S3E REVERSE for Solvers

Guidelines for applicants

For start-ups, scale-ups and SMEs from South European and Associate Countries

v.1

7 March 2023

Disclaimer

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Document revision history

Version	Date	Description of change
v.1	07/03/2023	1st version of the Open Call for Solvers of the S3E REVERSE Program

Table of contents

1 Introduction

S3E – Southern European Entrepreneurship Engine is a project, funded by the European Commission, focused on accelerating **deep tech projects, start-ups, and SMEs** that aim at providing solutions towards a more sustainable society and economy in line with Sustainable Development Goals (SDG)[1].

The S3E program is built around three tracks of carefully designed services tailored to support researchers, research teams, start-ups, scaleups and SMEs in advancing their technologies, products, processes, or services towards the market. Participants in the programs will be selected through open calls.

The aim of **S3E Reverse** is to create an **Innovation and Technology brokerage program** that will connect corporates and public organisations (we use **Challenge Organisations** from now on) that face certain challenges related to the SDGs, with mature, scaling start-ups (we use **Solvers** from now on) that can address these challenges through their products, services, and solutions.

The overall goal is to create new collaborations between organisations with specific needs and SMEs/Start-ups that may be able to address them.

We launched this track in November 2022 by inviting Challenge Organisations to submit challenges through our Open Call Mechanism. Through this Open Call we received 21 challenges from 19 organisations.

These challenges were carefully evaluated and organised by S3E experts that will be published on our website (https://south3e.eu/) to invite mature start-ups, SMEs and scale-ups to submit specific proposals for addressing these challenges through Deep Tech solutions.

This document provides a full set of information for all start-ups and scale-ups that would like to submit their solutions.

The **Open Call for Solvers** to address these challenges will stay open till May 15 but it will work on a first come-first served basis, so if our experts and technology brokers identify a good match between a challenge organisation and a solution provider they will start the brokerage, bringing together the 2 parties and establishing a collaboration.

This document provides detailed information regarding the S3E Reverse program and its **first Open Call for Solvers**, as well as a general overview of the S3E project.

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[1] https://sdgs.un.org/goals

2 S3E Overview

The S3E – Southern European Entrepreneurship Engine project mission is to develop an engine of growth that will contribute to improve the connectedness and efficiency of the entrepreneurship ecosystems in southern European countries.

S3E consortium partners are:

- **HiSeedTech** - A not-for-profit association founded by private companies that came together with the purpose of enabling the creation of value from knowledge through technology entrepreneurship and open innovation.
- **EPLO Institute for Sustainable Development** – part of an international organization dedicated to mainstreaming the UN Sustainable Development Goals and the EU Green Deal, providing capacity building, policy work and educational programs.
- **IDI** (International Development Ireland) specialises in practical day-to-day implementation for Government agencies in economies which are growing and changing rapidly
- **Australo** Interinnov Marketing Lab SI - is a marketing agency specializing in growth hacking for research and innovation.

The S3E project is co-funded by the European Union's Horizon 2020 European innovation ecosystems under the grant agreement ID: 101072135 (see here the Cordis fact sheet).

S3E will focus on accelerating **deep tech projects, start-ups, and SMEs** that, by providing solutions towards a more sustainable society and economy, can impact social development and economic growth in these countries and contribute to the timely achievement of the United Nations Sustainable Development Goals (SDGs), in line with the EU Green Deal, the Recovery and Resilience Facility and the **Next Generation EU** fund.

S3E will provide skills to researchers and technology transfer officers in science-based entrepreneurship and technology commercialization, supporting growth stage start-ups in business development and in procuring investment, and providing technology brokerage for corporates and scale-up stage start-ups and SMEs.

The program is built around **three tracks** of bespoke services tailored to start-ups' varying levels of maturity (i.e., early, growth, and scaling stages):

- **S3E Start:** For research teams and technology transfer officers, S3E offers a hands-on training program to hone their commercial skills and secure early funding for development.
- **S3E Charge:** For growth start-ups, S3E provides mentoring and networking to develop an investment-ready business plan and facilitate access to non-dilutable and dilutable funding
- **S3E Reverse:** For scaling start-ups / SMEs, S3E will set up an Open Innovation ecosystem to broker, connect and match corporates and public organisations (Challenge Organisations) to more mature scaling start-ups through a challenge-solution duality.
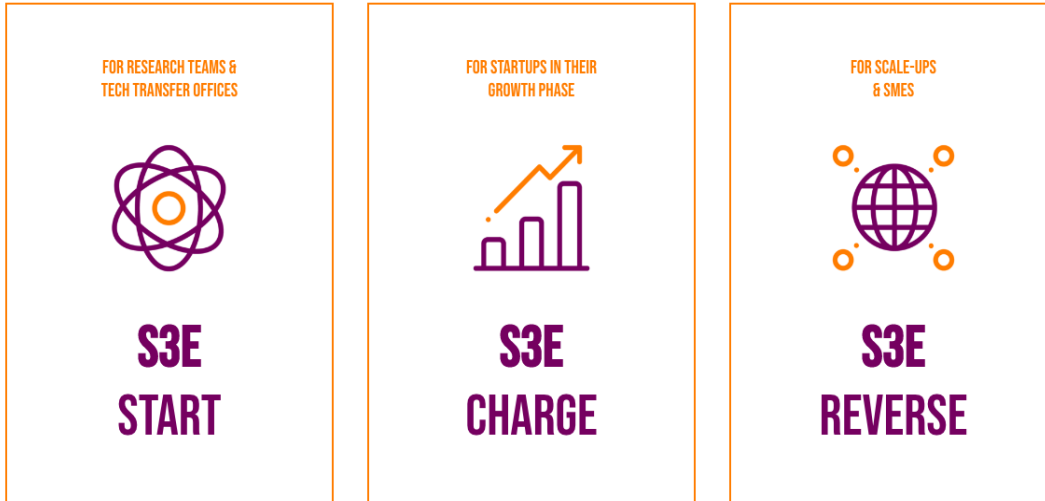
Figure 1. S3E Tracks

3 S3E Reverse at a glance

3.1 Who is this program for?

S3E Reverse is designed to help **start-ups, and SMEs** gain market traction through a pan-European brokerage program that will connect them with corporate and public organisations, with specific challenges and problems, which they can work together to solve.

The program started in November 2022 by inviting **Challenge Organisations** to unveil challenges they face, related to the SDGs that could be addressed through deep tech solutions.

The 1st call of our program focused on **challenges** related to any of the 17 **Sustainable Development Goals**:

1. **No Poverty (SDG 1):** End poverty in all its forms everywhere.

2. **Zero Hunger (SDG 2):** End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

3. **Good Health and Well-Being (SDG 3):** Ensure healthy lives and promote well-being for all at all ages.

4. **Quality Education (SDG 4):** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

5. **Gender Equality (SDG 5):** Achieve gender equality and empower all women and girls.

6. **Clean Water and Sanitation (SDG 6):** Ensure availability and sustainable management of water and sanitation for all.

7. **Affordable and Clean Energy (SDG 7):** Ensure access to affordable, reliable, sustainable, and modern energy for all.

8. **Decent Work and Economic Growth (SDG 8):** Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

9. **Industry Innovation and Infrastructure (SDG 9):** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

10. **Reduced Inequalities (SDG 10):** Reduce inequality within and among countries.

11. **Sustainable Cities and Communities (SDG 11):** Make cities and human settlements inclusive, safe, resilient, and sustainable

12. **Responsible consumption and production (SDG 12):** Ensure sustainable consumption and production patterns

13. **Climate Action (SDG 13):** Take urgent action to combat climate change and its impacts.

14. **Life below water (SDG 14):** Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

15. **Life on land (SDG 15):** Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

16. **Peace, justice and strong Institutions (SDG 16):** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

17. **Partnership for the goals (SDG 17):** Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development.

We received **21 challenges** from **19 Challenge Organisations** (corporates and public organisations) through our open call mechanism. S3E partners in collaboration with experts (selected through an open Expression of Interest) have reviewed the submitted challenges and **selected 15 with the highest degree of potential, impact, innovation, and feasibility.** The challenges have been published on the S3E website and can be found in the table of the next page.

3.2 How is the programme structured?

The present call is an **Open Call for solvers** inviting them to submit their ideas, products, and solutions that can address **these specific challenges.** Our deep tech brokers will select the most mature and appropriate start-ups or SMEs to **match them with the Challenger Organisations**.

This open call comprises the second step of our **REVERSE Program,** where SMEs and Scale-ups acting as Solvers, will address and suggest solutions to the challenges and/or problems that the Challenge organisations face in their operations. All these solutions will also help the organisations comply with the UN SDG and create a more sustainable business and ultimately a better world.

Once solvers will start to respond to the call, our independent selected experts as **deep tech brokers** will facilitate the matchmaking process between the "challenge organisations" and the "challenge solvers" of this second phase. The selected SMEs and scale-ups (**The Solvers**) will benefit from a **customised innovation support program** designed specifically for them and the coaching and technology brokerage services they will receive.

The programme will operate on a First come – First Served for the SMEs so when a match is identified the challenge provider organisation and the solver can start working together immediately.

S3E Reverse Phases

From Challenges to solutions

FIND CHALLENGES → **SOLUTIONS** → **TECH BROKERAGE** → **INNOVATION SUPPORT**

① CHALLENGE ORGANISATIONS SUBMIT CHALLENGES

Challenge Organisations: Corporates, mature SMEs & Public sector are invited to submit problems and challenges in economic and social impact (complying with UN SDG).

② SME & START-UPS SUBMIT PRODUCTS & SERVICES IDEAS

Established SMEs & Start-ups with products or services already in the markesubmit their proposals to respond to the specific challenges.

③ TECH BROKERS MATCH CHALLENGE ORGS WITH SMES (SOLVERS)

Technology Brokers match the **Challenge Organisations** with the **SMEs** that proposed the most appropriate, feasible and impactful solutions.

④ INNOVATION SUPPORT & BROKERAGE PROGRAMME

Technology Brokers work with both **Challenge Organisations** and **SMEs** (the Solvers) to define specifications and establish collaboration between parties. Support for pursuing further Innovation support actions.

Open Call for Challenge Organisations

10 Feb '23 — Open Call for Solutions (Start-ups & SMEs)

15 May '23 — Techn Brokerage Programme & Innovation Support

Deep Tech Brokers Start-ups Interviews & Matching (Fitst Come - First Served basis)

3.3 Selected Challenges

#	Challenge	Challenge description	Related SDGs:
1	AI-driven Energy efficiency	This Challenge aims to reduce costs due to unnecessary energy consumption and avoid destruction of fuel and natural resources used and the resulting pollution caused.	SDG 9 SDG 10
2	Human-centred services with privacy at the core	This Challenge aims to tackle a social problem by use of deep tech driven innovations for the support of well-being professionals and those seeking mental help while easing the burden on the hospitals caused by the rise in the demand for mental help due to the consequences of the COVID-19 pandemic.	SDG 3 SDG 9
3	Energy Demand Forecasting	This is a targeted Challenge aiming to come up with optimal bidding strategies that will be used as part of power and gas demand forecasting algorithms for residential users	SDG 3 SDG 9
4	Monitor and improve public health, reduce health disparities, and support healthy lifestyles	Health and well-being are an important challenge for smart cities, and technology can play a significant role in improving public health and reducing health disparities. This Challenge aims to devise technology driven solutions that can solve several key problems related to the well-being of smart such as, amongst others inadequate access to care, lack of health information, inefficient use of healthcare resources and chronic disease management.	SDG 3
5	Thermal energy storage	The process of aluminium smelting and shaping requires high temperatures and incurs high energy costs. A great amount of thermal energy gets lost. This is a dual challenge as it concerns on the one side how to decrease energy losses and also reduce the negative environmental impact.	SDG 9
6	Global Monitoring of Health Misinformation	This Challenge is about finding ways to compile, analyse, monitor and respond to the proliferation of public conversations that can be detrimental to the quality of life. Applications can be considered in various levels: in global context like by the United Nations Health Organisation, applied to a local context like a municipality or a region monitoring citizen behaviours and trends, or a commercial brand that monitor consumer habits and reactions	SDG 3 SDG 4 SDG 5 SDG 9

7	Increase transparency and accountability in the wine supply chain	This Challenge is focused on enabling the track of products and materials from source to final destination in the wine supply chain. We would like to explore the potential of employing blockchain technology and cover aspects related to quality control, traceability, and sustainability.	SDG 8 SDG 9
8	Vehicle Fleet Management	Communities and SMEs alike suffer from lack of technical support in managing and growing their green vehicle rental service offerings as they are unable to compete with big commercial players. This Challenge aims to help come up with innovative and intuitive solutions that will help reverse this trend.	SDG 3 SDG 9 SDG 10
9	Flood Risk prevention in Smart Cities	Climate hazards are already a serious threat to many urban dwellers, who are increasingly affected by extreme weather. This Challenge aims to deploy Digital Twin technology to support assessment of flood risks using Open Data (Geospatial, Satellite, Climate Data) and AI-based models.	SDG 9
10	Clean energy solutions for sustainable agriculture	This Challenge aims to explore novel ways to develop and deploy deeptech innovations to generate low-cost and clean energy in particular for agricultural usage demands.	SDG 9
11	Improving the user experience for data protection and privacy	Sharing private data (health, lifestyle) is always an issue: apart from the legal aspect, citizens should have an increased feeling of value they receive from sharing or donating their own data. This challenge aims to explore ways to offer citizens and patients an increased control over their own data, incentivising them to share or donate them for health- and medical-related research and innovation activities	SDG 3 SDG 8 SDG 9
12	Prevention of harassment	With this challenge we seek to deploy viable NLP algorithms that can detect written harassment and be used as plug-ins to online corporate communications	SDG 5 SDG 8

13	Digital transformation processes	Manufacturers and distributors of products in electronic marketplaces face many challenges and there is an increasing demand for coupling IT processes close(r) to the production processes.	SDG 9 SDG 10
14	Optimization of machine operation	Production plants consist of many isolated machines that are not connected with each other. How can a plant interconnect all machines in one single platform? This platform will support AI and Data Analytics and enable functions such as controlling the machines, monitoring, and improving productivity, updating MES etc.	SDG 9
15	Raw material and alloy upgrade	In a Scrap Sorting Unit of an aluminium production company, aluminium scrap goes through the shredder before going through the smelting process to turn into aluminium billets. During the alloying process unwanted elements remain in the material. A) How could we remove these unwanted elements? The alloy mixture is determined by employees based on experience (% of scrap and % al. billets). B) How could we optimise the mixture "recipe" to give the final product the characteristics we want?	SDG 9

4 Eligibility criteria

S3E Reverse is launching its first open call for applications for **Solvers: start-ups and SMEs** with deep tech solutions to overcome the challenges described above**.**

Any kind of SME can participate as long as it meets the **following criteria:**

● Is established in any country of the Southern European science-based innovation ecosystem is eligible for the Horizon Europe program including associated countries[2].

● Is capable of addressing a challenge that has been submitted as part of the conducted open call for Challenges and which is related to the 17 Sustainable Development Goals.

● Can justify the development and / or deployment of a Deep Tech solution.

5 Open call submission

The **Solver** will be invited to submit a simple and quick application to present the proposed solution to any of the submitted challenges of the previous phase. The application will be submitted through the F6S platform and is available at:

https://www.f6s.com/s3e-reverse-for-solvers/apply

5.1 Application form questions

In application form the solvers must fill in the following information:

● Solution to a selected challenge and a short description.

● Relevant experience in the particular technology domain/domains in need (Selection).

● Context of the application.

● Response to any initially posed technical key criteria, requirements, or constraints posed by the Challenge organisation.

● Benefits that the solution will bring to the organisation.

● Expression for the type of commercial or business nature for the provision of the solution to the challenge:

  ● Custom technology solution provision to be negotiated with the Challenge organisation

  ● Collaboration as part of co-financed action under HE or other programmes (RIA, PPI, PCP, etc.)

  ● Technology licensing

  ● Joint new venture

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[2] For the scope of S3E, Southern European countries include the following European countries: Bulgaria, Croatia, Greece, Italy, Malta, Portugal, Cyprus, Romania, Slovenia and Spain. And the following Associated countries: Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia, Kosovo and Turkey.

- Other (to be defined during the technology brokerage process)
- Relevant SDG if other than the originally selected one by the Challenge organisation (Selection).

5.2 Restrictions

Solver organisations may apply for more than one Challenge in the same Open Call, with different applications, and may also apply again in future Calls. It is also possible that two Solver organisations submit a very similar solution to a challenge. In this case the Technology Broker may suggest working with both of them (in full confidentiality) to combine the solutions to a challenge in the best possible way and to make the best use of available resources.

5.3 Selection Process

The Solvers are going to be selected by an independent committee of experts based on the following criteria:

Category	Criterion	Weight
Challenge response	Degree of Innovation and novelty of the proposed solution to a challenge	20%
	Feasibility (Technical, time, budget)	20%
	ESG (Environmental / Social / Governance) Impact	20%
	Relevance to EU priorities	10%
Company	Reliability & Technical Capacity of Organisation	15%
	Robustness of the Organisation	15%

The Selection Committee will be composed of two independent experts (Deep Tech Brokers) and a member of the S3E consortium. Each member will evaluate the Solutions to the challenges individually based on the above criteria. The final ranking will be decided at a consensus meeting of the committee. An independent technology broker from our pool of experts will be assigned to each Challenge organisation and will facilitate all further collaboration.The evaluation will operate on a 'First come – First Served' for the Solvers applicants so when a match is identified the Challenge Organisations and the Solvers can start working together immediately.

In case a selected submitted solution to a challenge requires further elaboration or justification, the appointed tech broker will contact the Solver to improve the description of the Solutions before the publication.

The matching between challenge organisations and solvers will be kept confidential and only anonymised and generalised results will be announced. All Solver Organisations will be notified regardless of the result of the selection process.

5.4 Timeline of the 1st Open Call for Solvers

The open call for the Solver will be launched on the **14th of March 2023, 12.00 pm CET.**

The call will stay open till **15 May 2023** at **5:00 pm CET.**

As already mentioned, the matching process between the challenge organisations and solution providers will be on a first come – first serve basis, so the faster you submit your proposal the more chances you have to be selected for a suitable match.

The solution proposals from scale-ups and SMEs will be evaluated by independent experts and the selected companies will be invited for an interview by our deep tech technology brokers.

Following the final selection interview the technology brokers will work with the selected scale-ups and SMEs to match the submitted challenges with the proposed solutions.

5.5 Application Platform

The F6S platform will be the entry point for all challenges' submissions to S3E Open Calls, which is directly linked to the S3E website (https://south3e.eu/apply-now). Submissions received by any other channel after the deadline will be automatically discarded.

Interested start-ups, scale-ups and SMEs can apply via:

https://www.f6s.com/s3e-reverse-for-solvers/apply

6 The benefits of participating in S3E Reverse

6.1 Why a brokerage program?

Both the private and the public sector are facing countless challenges that could be addressed through deep tech open innovation. On the other hand, there are so many teams, entrepreneurs, and start-ups that although they have worked and developed wonderful innovative solutions, they cannot find their way to the market, or they fail to focus on the actual problems because simply they are not able to identify them. There is a clear gap of communication and collaboration between the organisations that must respond to specific deep tech challenges and those companies that could help address them.

S3E Reverse has a twofold objective. First to collect challenges from corporates and public organisations and secondly to invite innovative SMEs and start-ups to contribute with Deep Tech based solutions to address those challenges. The aim of our brokerage program is to bridge this gap and match the challenge organisations with the most appropriate start-ups and SMEs that can provide solutions and address these challenges.

The brokerage program is a highly customised program that will be designed explicitly for each case.

6.2 What's in it for the Solvers?

Solver organisations (SMEs, mature Start-ups, scale-ups) will apply to **S3E REVERSE** Open Calls to present a Deep Tech Solution to a submitted challenge that will help the challenge organisation solve the problem in need of a deep tech approach and which impacts to the attainment of at least one of the SDGs.

The selected Solver organisations will work with our **Tech Brokers** to better define their Solution to a challenge and develop a solid technical roadmap that will devise the path towards a viable solution.

Through the technology brokerage process both the Challenge and the Solver organisations will be able to match a problem with a potential solution by means of a collaborative and co-creation approach.

Such collaborations may lead to, amongst others, the direct procurement of innovative solutions, the formation of a new joint venture, the establishment of a research collaboration, or some other type of collaboration that will be explored, defined and agreed by both sides during the technology brokerage phase.

Moreover, our program will help organisations to team up with innovative scale-ups to partner in a common proposal under Horizon Europe calls for Pre-Commercial Procurement (PCP) or Public Procurement for Innovative Solutions (PPIs) or other opportunities that may improve the capacity of both.

6.3 How else can Solvers benefit?

In addition to the technology brokerage, solvers will be able to benefit from a portfolio of appropriate services which will be customised to their specific case by their tech broker:

- **Innovation Readiness Assessment**: a Self-assessment of the solver that will help the company identify weak points or problems in their growth. Our Technology brokers can then suggest specific actions that can help the solver improve their operations.

- **Training in public procurement**, including Pre-Commercial Procurement and Public Procurement for Innovative solutions (PPIs) that will help scale-ups access bigger projects and clients.

- **Webinars**, access to the webinars of Tracks 1 & 2, on diverse topics pertinent to the development of the relevant skills (e.g., intellectual property, financials, business development, venture funding.). Note: a total of six webinars (one hours long) will be held.

- **Networking** with industry leaders and showcase opportunities at the S3E Open day and in collaboration with other programmes and initiatives.

- **Gaining market traction** by being connected to larger companies and potential customers or test-beds.

Participation in the above is optional for the Solver start-up or SME. Our technology broker will suggest a customised support programme but it is up to the Solvers to decide what service they would like to use.

7 General Information

7.1 Means of submission

The F6S platform will be the entry point for all proposals' submission to S3E Open Calls, which is directly linked from S3E' website: https://south3e.eu. Submissions received by any other channel and after the open call duration will be automatically discarded.

7.2 Language

English is the official language for S3E Open Calls. Submissions done in any other language will not be eligible and, thus, will not be evaluated. English is also the only official language during the whole execution of the S3E Start program.

7.3 Data protection

The proposals are confidential, and each person involved in the program will sign a non-disclosure agreement, namely the reviewers of the proposals.

To process and evaluate applications, S3E will need to collect Data. S3E partners will act as Data Controllers of data submitted through the F6S platform for these purposes. The F6S platform's system design and operational procedures ensure that data is managed in compliance with The General Data Protection Regulation (EU) 2016/679 (GDPR). Each applicant will accept the F6S terms to ensure coverage.

Please refer to https://www.f6s.com/privacy-policy to check F6S platform data privacy policy and security measures and to https://south3e.eu/privacy-policy/ to get informed about the S3E Start Privacy Policy.

8 Information and support

For the application form and detailed guidance for applicants, please download the files available at the https://south3e.eu website.

The S3E consortium has in place a helpdesk available for all participants and accessible from our website.

More info at https://south3e.eu/apply-now/.

Open call #1 for Solvers support material:

- **S3E Reverse for Solvers: Guidelines for Applicants**, this document.

- **S3E Reverse Open Call Text for Solvers #1,** containing information about the open call text, announcing the launch of the new call for solvers and the main conditions to participate.