



UNIVERSITÀ
degli STUDI
di CATANIA



XIV Convegno Nazionale INBB “Ricerca e Innovazione per Ambiente, Salute ed Alimentazione”

EIC programme: Pathfinder projects

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HORIZON EUROPE (2021-2027)

EURATOM

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

*Exclusive focus on
defence research
& development*

Research
actions

Development
actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications



Pillar I EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie

Research Infrastructures



Pillar II GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre



Pillar III INNOVATIVE EUROPE

European Innovation
Council

European Innovation
Ecosystems

European Institute of
Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

Fusion

Fission

Joint
Research
Center

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme



What's holding back European innovation?

Innovation performance

- **Strong research performance not translated** into innovation
- **Lack of breakthrough/ disruptive innovations** that create new markets

Innovation **funding**

- Financing gaps (2 "valleys of death") in
- **Transition** from lab to enterprise
 - **Scaling up** for high-risk innovative start-ups

Innovation **ecosystem**

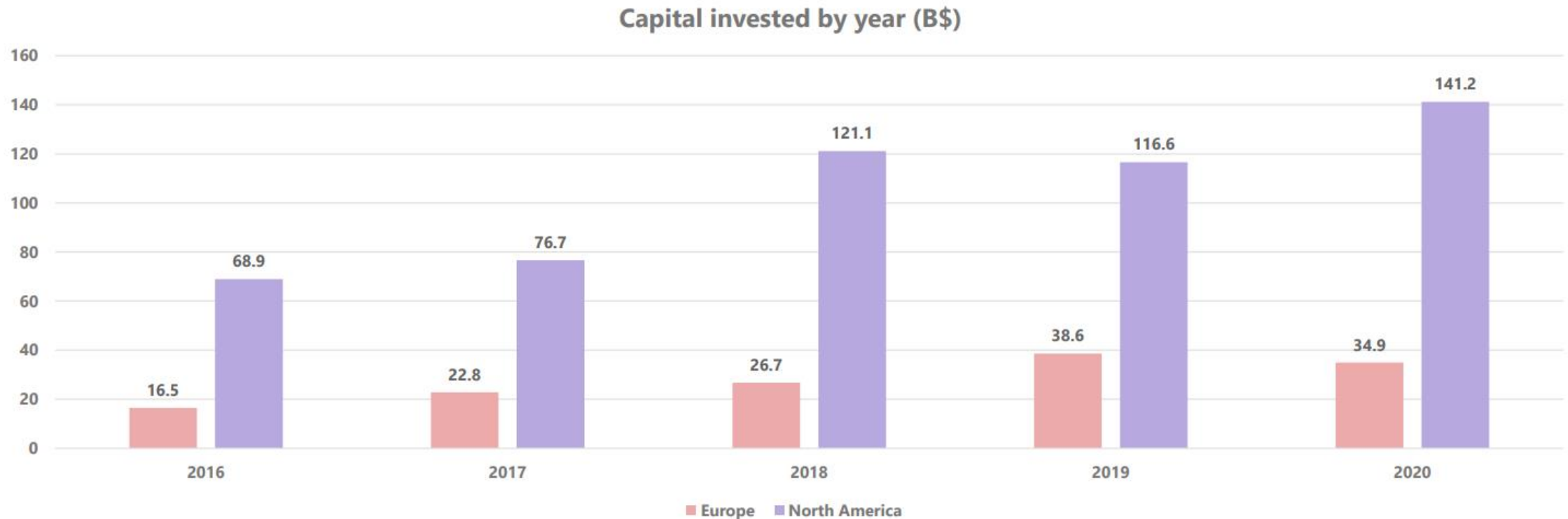
- Many national & local ecosystems, but **fragmented at European level**
- Need to **include all regions and all talent** (especially female)





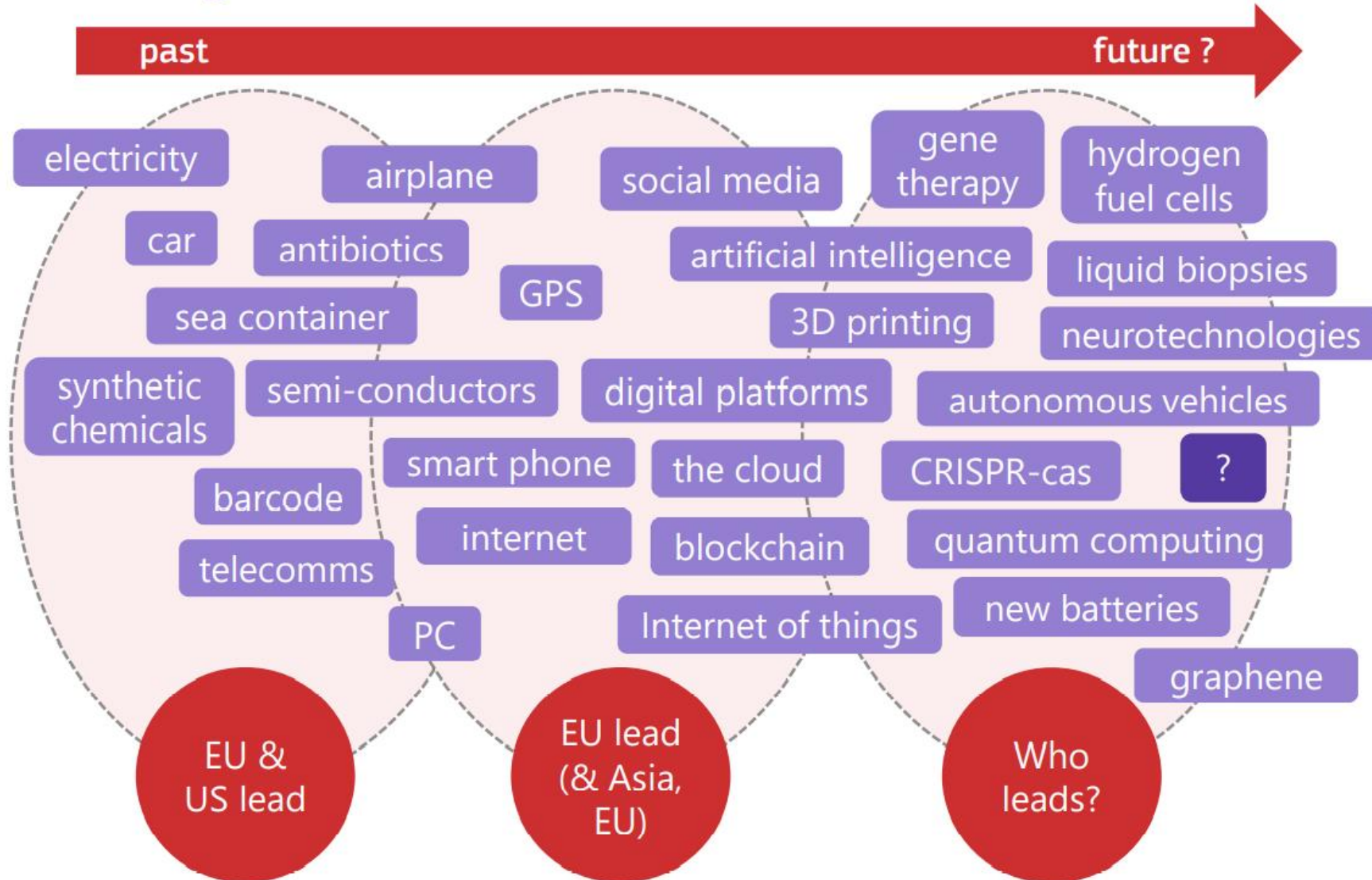
Funding gap for scaling up highly innovative startups and SMEs

US venture capital investments are 4-5 times higher than EU



Source: [Invest Europe, Pitchbook]

What is at stake: who will lead on the next wave of strategically important technologies?



Examples taken
from WIPO, MIT,
WEF, OECD, etc.

EIC pilot phase (2018-20) under Horizon 2020 programme

- **Budget of €3.5 billion (2018-20)**, €1.55 billion in 2020
- Introduction of **EIC pilot blended finance** (2019), **and set up of EIC Fund** (2020)
- **Very high demand:** ~ 14000 applications from SMEs/ startups in 2020 with request for over €40 billion support;
- **Special support for:**
 - **COVID relevant innovations:** 36 Startups/SMEs awarded funding of over €160m in May;
 - **'Green Deal' innovations:** 64 startups/ SMEs awarded funding of over €300m in July;
 - **for women innovators:** at least 25% of start-ups/ SMEs invited to interview to have female CEO
- **First EIC programme managers** recruited

Horizon Europe EIC (2021-2027)

European
Innovation
Council



Europe's most ambitious innovation initiative

- **€10 billion** programme to identify, develop and scale up breakthrough technologies and disruptive innovations in Europe
- **Unique** in the world to combine research on emerging technologies with Accelerator for startups, SMEs and scaleups
- **EIC Fund** largest VC deep-tech investor in Europe (over €3 billion)
- **Innovator-centric** steered by Board of leading innovators
- **Pro-active approach** with flexible funding
- Enhances the **European innovation ecosystem**





Part of the Innovative Europe pillar of Horizon Europe

European Innovation Council

- Support to innovations with breakthrough and market creating potential

€10.1 billion

European innovation ecosystems

- Connecting with regional and national innovation actors

€520 million

European Institute of Innovation and Technology (EIT)

- Bringing key actors (research, education and business) together around a common goal for nurturing innovation

€2.9 billion



EIC Advisory Board

Advising on strategy and implementation of all EIC activities. Bringing together a diverse set of actors to put the innovator at the heart of the EIC.

Mark Ferguson

EIC Board Member, EIC pilot Advisory Board Chair



What is the EIC?



One stop shop for
breakthrough, deep-tech,
market-creating innovators

- Open to all innovators, in any field, at any time
- Complemented by targeted funding on strategic challenges
- Highly competitive for Europe's high potential innovators

Agile funding from idea to
investment

- Pathfinder for advanced research on emerging technologies
- Transition from lab to commercial setting
- Accelerator & EIC Fund to scale up innovations by start-ups & SMEs

Building ecosystems and
communities

- Access to Business Acceleration Services (coaches, mentors, corporates, investors & knowledge partners)
- EIC Programme Managers to develop visions for breakthroughs, manage portfolios, and connect to ecosystems
- Crowding in other investors (VC, corporates, etc.)





EIC main instruments and characteristics

Pathfinder

- **Early stage research** on breakthrough technologies
- Grants up to €3/4 million
- Successor of FET (Open & Proactive)

Transition

- **Technology maturation** from proof of concept to validation
- **Business & market readiness**
- Grants up to €2.5 million

Accelerator

- **Development & scale up** of deep-tech/ disruptive innovations by startups/ SMEs
- Blended finance (grants up to €2.5 million; equity investment up to €15 million)
- Successor of SME instrument

- Mission to **identify, develop and deploy high risk innovations** of all kinds
- Focus on **breakthrough, market-creating, deep-tech**
- Steered by **EIC Board** of leading innovators (entrepreneurs, investors, researchers, ecosystem)
- **Business Acceleration Services** (coaches/ mentors, corporates, investors, ecosystem)
- **Pro-active management** (roadmaps, reviews, re-orientations, etc) with EIC Programme Managers
- **Follow up funding for results from Horizon** (ERC, EIT, collaborative) & national programmes

EIC Pathfinder

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

Funding schemes

EIC Pathfinder **Open**:

bottom-up approach with no predefined topics

EIC Pathfinder **Challenges**:

top-down challenge-driven calls for tackling specific technology breakthroughs

EIC Pathfinder Challenges 2022

- Carbon dioxide and nitrogen management and valorisation
- Mid to long term and systems integrated energy storage
- Cardiogenomics
- Towards the healthcare continuum: technologies to support a radical shift from episodic to continuous healthcare
- DNA-based digital data storage
- Alternative approaches to quantum information processing, communication, and sensing

EIC Pathfinder Open 2022

European Innovation Council Pathfinder Open

Successful proposals | Cut-off 4 May 2022



858

PROPOSALS EVALUATED



57

PROJECTS CHOSEN



183 million

TOTAL EU CONTRIBUTION



3.2 million

AVERAGE EU GRANT



29

COUNTRIES



352

PARTICIPANTS

45% HIGHER EDUCATION,
26% RESEARCH ORGANISATIONS,
22% PRIVATE ORGANISATIONS,
8% OTHER

European
Innovation
Council





EIC Pathfinder Open - Who is it for?

- Do you have **a vision for a future technology** that could make a real difference to our lives?
- Do you see a plausible way of **achieving the scientific breakthrough** that will make this technology possible?
- Can you imagine collaborating with an **interdisciplinary team of researchers and innovators** to realise the **proof of principle** and validate the scientific basis of the future technology?





Why should you apply?

You apply for an EIC Pathfinder Open grant:

- for support to realise **an ambitious vision for radically new technology**, with **potential to create new markets** and/or to **address global challenges**.
- for **early stage development** of such future technologies (e.g. various activities at low Technology Readiness Levels 1-4),
- to provide the **foundations of the technology** you are envisioning.





EIC Pathfinder Open : Gatekeepers

Collaborative, interdisciplinary research, meeting the following 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 & methodology**, with concrete and plausible objectives.



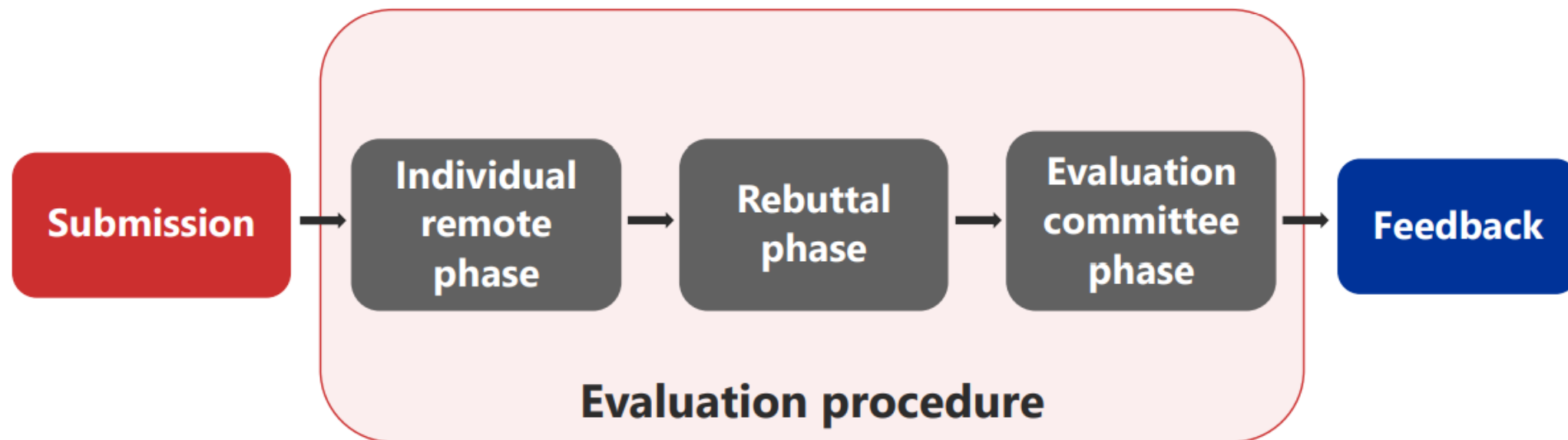


Expected outcomes of EIC Pathfinder Open project

- the expected outcome of a EIC Pathfinder project is the **proof of principle** that the **main ideas of the envisioned future technology are feasible**, thus validating its scientific and technological basis;
- projects are expected to take the necessary measures to **allow future uptake to take place**, for instance through an **adequate formal protection of the generated Intellectual Property (IP)**;
- projects are encouraged to involve and empower in their teams **key actors** that have the potential to **become future leaders** in their field such as excellent early-career researchers or promising high-tech SMEs, including start-ups.

All the above will **strengthen Europe's capacity for exploiting the scientific discoveries made in Europe** throughout the steps to market success or for solving global challenges.





Remote Phase: four independent experts provided their different opinions and related scores for each criterion (Excellence, Impact and Implementation).

Rebuttal phase: consortia are invited to respond to the refutation phase, by viewing comments from the Remote Evaluators. It will be possible to reply within 7 days with a max 2 pages reply.

Cross-reading: further four independent experts, different from the previous Remote Experts, will view the project proposal, the Draft Evaluation Summary Report and the responses of the consortia proposing the Rebuttal Phase.

Panel Meeting: definition of the Ranking List relating to the EIC Pathfinder Open call. Calculation of the median of the eight votes defined through the collaboration of the Remote Experts and the Cross-readers, and the subsequent weighting of the single criterion as follows (Excellence 60%; Impact 20%; Implementation 20%).

Ethics Review, according to Horizon Europe standard rules.

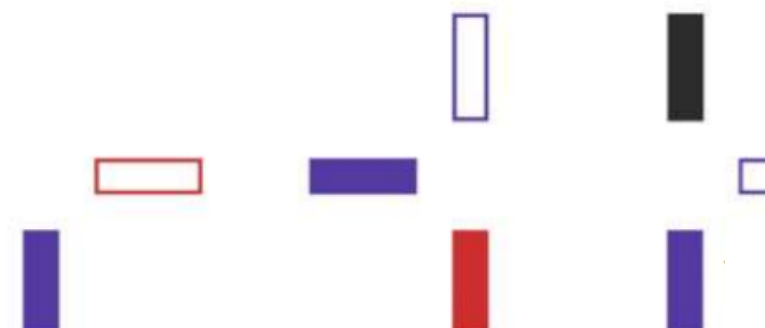


1. Evaluation criterion “Excellence”

- **Long-term vision:** How convincing is the vision of a radically new technology that has the potential to have a transformative positive effect to our economy and society?
- **Science-towards-technology breakthrough:** How concrete, novel and ambitious is the proposed science-towards-technology breakthrough with respect to the state-of-the-art? What advancement does it provide towards realising the envisioned technology?
- **Objectives:** How concrete and plausible are the proposed objectives? To what extent are high-risk/high-gain research approach and methodology appropriate for achieving them?
- **Interdisciplinarity:** How relevant is the interdisciplinary approach from traditionally distant disciplines for achieving the proposed breakthrough?

Threshold
4/5

Weight
60%



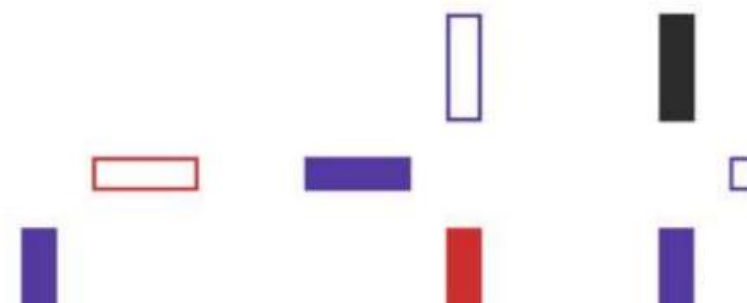


2. Evaluation criterion “Impact”

- **Innovation potential:** How adequate are the proposed measures for protection of results and any other exploitation measures to facilitate future translation of research results into innovations with societal or economic impact? How suitable are the proposed measures for empowering key actors that have the potential to take the lead in translating research into innovations?
- **Communication and Dissemination:** How convincing and wide reaching are the proposed measures and plans for public/stakeholder engagement and for raising awareness about the project outcomes, including through Open Science, with respect to their potential to establish new markets and/or address global challenges?

Threshold
3.5/5

Weight
20%



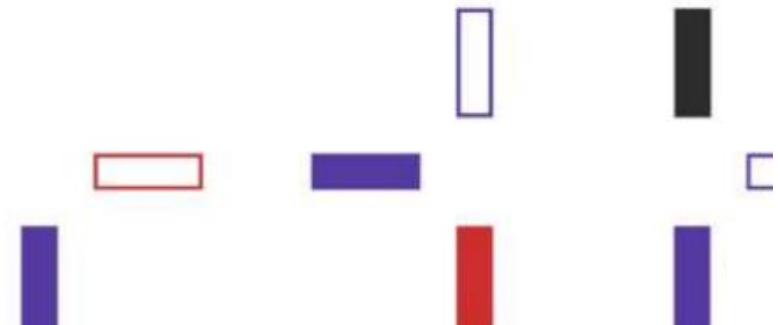


3. Evaluation criterion “Quality and efficiency of the implementation”

- **Quality of the consortium:** To what extent do the consortium members have all the necessary high quality expertise for performing the project tasks?
- **Work plan:** How coherent and effective are the work plan (work packages, tasks, deliverables, milestones, time-line, etc.) and risk mitigation measures in order to achieve the project objectives?
- **Allocation of resources:** How appropriate and effective is the allocation of resources (person-months and equipment) to tasks and consortium members?

Threshold
3/5

Weight
20%



Priority criteria

EIC Work Programme 2022

“For proposals with the same final score, priority will be based on the following factors, in order:

- 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”*

Tips for applicants - Pathfinder

- Is the EIC Pathfinder really for you?
- Be ambitious, follow your 'dream'
- Consortium as embryonic ecosystem (for multi-beneficiary applications)
- Collaborate, collaborate, collaborate...
- Communicate and engage
- Bring value to the scientific community and the market

Versatile Amplification Method for Single-Molecule Detection in Liquid Biopsy

<https://versilib.eu>

Partners



Università
di Catania




European Innovation Council online Info Day - Work Programme 2023 - 13 December 2022

The European Innovation Council Work Programme 2023 will be presented in this full-day online event on 13 December 2022 dedicated to potential applicants, together with an overview of what has already been achieved under the previous work programmes.



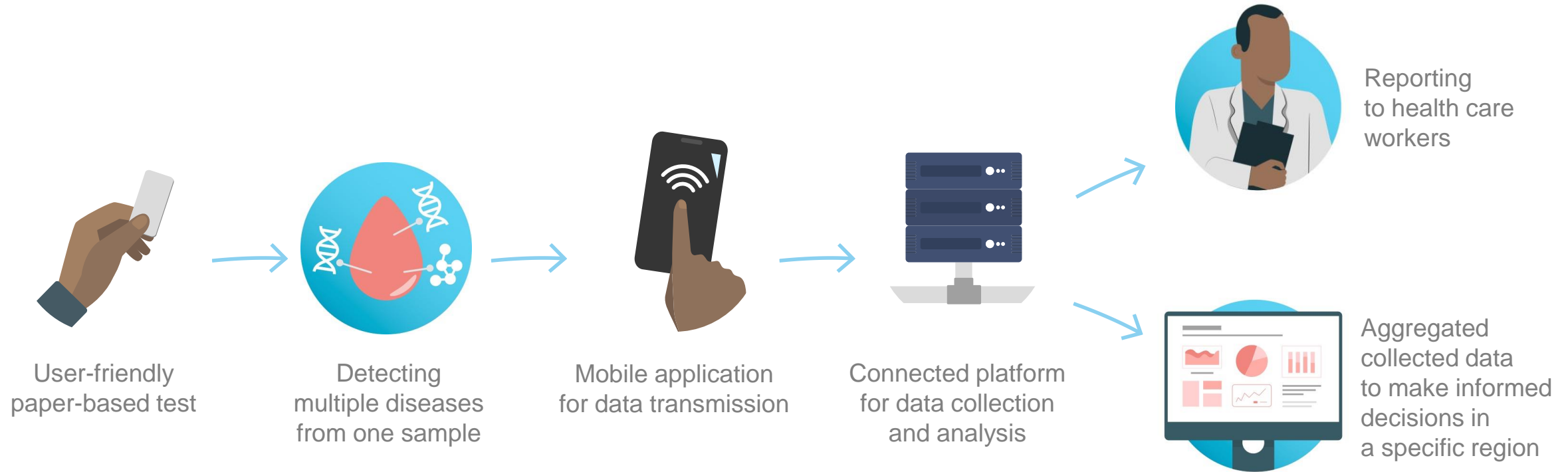
 innovation | small and medium-sized enterprises | EU financing

 13 December 2022, 09:30 CET - 13 December 2022, 16:30 CET

 Online only

Didida: detecting multiple diseases at once

A cost-effective mobile based solution in Africa



Funded by
the European Union



UK Research
and Innovation

HORIZON-HLTH-2021-DISEASE-04

Didida: detecting multiple diseases at once

A cost-effective mobile based solution in Africa

- INNOTROPE SAS (FR)
- INSTITUT PASTEUR (FR)
- AFRICAN POPULATION & HEALTH RESEARCH CENTRE KENYA (KE)
- STRATHMORE UNIVERSITY (KE)
- KENYA MEDICAL RESEARCH INSTITUTE (KE)
- STICHTING AMSTERDAM INSTITUTE FOR GLOBAL HEALTH AND DEVELOPMENT (NL)
- PHARMACCESS INTERNATIONAL (NL)
- INSTITUT PASTEUR DE DAKAR (SN)
- THE GOOD SAMARITAN FOUNDATION (TZ)
- UGANDA NATIONAL HEALTH RESEARCH ORGANISATION (UG)
- MOLOGIC LTD (UK)
- MINISTRY OF HEALTH, Uganda (UG)
- ISTITUTO NAZIONALE DI BIOSTRUTTURE E BIOSISTEMI (IT)
- UNIVERSITA DEGLI STUDI DI CATANIA (IT) (affiliated entity)



Funded by
the European Union



UK Research
and Innovation

HORIZON-HLTH-2021-DISEASE-04



European Innovation Council

Support to innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors (**70% of the budget earmarked for SMEs**)

**European
Innovation Council –
a one-stop-shop**

- Helping researchers and innovators create markets of the future, leverage private finance, scale up their companies
- Innovation centric, risk taking & agile, pro-active management and follow up
- Mostly 'bottom up', but also targeting strategic challenges
- EIC Programme Managers to develop visions for breakthroughs and steer portfolios

Complementary instruments bridging the gap from idea to market

PATHFINDER

R&I grants
(from early technology
to proof of concept)

TRANSITION

R&I grants
(proof of concept to
pre-commercial)

ACCELERATOR

**Grants & investment (via EIC Fund) for
single SMEs & start-ups**
(from pre-commercial to market & scale-up)

EIC Pathfinder Challenges 2022

Latest statistics - 27 October 2021 deadline



403

proposals evaluated



39

projects chosen



€145 million

total EU contribution



€3,7 million

average EU grant



27

countries



214

participants

European Innovation Council to award up to €145 million to achieve breakthroughs in emerging, strategic areas of technology [➤](#)

science-inspired and radically new future technologies with the potential to create new markets or revolutionise existing ones.

Be ambitious, follow your 'dream'

- Your proposal as a starting point
- Don't write it for 'us', but for people like you
- Draft what you want or need, not what you think 'we' want

Consortium as embryonic ecosystem (for multi-beneficiary applications)

- There are no hidden expectations from our side
- No cosmetic roles – keep it simple
- Work with the best Novelty starts here

Collaborate, collaborate, collaborate...

- Write your proposal jointly with your partners
- Collaboration driven by joint goals, complementary expertise and mutual learning
- Explore new ways of working/delivering together

Communicate and engage

- Scientific publications in open access
- Inspire others!
- Social network, accessible and understandable material
- Engage beyond scientific community

Bring value to the scientific community and the market

- Protect your invention for IP commercialisation
- Promote efficiency gains with the reusability of your scientific data