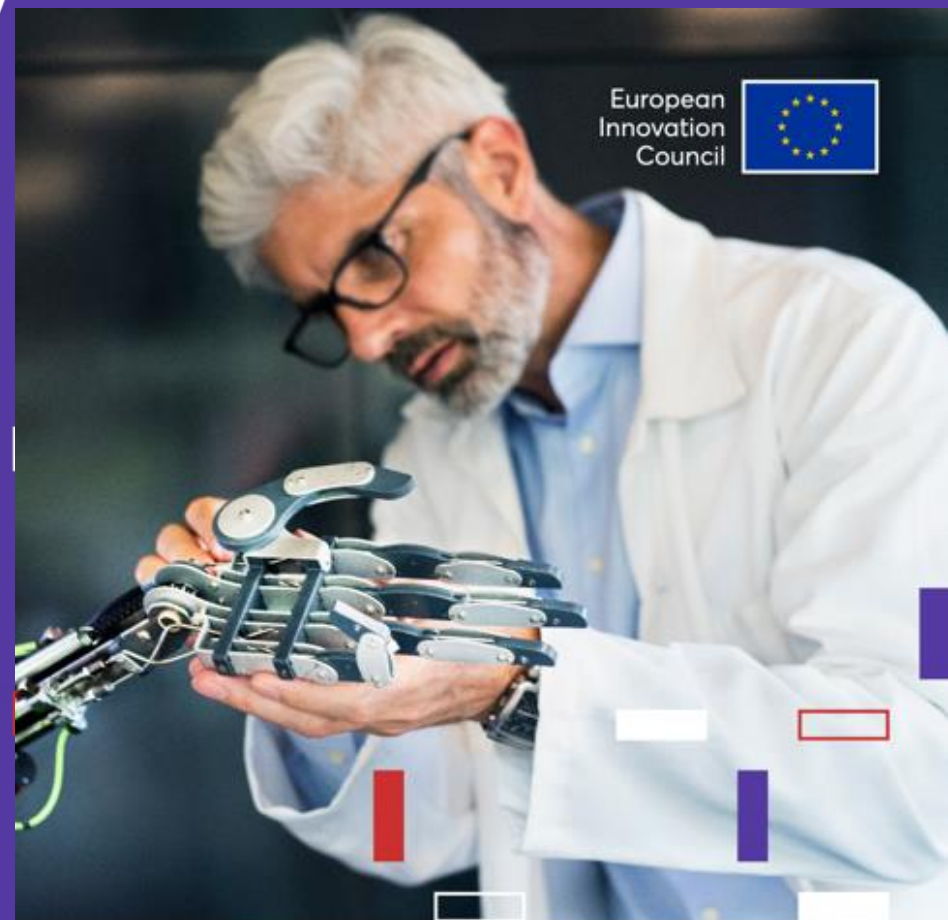




Backing visionary entrepreneurs

Transition to Innovation

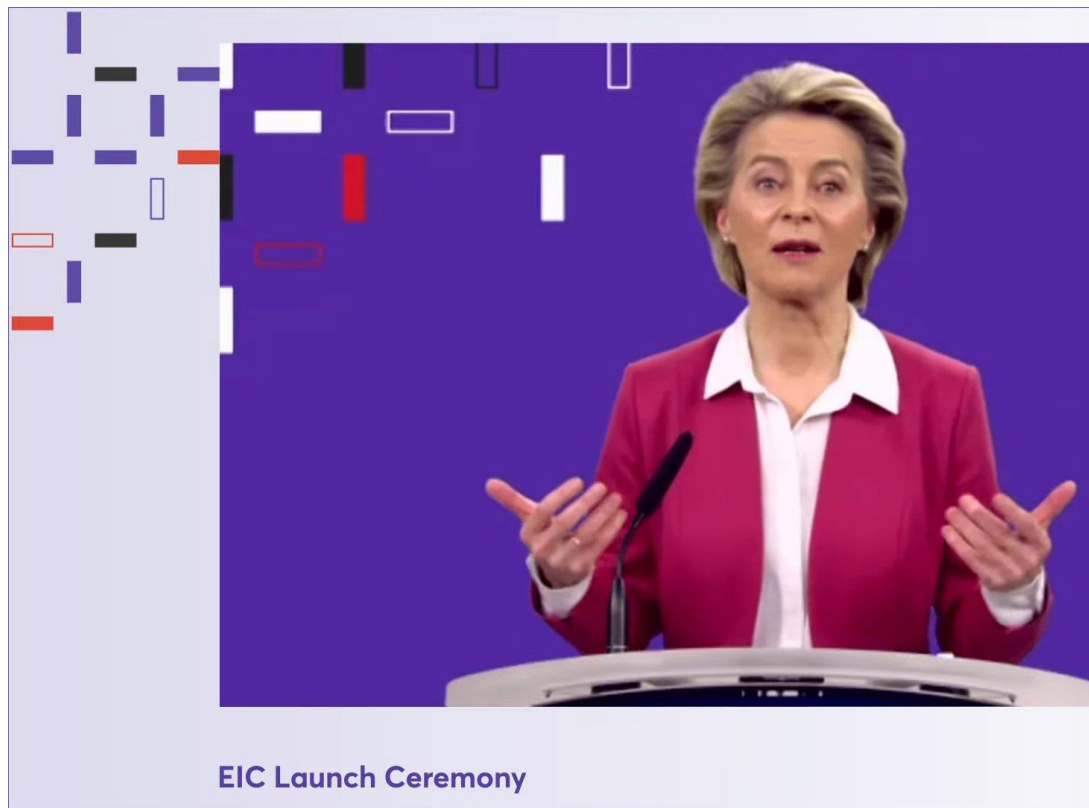
Translating research into innovation





The need for Transition Activities

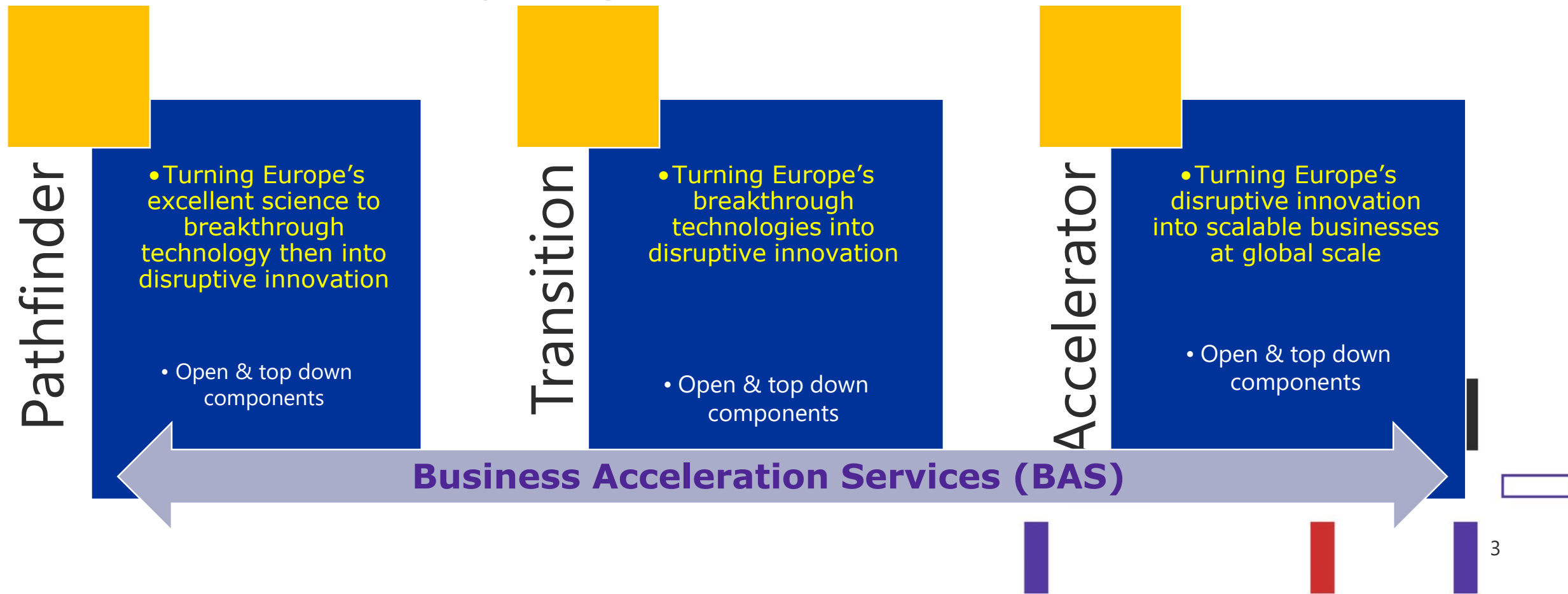
- Europe is extremely good at generating ideas and visions of breakthrough tech.
- But it is not very successful at pushing these ideas into concrete innovations into market.
- “The new European Innovation Council is there to help resolve this paradox,”
- EIC: from idea to market



“We, Europeans, are excellent at making science with money. But we are not so good at making money out of science,”

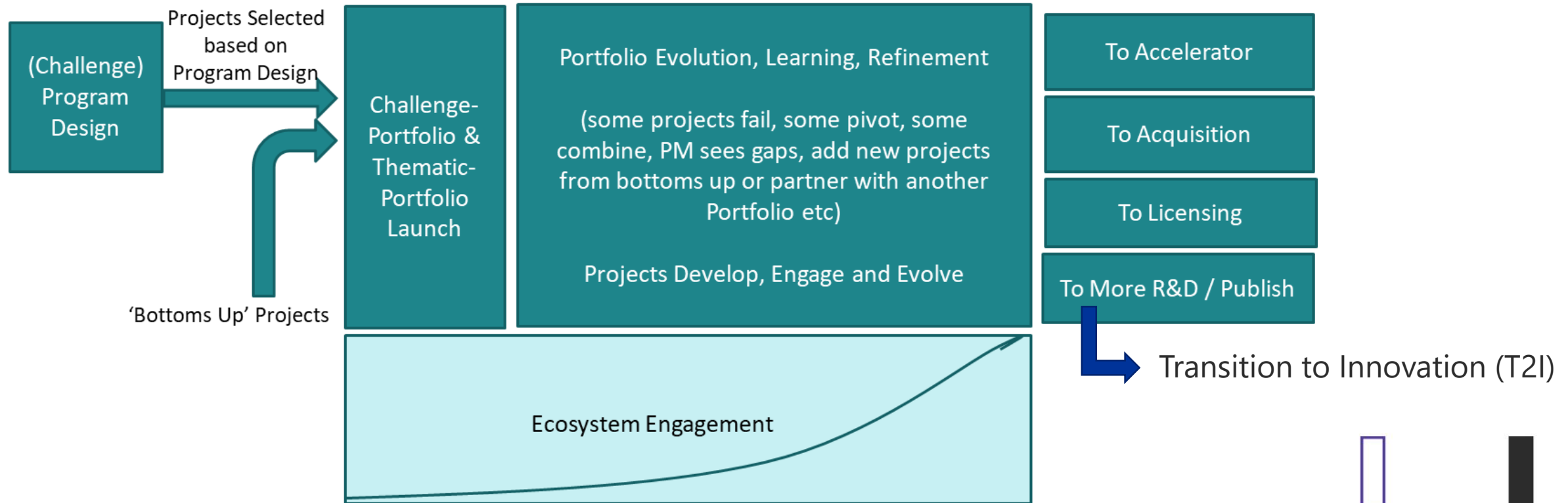


EIC: Integrated, agile support across the full innovation spectrum from early stage research to start-up and scale-up.



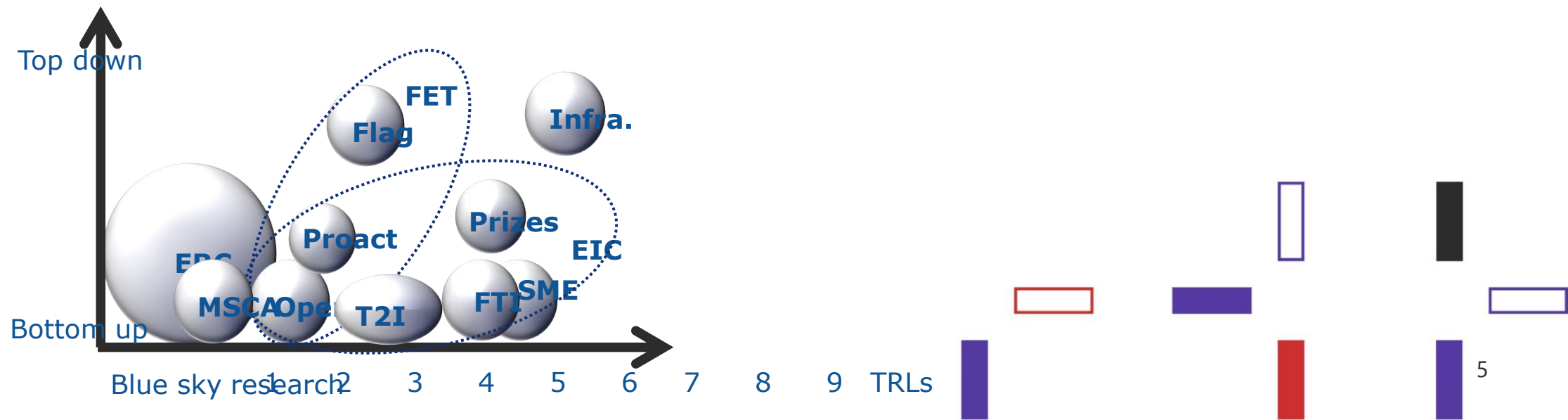


EIC Pathfinder Transition Overview Diagram



The need for Transition to innovation (T2I) activities

- Gap between end of typical FET project and next opportunity
- Improving chance of turning FET research into innovation
- Increasing technological readiness of research outcomes

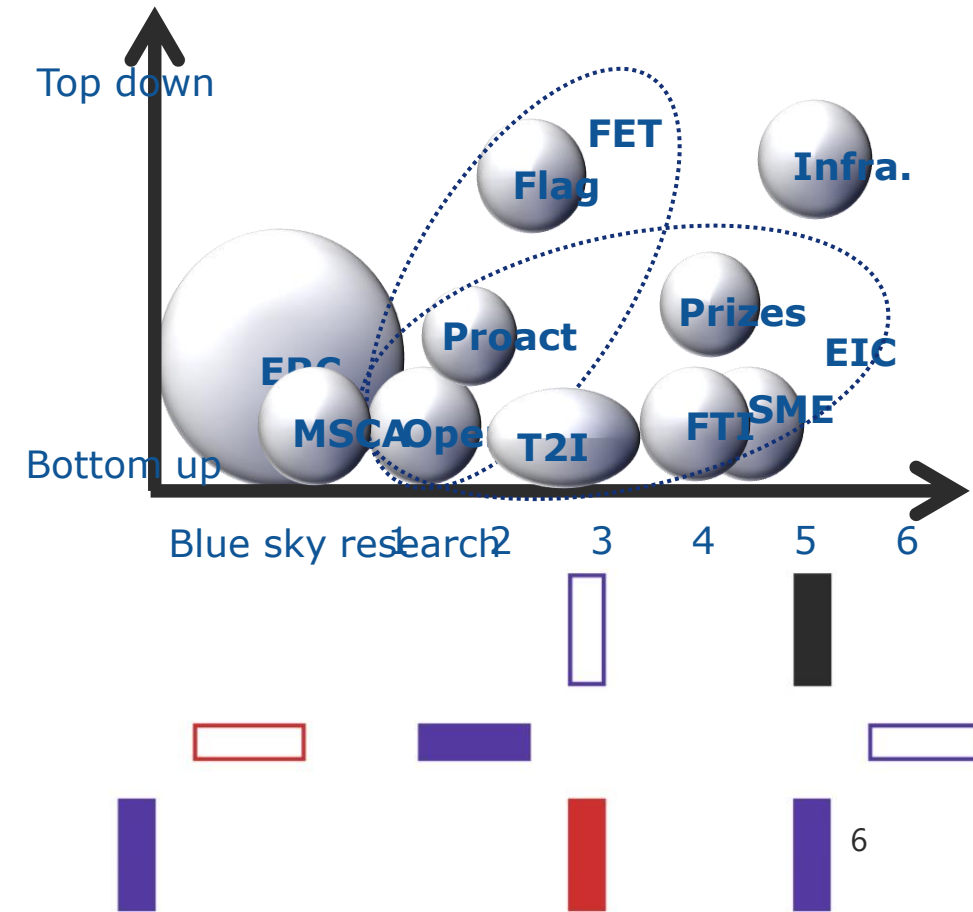




Transition to Innovation (T2I)

Transition to Innovation (RIA) will cover the gap:

- From TRL 3 to TRL 5/6: From proof of concept to prototype demonstrated in relevant environment
- Between Pathfinder/FET and Accelerator or other investment opportunities.
- Between ERC PoC and Accelerator or other investment opportunities.





The Transition to Innovation Pilot in 2019

- Closing of submissions November 2019
- 2 MEuro funding, 2 years.
- Oriented to five areas: Micro- and Nano-technologies, Artificial Intelligence and advanced robotics, Technologies for the life sciences, health and treatment, Low-carbon energy and climate change technologies and Interaction technologies (including virtual- augmented- and mixed reality)
- 28 proposals received – Most on Life Sciences (16), none on Interaction Technologies
- 13 selected projects

<https://ec.europa.eu/programmes/horizon2020/en/news/eic-transition-innovation-activities-first-projects-have-just-started>





Transition to Innovation Pilot Lessons Learnt

- Response to the call demonstrates the appetite and variety of needs for funding the next steps to innovation: supporting further research, developing the industrialisation, market & business aspects.
- Some proposals were geared towards advancing a technology while others towards advancing faster towards the market. T2I must be able to serve many needs, depending on the technology specificities.
- The composition of the consortia needs to reflect different challenges in the T2I activities, e.g. by including an SMEs in a driving role, tech-transfer offices, business expertise, possibly first clients/ users
- There is room for improvement towards fully integrating in T2I business activities. Proposals that previously had an Innovation Launchpad project were more robust in that respect.
- The budget and duration (2M€/2Y) was considered in general adequate but in certain domains a longer duration and bigger budget would be needed, e.g., for a clinical trial in the health sector.



Is this the right call for me?

- Have you identified Pathfinder, FET or ERC PoC project results that could be the basis for ground-breaking innovations and new businesses?
- Is this novel technology ready for the next steps towards its maturation and validation in some specific applications?
- Do you envisage building a motivated and diverse entrepreneur-lead team to develop the idea and increase its market readiness?

If the answer to each one of these questions is 'yes', then EIC Transition may be the right call for you.



For Whom is it?

- Innovative researchers that want to go beyond the experimental PoP in laboratory and approach the validation/demonstration of the technology in relevant environment
- For entrepreneurs, venture builders, SMEs, Spinoffs, corporate not part of initial project
- Restricted to applications based on results generated by the following eligible projects:
 - EIC Pathfinder projects, incl. EIC pilot, H2020 FET-Open, FET-Proactive, Flagships calls
 - ERANET calls under the FET work programme (CHISTERA, QUANTERA, FLAGERA)
 - European Research Council (ERC) Proof of Concept projects
- Single beneficiary (not larger companies) or small consortium (2-5 beneficiaries)
 - E.g. universities, RTOs, SMEs or corporates, user/customer organisations or end users

The different tracks in Transition to Innovation (T2I)

- **A *focused collaborative project*** to advance research up to TRL 5/6. This involves mainly strategic technologies that need more time to mature while improving also the Market Readiness Level.
- **Projects led by an SME/Start-up** with an interest in the results as single partner or in a small collaboration. The goal is to mature both the technology and market readiness.
- **A team of innovative researchers** who want to turn selected project results into a viable product by looking for a suitable business model and/ or **creating a start-up or spin-off** company. In some cases, the results may already be relatively close to market or ready for investment.

Transition will be one single flexible scheme that can encompass any of the above or others that include technology and market aspects.



Startup Studios/ Venture building (VB)

- It is widely acknowledged that investors, especially in Europe, are not so eager to invest in early stage or at concept stage (hence the valley of death problem).
- However, VBs have developed a method of building up a venture around an early technology, bringing not only money but also expertise and essential personnel, CxO
- This model would not require the researcher to become an entrepreneur but co-opt him in the new startup to develop his invention e.g. as CTO/CSO+shares if interested.
- INSEAD: "In the crowded and competitive space of early-stage venture, the VB model has seen impressive traction in the last years, gaining popularity across global markets and playing an increasingly important role in innovation and business support in range of key industries"



Can you apply?

- Your proposal must build on results (demonstrated proof of principle) achieved within an eligible project.
- Eligibility is restricted to results from (original) projects* for which:
 - start date of the grant is more than 12 months before the date of the Transition call deadline
 - end date of the grant for the eligible project is less than 24 months from the date of the Transition call deadline
- You do not have to be the owner of the IP or one of the original beneficiaries, but have the right to use the IP or know-how generated in the initial project.
- Submit via the European Funding & Tender Opportunities Portal and see the Worprogramme for specific instructions.

* projects not beneficiaries



Details of the 2021 call

- Opening 15/4
- Closing 22/9 (both for Open and Challenges)
- 59,6 M Euro for Open
- 40,5 M Euro for 2 challenges (approx. equal share)
- Expected 2.5 M Euro per project
- Sections 1 to 3 of part B of your proposal must consist of a maximum of **25** A4 pages



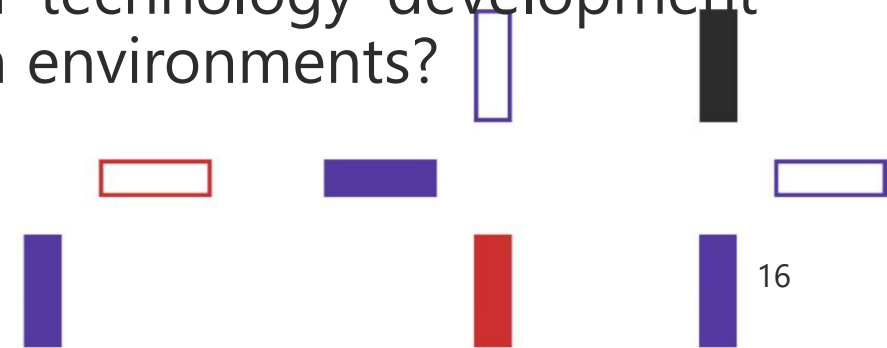
Evaluation of proposals and next steps

- **First remote evaluation phase by experts**
 - Median of the individual scores per criteria (excellence, impact, implementation)
 - Overall score sum of the three medians
 - Feedback 9 weeks after the call deadline
- **If successful and within 2x available budget then invited to a face-2-face interview**
 - You may bring max 5 people mentioned in the proposal/work
 - Jury composed of max 6 members, may include 1 program manager
 - Convincingly pitch your proposal and answer clarifying questions
 - Recommends a Go/No Go, no change in the overall score
 - Invitation 13w and feedback 17 weeks after the call deadline
- If successful, grant agreement signed within 6 months from the call deadline



Evaluation criteria for Transition

- **Excellence (Threshold: 4/5)**
- Technological breakthrough: Does the technology have a high degree of novelty compared to other technologies available or in development; to what extent does this novelty create the potential for new applications and functionalities?
- Technology feasibility: Do the results of the technology demonstration and validation so far indicate the potential for application?
- Objectives: Have potential applications been identified and are they plausible? How appropriate are the objectives for the planned technology development and validation of the innovation in relevant application environments?





Evaluation criteria for Transition (II)

- **Impact (Threshold: 4/5)**
- Business and market fit: How well do the activities propose to develop the business model and product features address commercialisation and other relevant aspects (intellectual property rights, regulation, certification and standardisation)? How will potential users or customers be involved to test potential demand and acceptability?
- Economic and/or societal benefits: How effectively can the proposed innovation and its related activities create substantial demand and new European or global markets? To what extent is the proposed innovation expected to generate other positive impacts (employment, societal, environmental, scientific, etc.)?
- Entrepreneurship: how suitable are the proposed measures to build a strong and motivated entrepreneur-lead team with necessary competences in technology, product engineering, and business development to bring the innovation to the market?
- Partnerships and investment-readiness: How effective are the proposed measures to become investment ready and develop plans to commercialise the project outcomes (including through IP management); have the participants identified key partners willing to be involved?



Evaluation criteria for Transition (III)

- **Quality and efficiency of the implementation (Threshold 3/5)**
- Quality of the team: To what extent do the applicant(s) bring the necessary high-quality expertise, capabilities and motivation to move decisively towards innovation, create a unique commercial value from the emerging technology and develop an attractive business and investment proposition?
- Milestones and Work plan: Is the pathway towards deployment clearly described? Are milestones adequately and clearly defined (measurable, timed, etc.) to track progress along the pathway and towards objectives? How coherent and effective are the work plan (work packages, tasks, deliverables, time-line, etc.), the innovation methods and the risk mitigation methods, in order to reach the milestones and to achieve the project objectives?
- Allocation of resources: How appropriate and effective is the allocation of resources (person-months and equipment) to tasks and partners?



Seal of Excellence

- Awarded to individual SMEs that apply and meets all evaluation criteria at the first step but is not selected for funding
- Provides access to Business Acceleration Services and facilitates funding from other sources
- Only awarded to those applicants who give consent to sharing the data about their application with other eligible funding bodies
- EIC juries may recommend that your application does not receive a Seal of Excellence if they find weaknesses in your proposal which were not identified by the expert evaluators.



Projects funded in Transition can also:

- Apply to receive ad hoc grants with fixed amounts of up to EUR 50 000 to undertake portfolio activities
 - Max of 1 ad hoc grants per project to one grant holder or a group of them
 - After discussion with Programme Manager or following a project review
- Submit an Accelerator proposal via the Fast-Track scheme
 - No direct short application (first stage) to Accelerator
 - Project review to determine innovation and market deployment potential and decide if project is suitable for Accelerator support
 - If successful, submit directly to full application



Focus in Pathfinder vs Transition proposals

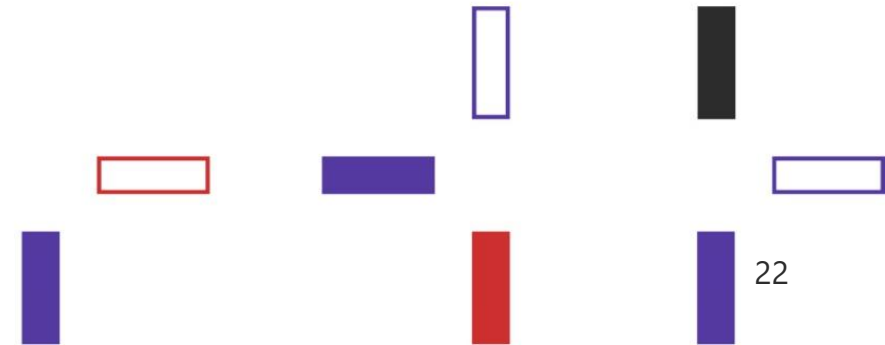
Case study: SME “Intrinsic ID”

- The idea: PUFs= Physically Unclonable Functions are used to uniquely identify electronic components and to protect valuable objects against counterfeiting
- FET Open “Unique” project: 09/2009 – 05/2012
- FET Open “Puffin” project: 02/2012- 01/2015
- SMEi ph1 “Instet” project: 10/2016 – 03/2017
- SMEi ph2 “Instet” project: 06/2018-05/2020





Q&A Transition Open (15')



The specific Transition challenges for 2021

I. Energy harvesting and storage technologies



II. Medical Technology and Devices: from Lab to Patient



The specific Transition challenges for 2021 (I)

- **Energy harvesting and storage technologies**
 - **Innovative technologies and systems combining energy harvesting and storage**, which are efficient, clean, high energy density and low-cost, integrated for stationary or mobile applications.
 - **Innovative concepts and techniques for the combined harvesting and storage of solar energy** (in the form of heat or solar fuels), **geothermal or waste heat**, including topics such as long-term thermal storage, cooling and cryogenic storage, building integrated solutions, thermo-electricity, advanced heat transfer, power to heat to power, pumped heat and thermo-mechanical energy storage and conversion
 - **Advanced materials and devices for electro-chemical storage** (other than Li-Ion batteries), at utility scale, mobile or distributed/micro scale level, also integrated to PV/wind energy systems or for other intermittent sources.



The specific Transition challenges for 2021 (I)

Why this challenge?

- **Energy storage is a key for decarbonized, competitive and reliable energy systems**
 - Energy generation and demand are often decoupled
 - High penetration of intermittent renewable energies requires efficient, smart and low cost energy storage solutions
 - Energy storage can be integrated to waste energy recovery technologies and retrofit of fossil fuel plants to increase energy systems flexibility and cross sectors coupling
 - Innovative technologies for energy harvesting, conversion and storage are crucial for the Green Deal targets of decarbonized energy systems
 - Utility-Scale Storage of Renewable Energy and **Sun-powered chemistry** (e.g. solar fuels) in top10 emerging technologies in 2019 respective 2020





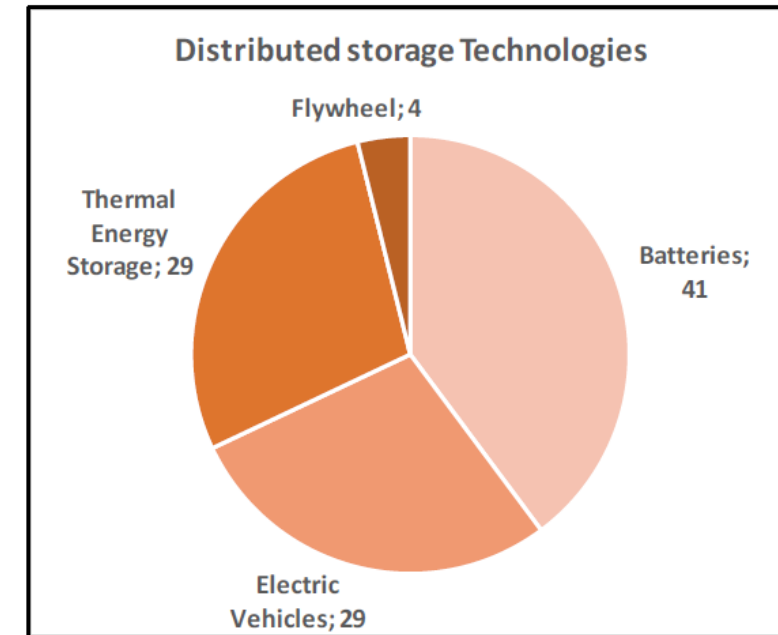
The specific Transition challenges for 2021 (I)

Relevance of energy harvesting and storage technologies

- **Why such a topic in Transition? Increase flexibility of energy systems**

- ✓ **Numerous ongoing or recently finished projects on storage and conversion**

- EU-funded early-stage research on innovative energy technologies is uncovering unique opportunities for systems integration of advanced energy harvesting, conversion and storage technologies
- There are many EIC Pathfinder/FET and ERC (PoC) projects in storage and harvesting which could be ready for transition to innovation



Small scale storage technologies in BRDIGE group of (64) projects



The specific Transition challenges for 2021 (I)

The proposals should:

- perform the necessary R&D to advance from an existing proof-of-principle to a mature version
- develop an exploitation strategy, outlining the proposed path to innovation and describing a business plan
- Provide clear and ambitious performance targets and progress milestones
- **Be focused on one or more of the following:**
 - ✓ **combining** energy harvesting and storage into integrated systems and technologies
 - ✓ Propose Innovative concepts for the harvesting and/or storage of **solar energy** (in the form of heat or solar fuels), **geothermal or waste heat**
 - ✓ Propose topics such as long-term and inter-seasonal energy storage, cooling and cryogenic storage, building integrated solutions, thermo-mechanical energy storage and conversion, chemical loop based solutions
 - ✓ Advanced materials and devices for electro-chemical storage (other than Li-Ion batteries) with toxic-free and non-critical raw materials.



The specific Transition challenges for 2021 (I)

Eligibility and expected results:

✓ Eligibility:

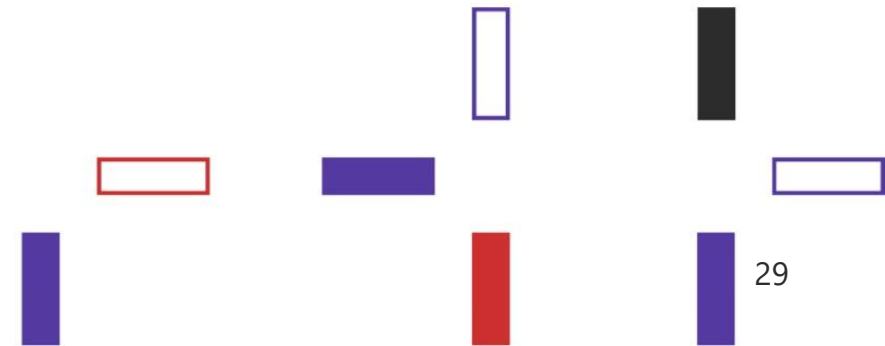
- Same as for Transition Open.

✓ Expected results:

- prototypes or demonstrators operating in relevant environment conditions
- Able to demonstrate the proposed solution in one or more combined scenarios (Distributed or centralized, short-term or (inter) seasonal, stationary or mobile. etc.)



Q&A Transition Challenge I (7')





Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

WHY THIS CHALLENGE TRANSITION CALL?

- EU-funded early-stage research on novel Medical Technologies and Devices has led to unique opportunities to benefit patients and support clinicians
- The EIC pipeline includes the ACCELERATOR funding stage to bring these opportunities to the clinic, crowding in private investment and industrial partnerships
- BUT, a proof-of-concept (PoC) resulting from PATHFINDER, ERC, ERANET is often not ready for ACCELERATOR funding



Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

Before approaching industrial partners and private investors, Medical Technology PoCs usually need:

- To evolve substantially from the “lab version”, for example being recast with electronics, software, materials, ICT system operating environments and processes compliant with the appropriate safety standards, e.g. IEC 60601, ISO 10993, etc. and suitable for future manufacturing with appropriate quality levels, etc. in line with ISO 13485.
- Also, to thoroughly validate safety and efficacy in a clinical setting is necessary to advance towards regulatory compliance, to fully gauge the potential of the technology jointly with clinicians and patients and to motivate private-sector involvement.



Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

Also:

In addition, Medical Technology and Devices businesses face unique challenges

(e.g. long and capital intensive product development cycles, complex regulatory procedures, slow market uptake requiring the support of key opinion leaders and intensive follow-up with early adopters, etc.)

As a result:

In addition to a mature technology, a well thought-out and realistic exploitation plan is needed





Transition challenges for 2021 (II)

Medical Technology and Medical Devices: from Lab to Patient

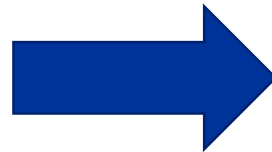
THE PROPOSALS SHOULD AIM AT:

- perform the necessary R&D to advance from an existing proof-of-principle technology to a mature version ready to initiate clinical evaluation
- develop an exploitation strategy, qualitatively and quantitatively outlining the proposed path to patient and describing an investable proposition



Transition challenges for 2021 (II) Medical Technology and Medical Devices: from Lab to Patient

The starting point in the project should be a preliminary prototype of a medical device or technology (TRL3-4)



The endpoint deliverables in the project should be a completely functional version of the technology suitable in its end-of-project state for clinical validation (TRL 5-6), supported by a sound and implementable exploitation strategy.

*Proposals submitted to this call can target **any technology** addressing important health needs in the direct clinical treatment and care of patients*

***EU contribution of € 2.5 million and duration of up to 3 years
(but other amounts and durations possible)***



Thank you!

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