos - EIC Pathfinder



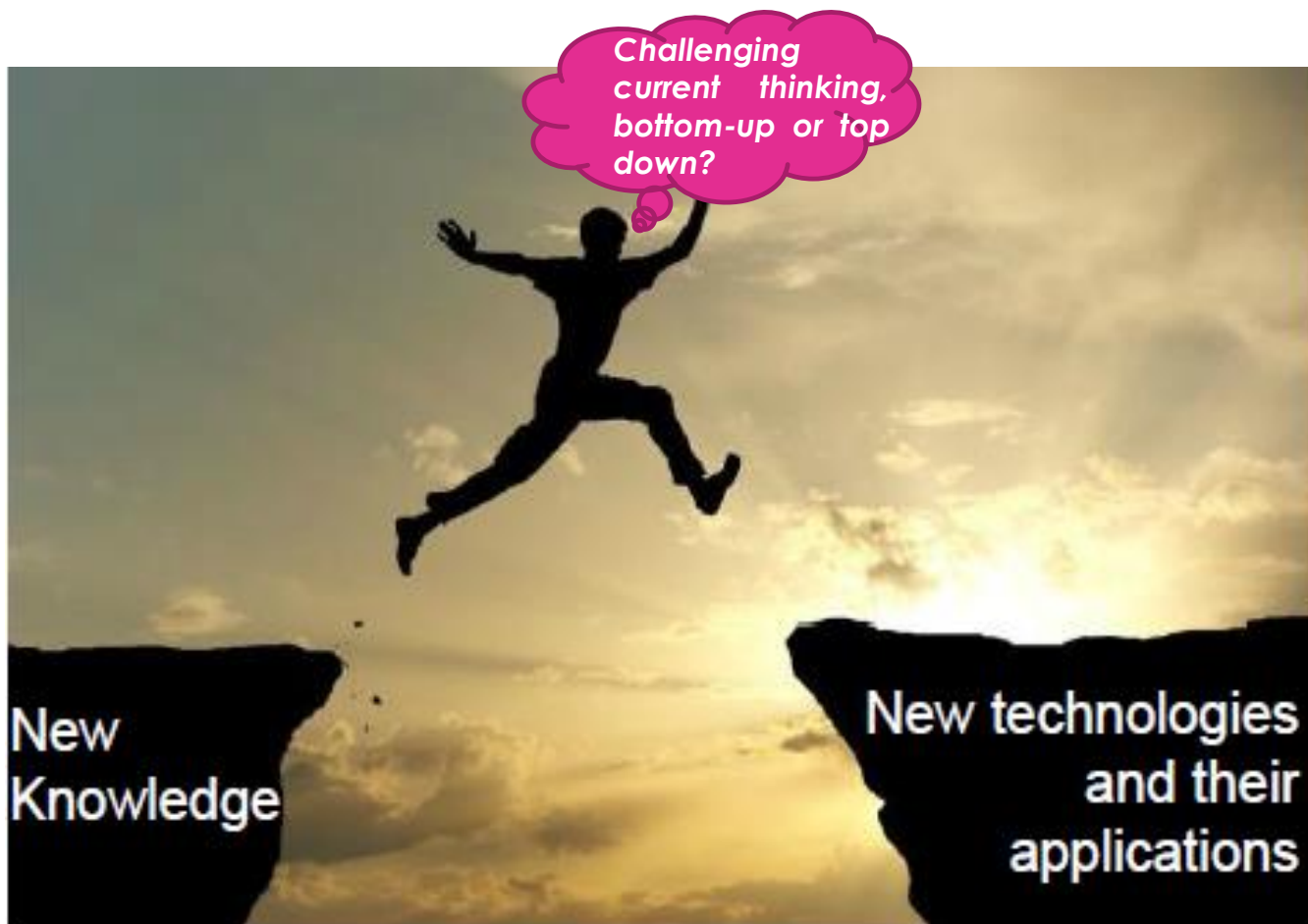
EIC Pathfinder en Horizon Europe

► What is the **EIC Pathfinder**?

The EIC Pathfinder programme funds research to develop the scientific basis to underpin breakthrough technologies.

The EIC Pathfinder supports the **exploration** of bold ideas for **radically new technologies**. It welcomes the **high-risk / high gain** and **interdisciplinary** cutting-edge science collaborations that underpin **technological breakthroughs**.

EIC Pathfinder - entender el programa



EIC Pathfinder en Horizon Europe

“Valley of Death”

Universities
and National
Laboratories

Corporations

Discovery

Basic
Research

Applied
Research

Product
Development

Production

EIC funding opportunities

EIC Pathfinder Open

- ▶ **Open calls** => bottom-up approach calls with no predefined topics



✓ **EIC Pathfinder Open** => Any field of science, technology or application without predefined thematic priorities (*FET-Open en H2020*). 136,00 M€ in 20214 (179,50M€ in 2023,183M€ in 2022).

- Future technology with the potential to **generate a real change** in our way of living.
- Based on a **scientific discovery** that can make it become feasible.
- Developed under a interdisciplinary collaboration for each a **proof of principle** that would **validate** the basis of the technology.

TO GENERATE NEW TECHNOLOGIES WITH *HIGH INNOVATION POTENTIAL*

EIC funding opportunities

EIC Pathfinder Open

► **Ficha convocatoria 2023**, [enlace Participant Portal](#)



- RIA (100% funding)
- Up to 3M€ per proposal, **20 pages**
- **Collaborative project** (min. 3 participants from 3 MS or AC), **36 months on average***.
- Aiming a proof of principle as project output (TRL up to 4).
- **Annex 7** defines special IP clauses (EIC policy of Open Access and IP rights)
- **Annex 6** defines extra 50K€ adhoc grants for complementary portfolio activities or to explore commercialisation paths"
- Interactions with EIC Programme Managers
- EIC Accelerator via Fast Track. EIC Transition.
- To participate in the 'Next Generation Innovation Talents' scheme
- **Deadline: 07/03/2023. Call already opened**

EIC Pathfinder Open

- **Lo primero:** ¿para qué sirve el EIC Pathfinder OPEN?
- Las tres preguntas:
 - ¿Tienes una idea con visión de desarrollar una tecnología futura que pueda generar **un cambio real** en nuestras vidas?
 - ¿Contempla esa idea el logro de una **ruptura científica viable** que haga que ese desarrollo tecnológico sea posible?
 - ¿Imaginas una **colaboración interdisciplinaria** con un grupo de investigadores e innovadores para desarrollar una **proof of principle** que pueda validar las bases de esta tecnología futura?

EIC Pathfinder Open

- How FET transitioned into the EIC Pathfinder - by Jerzy Langer
<https://ec.europa.eu/digital-single-market/en/news/how-fet-transitioned-eic-pathfinder-jerzy-langer>
- “EIC Pathfinder Open supports early stage development of (...) future technologies, based on high-risk/high-gain science-towards-technology breakthrough research (**‘deep-tech’**). This research must provide the foundations of the technology you are envisioning.”
 - Deep tech is technology that is based on cutting-edge scientific advances and discoveries.
 - Whereas ‘high tech’ is characterised by the complexity of technology integration, and thus driven by engineering, **deep tech** and is characterised by the need is science-driven to stay at the technological forefront by constant interaction with new ideas and results from the lab.
 - Deep tech is distinct from “high tech” which tends to refer only to R&D intensity.

La idea de “Deep tech” es la de identificar **“disruptive solutions”** que es la principal diferencia con el concepto de High tech. [See EIC Impact Report 2022.](#)

EIC Pathfinder Open

- “EIC Pathfinder Open involves **interdisciplinary** research and development”.
- “The expected outcome of your project is the **proof of principle** that the main ideas of the envisioned future technology are feasible, thus validating its scientific and technological basis. Project results should include top-level scientific publications in **open access**.”
- TRL de 3 a 4: (En EIC Transition y EIC Accelerator el TRL esperado es superior)
 - TRL1 - basic principles observed
 - TRL2 - technology concept formulated
 - TRL3 - experimental proof of concept
 - **TRL4 - technology validated in lab**
 - TRL5 - technology validated in relevant environment
 - TRL6 - technology demonstrated in relevant environment
 - TRL7 - system prototype demonstration in operational environment
 - TRL8 - system complete and qualified
 - TRL9 - actual system proven in operational environment

En general continúa sin cambios el “enfoque FET” en el Pathfinder en HE

EIC Pathfinder Open

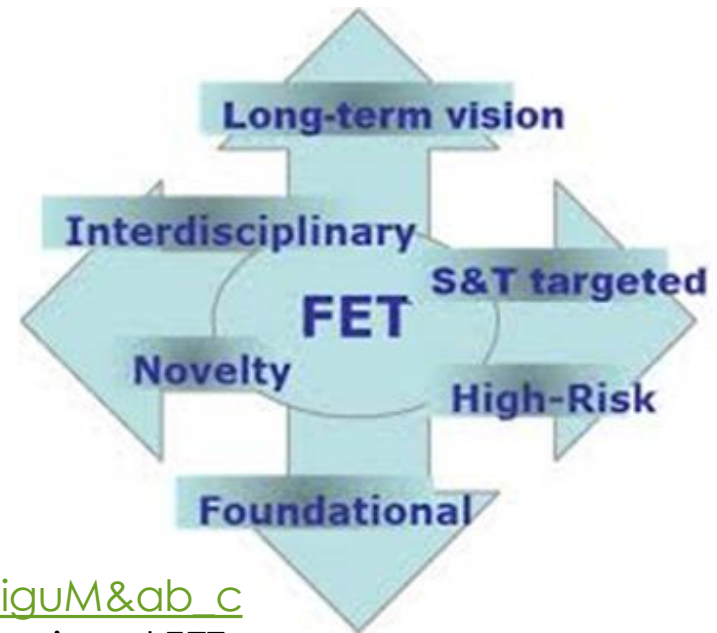
- Innovations that significantly harm the environment (and therefore contravene the 'do not significant harm' principle of the EU Taxonomy Regulation), social welfare or that are primarily designed for military applications, or in other fields which are generally excluded from EU funding pursuant to Article 18 Horizon Europe Regulation, **will not be funded (see Annex 2)**. Research proposals within the scope of Annex I to the Euratom Treaty, namely those directed towards nuclear energy applications, must be submitted to relevant calls under the Euratom Framework Programme.
 - *"Do no harm" principle. Projects are considered to significantly harm (taking into account, if appropriate, the production, use and end of life of their products and services): a) climate change mitigation, where the project leads to higher greenhouse gas emissions as compared to typical standards in similar economic activities sectors; b) the sustainable use and protection of water and marine resources, where the project is detrimental to the good status of bodies of water or marine waters; c) the circular economy, including waste prevention and recycling, where the project generates more waste or uses more natural resources (including non-renewable energy sources) as compared to typical standards in similar economic activities sectors, or where the long-term disposal of waste may cause significant and long-term harm to the environment; d) pollution prevention and control, where the project leads to a significant increase in the emissions of pollutants into air, water or land, as compared to typical standards in similar economic activities sectors; e) the protection and restoration of biodiversity and ecosystems, where the project is significantly detrimental to the conservation status and resilience of ecosystems, habitats and species.*

EIC Pathfinder Open Vs FET-Open en H2020 “Gatekeepers”

What it takes to succeed in FET OPEN

Timo Hallantie´s blog – Head of Unit FET / EIC Pathfinder

- **Long-term vision**
- **Scientific and technological breakthrough (target)**
- **Novelty**
- **Foundational**
- **High-risk**
- **Interdisciplinary**



https://www.youtube.com/watch?v=t8dAJvoiguM&ab_c hannel=EUScience%26Innovation Vídeo promocional FET-Open

Gatekeepers in FET-Open (H2020)

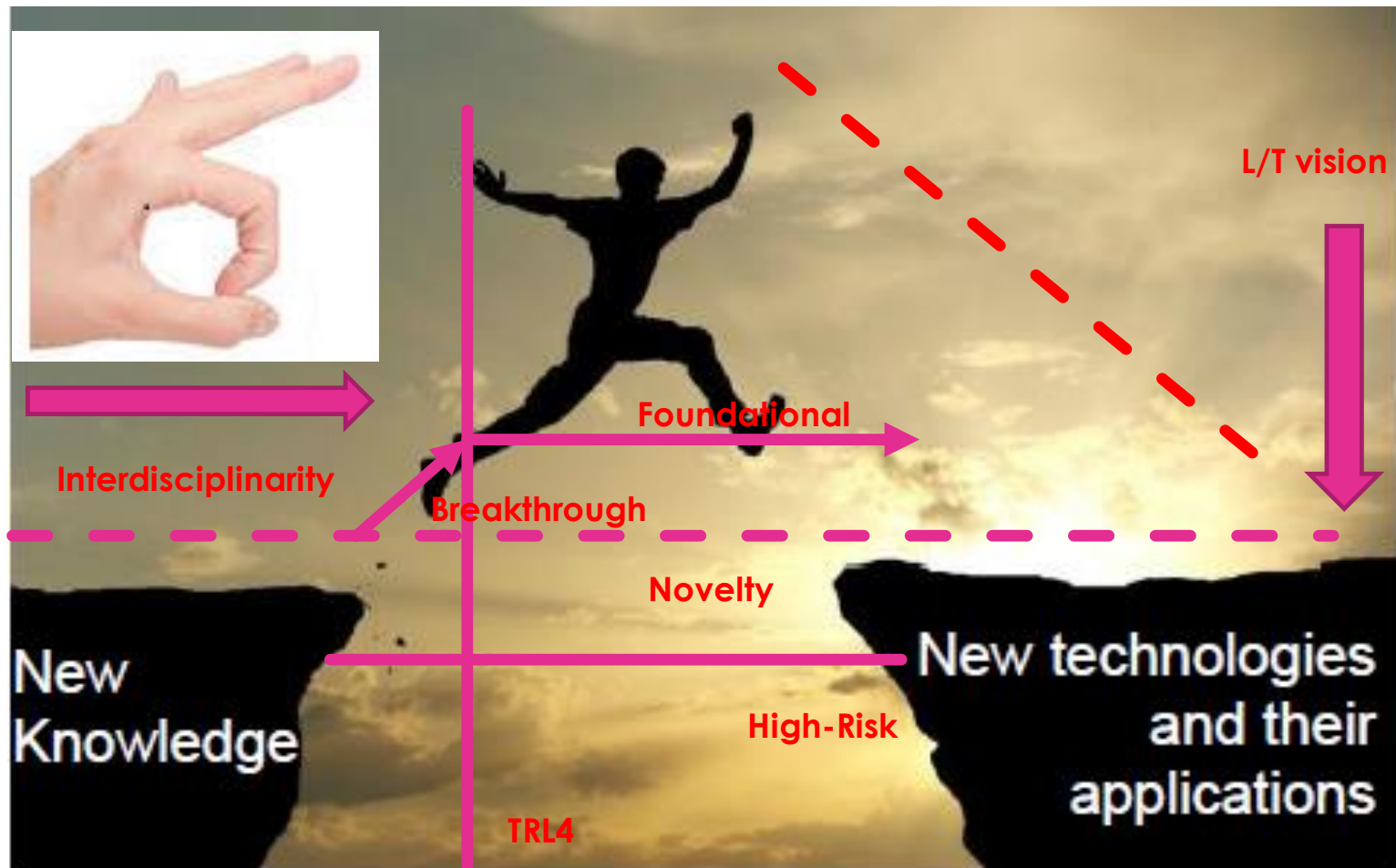
EIC Pathfinder Open - Vs FET- Open en H2020 “Gatekeepers”

Definición en página 23 WP EIC 2024: Before applying to this call you should verify that your proposal meets all the following essential characteristics ('Gatekeepers'):

- Convincing **long-term vision** of a **radically new technology** that has the potential to have a **transformative positive effect** to our economy and society.
- Concrete, **novel** and ambitious **science-towards-technology breakthrough, providing advancement** towards the envisioned technology.
- **High-risk/high-gain** research approach and methodology, with concrete and plausible objectives.

*EIC Pathfinder Open involves **interdisciplinary research and development**. By bringing diverse areas of research together, often with different perspectives, terminologies and methodologies, within individual projects and within a portfolio of projects, really new things can be generated and entirely new areas of research can be opened up. **It is up to you to compose the team that you need, that you can learn from, and that you can move forward with.***

EIC Pathfinder Open: “Gatekeepers”



EIC Pathfinder Open: Lectura reomendada



EIC Pathfinder Open

Interview with Timo Hallantie,
Head of Unit at EISMEA, responsible for the EIC Pathfinder

Publication Information

This report was produced under the framework of ACCESS2EIC, the official network for Horizon Europe National Contact Points (NCP) for the European Innovation Council (EIC). ACCESS2EIC's prime objective is to provide support and specialised services to NCPs and participants in the EIC. For enquiries regarding this report please contact us at www.access2EIC.eu



Timo Hallantie graduated from the Helsinki University of Technology. He joined the European Commission in 1998 and held various positions in its Directorate-General for Communications Networks, Content and Technology (DG CNECT). In 2014 he became Head of Unit at the Research Executive Agency, in charge of the Future and Emerging Technologies Open scheme. Since April 2021 he is Head of Unit at the European Innovation Council and SMEs Executive Agency responsible for the EIC Pathfinder programme.

Access2EIC: Thank you very much for this opportunity to talk to us! As NCPs, we are contacted by many potential applicants on a daily basis, and some questions come up particularly frequently. This is why, we would like to discuss some points we get most frequently asked and tease a few tips for our applicants out of you.

Timo: Thank you for having me here. I am looking forward to your questions.

WHAT MAKES AN IDEAL EIC PATHFINDER OPEN PROJECT?

When is the ideal starting point (e.g. Technology Readiness Level, TRL) for an EIC Pathfinder Open project? When would an idea / project be too advanced?

Projects funded under EIC Pathfinder Open must aim at achieving a concrete, novel and ambitious breakthrough that enables the sought-after step from science to technology. It is expected that at the end of your Pathfinder project, you

Interview with Timo Hallantie, Head of Unit at EISMEA responsible for the EIC Pathfinder (doc de 2023)

EIC Pathfinder Open - La evaluación

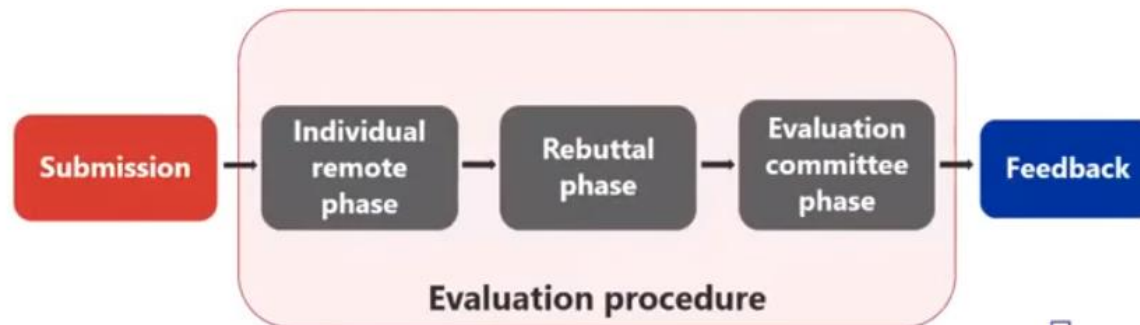
Criterios de desempate (por orden)

- Higher score under the criterion Excellence;
- Higher score under the criterion Impact;
- Gender balance among the work package leaders as identified in the proposal;
- Number of applicants that are SMEs;
- Number of Member States and Associated Countries represented in the consortium;
- Other factors related to the objectives of the call to be determined by the evaluation committee.

EIC Pathfinder Open - La evaluación

- Envío de solicitud a través del **“EU Funding and Tender portal”** antes de la **fecha límite: 7 de marzo de 2024**.
- Descargarse el **“template”** específico del EIC Pathfinder OPEN.
- Máximo de **20 páginas en las secciones 1-3 de la parte B**.
- **Resultados** después de **5 meses** tras la deadline.
- Si la propuesta se propone para financiar el proyecto se puede **firmar a los 8 meses de la deadline**.

How does the EIC decide if your proposal will be funded?



EIC Pathfinder - ¿encajo de verdad?

► Aunque sean 20 págs:

- Comprovar otros WPs (de otros pilares) y otras calls del EIC. No sólo ICT.
- No ir aplicando a ver si suena la flauta.... **¡Peligro de quemadura!**
- FET Vs ERC: colaboración multidisciplinar, **ciencia y tecnología** son claves.
- ¡Que no se haya investigado el tema antes puede no ser suficiente (novedad)!
- FET no es sólo el objetivo final a largo plazo de un roadmap industrial (se requiere **multidisciplinariedad** y **novedad**).
- La visión a largo plazo es clave pero también **la idea realista** de cómo llegar donde queremos.
- Escribir una buena propuesta Pathfinder Open es como (o peor) escribir una buena publicación (Q1).

EIC Pathfinder - ¿encajo de verdad?

- ¿**Voy a explotar en mercado a c/p?** Grado de innovación (**¡hay que decirlo!**)
- *Expected impact: no cumplirlo todo perse sino **contribuir a ello**.*
- *No basta con ser bueno en Pathfinder hay que **diferenciarse del resto**.*
- El investigador es el que conoce el **estado del Arte** y lo que realmente supone una idea rompedora con respecto a su tema de investigación que suponga un impacto clave.
- **La EC jamás financiará 2 veces lo mismo.**
- Una buena idea Pathfinder Open debe identificar **los primeros pasos para desarrollar una tecnología futura pero no para mejorar lo que ya existe!**
- Esos primeros pasos de una futura tecnología además deben tener un **componente disruptivo**, es decir, de hacerse una realidad debería **desplazar la tecnología actualmente existente**.

EIC Pathfinder - ¿Comparaciones (odiosas)?

Pathfinder vs ERC

- Proyectos monobeneficiarios/proyectos en consorcio
- Componente científico-tecnológico.
- Importancia del CV de los IP del proyecto.
- Diferencias de los criterios de evaluación y enfoque de las propuestas (ERC= criterio excelencia frente a los otros dos).



European Research Council

Established by the European Commission

Pathfinder vs MSCA

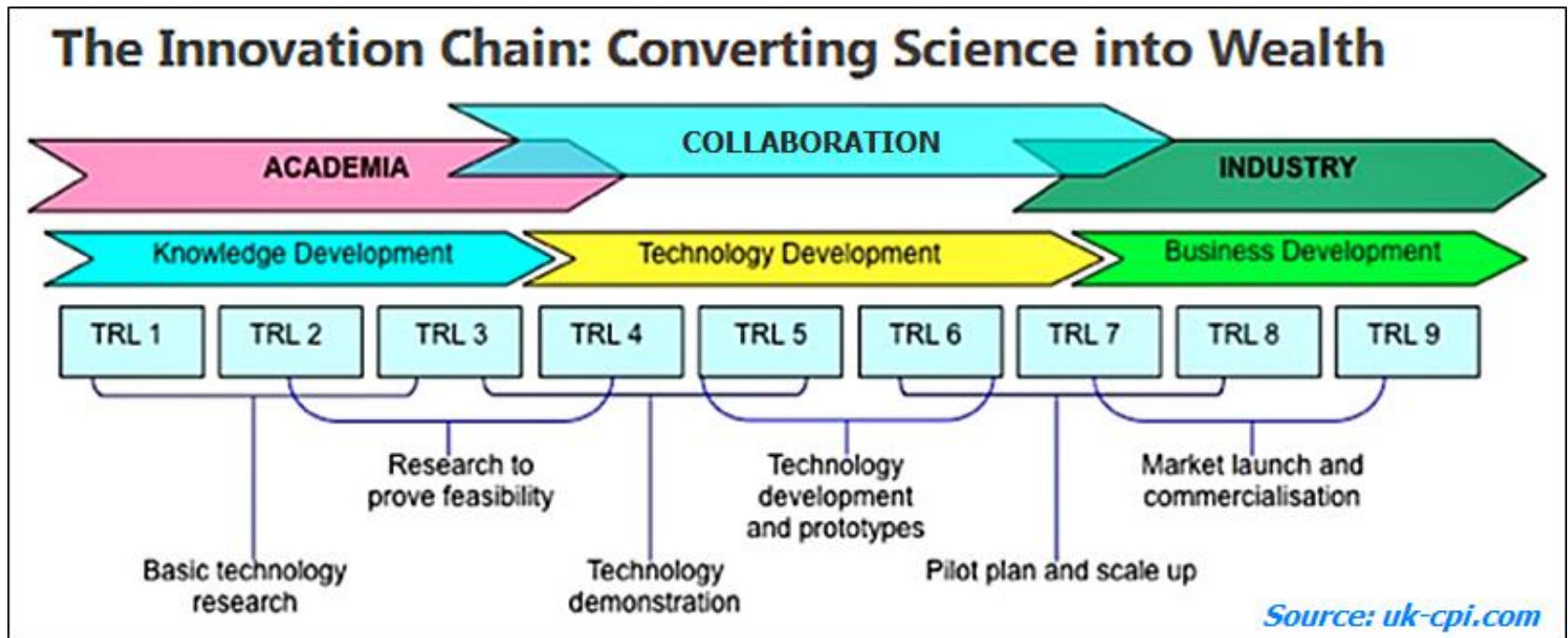
- Proyectos monobeneficiarios/proyectos en consorcio.
- Finalidades principales distintas (Movilidad&formación/identificación de tecnología futura).
- Importancia del CV de los IP del proyecto.



EIC Pathfinder – Recomendaciones generales

- Importancia del **potencial innovador** :
 - Acciones específicas adicionales para **estimular la explotación de resultados** de la investigación en proyectos FET. ¡**Innovation Launchpad desde 2016 y ahora EIC Transition!**
 - Fomento de la participación de **nuevos actores: jóvenes investigadores excelentes, high-tech SMEs, mujeres, newcomers.**
- **Investigación e Innovación Responsable (RRI)**: Compromiso con la sociedad: La investigación como algo abierto, creativo y cercano a la sociedad.
 - Actividades de **Outreach y Public engagement**
 - Integración en los proyectos de una **dimensión ética y de género.**
 - Desarrollo de **formal and informal science education.**
- **Acceso a los resultados de la investigación.** FET dentro ya estuvo dentro del **Open Research Data.** [FAIR Data Management.](#)
- Pathfinder abierto a la **colaboración** global.
- **The three O's.** Innovation, science, world.

EIC Pathfinder - Technology readiness levels (TRLs)



EIC Pathfinder - Technology readiness levels (TRLs)

▶ Technology readiness levels (TRL)

Definiciones de la NASA

- ▶ **TRL 1 –basic principles observed**
- ▶ **TRL 2 –technology concept formulated**
- ▶ **TRL 3 –experimental proof of concept**
- ▶ **TRL 4 –technology validated in lab (para Pathfinder Open, en Challenges según challenge)**
- ▶ TRL 5 –technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- ▶ TRL 6 –technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- ▶ TRL 7 –system prototype demonstration in operational environment
- ▶ TRL 8 –system complete and qualified
- ▶ TRL 9 –actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

EIC Pathfinder - Qué es Pathfinder Open y qué no?

WHAT IS FET-RESEARCH?

- it focuses on **new ideas** which are **foundational** and may have a transformative character,
- it is **risky** (possibility to fail),
- it is **bottom-up** (defined by researchers),
- it is **interdisciplinary**,
- it is **purpose-driven** and aims at **technology** development,
- it is **collaborative** and involves researchers from different countries.

WHAT IS IT NOT?

- it is not **mainstream research**,
- it is not about **small changes** to existing models or approaches,
- it does not rely on **track record** alone,
- it is not **pure basic science**,
- it does not follow a **policy agenda** or **pre-defined topics**,
- it is not **discipline-oriented research**.

https://www.fet-traces.eu/traces-wAssets/docs/FET_Traces_final_report_2018.pdf

EIC Pathfinder – Recomendaciones generales

- No aplicar a muchos *topics* para ver si tengo suerte!!
- Quien evalúa puede no ser un gran experto en el tema.
- No dar nada por entendido ya que quien evalúa se basa sólo en aquello que lee (**lo que escribo es lo que cuenta**).
- Evaluadores en condiciones “**espartanas**”; 3-5 / día).
- Mucho texto no implica que se entienda mejor, ¡**enfoque!**
- **No** hacer servir un **inglés excesivamente técnico**.
- No incluir **lenguaje político**.
- Ojo con el marco legal vigente (Europeo y nacional).
- Evitar el uso del condicional, debemos mostrar determinación (**shall Vs will**).
- Mi propuesta **no es la Σ de “n” partes!**
- El evaluador debe comprobar las referencias.



EIC Pathfinder –Recomendaciones generales

Escribir todo lo necesario para que el objetivo sea entendible (SMART).

Responder claramente a **los criterios de evaluación**.

Claridad en los resultados, métodos y deliverables.

Presentar una propuesta **compacta y consistente** (1 redactor).

Intentar **atraer la atención** (primeras páginas).

Encontrar un buen título/acrónimo y vigilar el **look & feel**.

Lenguaje **claro, simple y preciso**. Gráficos y tablas.

Repartir el esfuerzo durante toda la propuesta.

Maximizar el encaje con el topic (encaje total).

Consortio convincente (roles).

Open Science.



EIC Pathfinder – Recomendaciones generales

▶ Ejemplos de acrónimos sugerentes:

- NEA-TASHA: Novel Evolutionary and Agent-based – Techniques for Automated Safety and Hazard Analysis
- ADAM: Adaptation And Mitigation Strategies: Supporting European climate policy
- ALARM: Assessing LARge-scale environmental Risks with tested Methods
- AMEDEUS: Accelerate MEmbrane DEvelopment for Urban Sewage purification
- CONQUER: Contrast by Quadrupole Enhanced Relaxation
- DISCOVERER: DISruptive teChnOlogies for VERy low Earth oRbit platforms
- TRANSPIRE: Terahertz RAdio communication using high ANisotropy SPIn torque REsonators

EIC Pathfinder – Recomendaciones generales

- Importancia de incluir **“nuevos actores”**: SME (incl. start-ups), mujeres, jóvenes investigadores y newcomers.
- Importancia **critérios de desempate** Horizon Europe (ver los de Pathfinder Open).
- Importancia de los **“CVs”** en la propuesta (e-forms).
- Se espera que los proyectos tomen las medidas necesarias para proteger aspectos de **IPR**.
- **Confección del consorcio**:
 - ¿Incluir socio de tercer país, p.e USA? Participación de entidades de terceros países.
 - ✓ Financiado por UE.
 - ✓ No financiado pero proyecto sigue.
 - ✓ Socio con financiación propia.
 - ✓ Posible solución: Inclusión de un “Advisory Board”.
 - Socios UK?
 - Incluir empresa, PYME, socio industrial.

Ejemplos de proyectos FET (aplicables a EIC Pathfinder OPEN)

Ejemplo 1: Idea rompedora que nadie ha intentado antes, rozando la “ciencia ficción”: Proyecto Luminous – Measuring and Altering Consciousness in the Electrical Brain. Coordinado por Starlab: <http://www.luminous-project.eu/>

Luminous project <http://www.luminous-project.eu/>
Measuring and Altering Consciousness in the Electrical Brain

The diagram shows a spectrum of consciousness states represented by colored circles connected by a horizontal line. From left to right, the states are: Lucid dream (blue), REM sleep (light blue), Light sleep (yellow), Deep sleep (orange), General anesthesia (dark orange), Coma (red), Minimally Conscious state (pink), Vegetative state (purple), Locked-in state (dark purple), and Foetus (brown). A large question mark is positioned to the right of the Foetus state. Below the spectrum, several images illustrate experimental setups: a person in a lucid dream, a person in REM sleep, a person in light sleep, a person in deep sleep, a person in general anesthesia, a person in a coma, a person in a minimally conscious state, a person in a vegetative state, a person in a locked-in state, and a person in a foetus-like state.

Lucid dream
REM sleep
Light sleep
Deep sleep
General anesthesia
Coma
Minimally Conscious state
Vegetative state
Locked-in state
Foetus
Animal
Machine

LUMINOUS H2020 FET PROJECT | STARLAB LIVING SCIENCE | BARCELONA

3

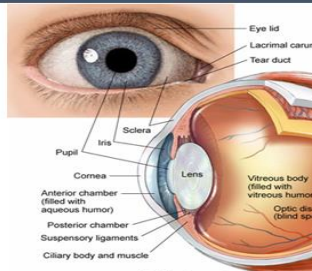
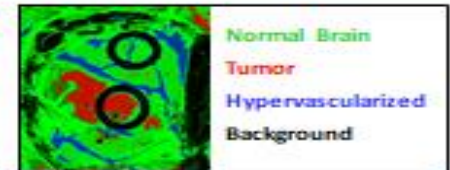
LUMINOUS PROJECT

Ejemplos de proyectos FET (aplicables a EIC Pathfinder OPEN)

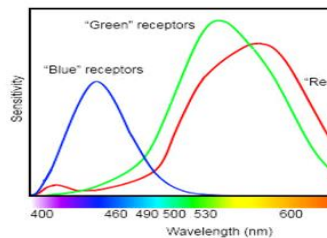
Ejemplo 2: Uso de tecnologías ya existentes para una finalidad y/o aplicaciones nuevas. Proyecto HELiCoId - Hyperspectral Imaging for Brain Cancer Detection – Coordinado por la ULPGC: <https://cordis.europa.eu/project/id/618080/es>
<https://es.euronews.com>

HELiCoId Project

Assist the surgeon in the identification of brain tumours in real-time



Human color receptor relative se



Ejemplos de proyectos FET (aplicables a EIC Pathfinder OPEN)

Ejemplo 3: Idea rompedora basada en una tecnología ya existente pero con el uso de nuevos materiales/metodologías que consiguen crear una disrupción tecnológica. Proyecto SALBAGE. Coordinado por CSIC.

<https://www.salbageproject.eu/>



SALBAGE PROJECT
H2020-FETOPEN-2016-2017 GA 766581



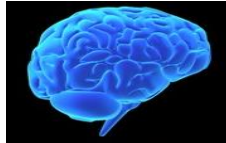
The idea

- **Aluminium** is a very interesting material, widely available, recyclable and cheap.
- **Sulfur** is being studied with potential application as cathode in lithium batteries.
- The use and development of **new electrolytes** is needed. And we propose the use of Ionic Liquids and Deep Eutectic Solvents in a **polymerized** version.
- The combination of these elements in a battery **has never been tried before** .
- Its success would represent a scientific breakthrough in the energy storage field, with real impact in the society progress towards **more affordable and safer batteries**.
- It would lead to the development of a **new generation of batteries**.



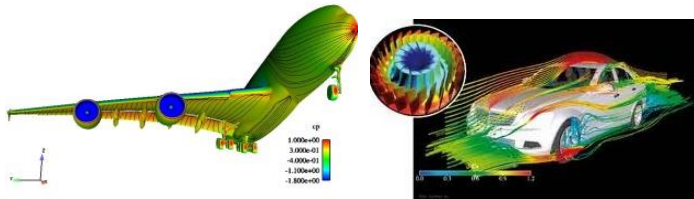
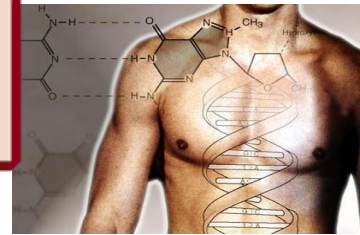
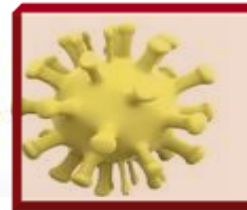
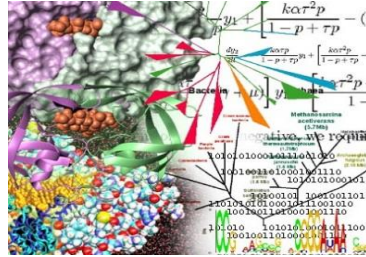
EIC Pathfinder - Aplicabilidad futura

EIC Pathfinder Open - addressing societal challenges



Health, demographic change and well-being

(Personalised medicine, pharma/bio-medical simulations, Virtual Physiological Human, Human Brain Project)



Smart, green and integrated transport Engineering

(performance, sustainability, energy efficiency)

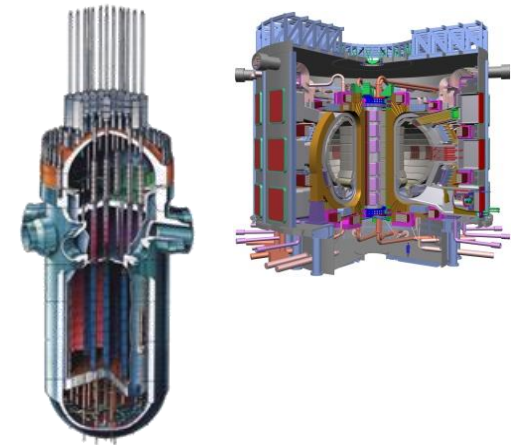
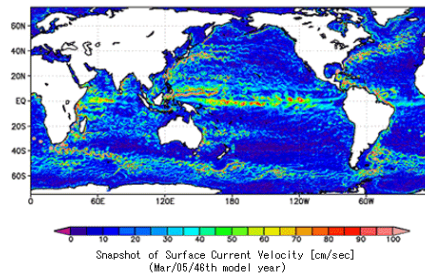


Inclusive, innovative and secure societies

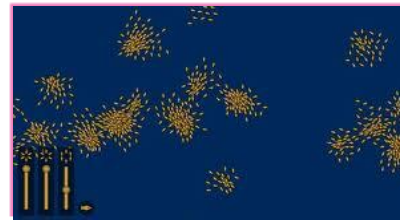
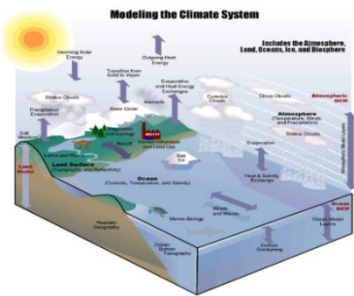
(Smart Cities, multivariable decision/analytics support)

EIC Pathfinder Open - Aplicabilidad futura

EIC Pathfinder Open- addressing societal challenges



**Climate action, resource efficiency
and raw materials**
(Simulators for Climate & Earth Sciences, Gas&Oil)



**Food security, sustainable agriculture,
marine research and the bio-economy**
(simulation of sustainability factors (e.g. weather forecast, stock
plagues and diseases control, etc))

**Secure, clean and
efficient energy**
(Fusion, nuclear plant
simulations)