

Space for Sustainable Textile Industry

European Space Agency

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Welcome to the Webinar!

Before we start...

- Please keep your microphones muted during the webinar and make sure your webcam is switched off.
- You can use the conversation function anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar



ESA Welcome and **Introduction**

About ESA's **Space for Sustainable Textile Industry** competition

Sustainability in the textile industry and **Space**

→ Jeffrey Thimm (GOTS): Textile Traceability

How to Apply to the competition

Q&A Session



space transportation



science



human spaceflight



earth observation



telecommunications
and applications



navigation



exploration



operations



technology



Business Applications: space-enabled services

BASS aims at reaching **commercial exploitation of space assets, data and capabilities** addressing **technical feasibility and business development**. This includes the development of **operational services for a wide range of users** through the combination of different systems, and **support in creating viable companies as well as to existing companies**



What can BASS offer to companies?

Your Business Powered by Space:



Zero-equity funding (from €50k to €2M+ per activity)



A personalised ESA consultant



Technical support and commercial guidance



Tailored project management support



Access to our international network of ESA and partners



Access to our network of investors



Credibility of the ESA brand



What's in it for us?

SOCIO-ECONOMIC IMPACT

Deliver **social value** and **economic sustainability**



USE OF SPACE TECHNOLOGY

Expand the **utilization of space** in **new markets** and **user communities**



INDUSTRY COMPETITIVENESS

Strengthen **European Industry competitiveness** on the global space and non-space markets



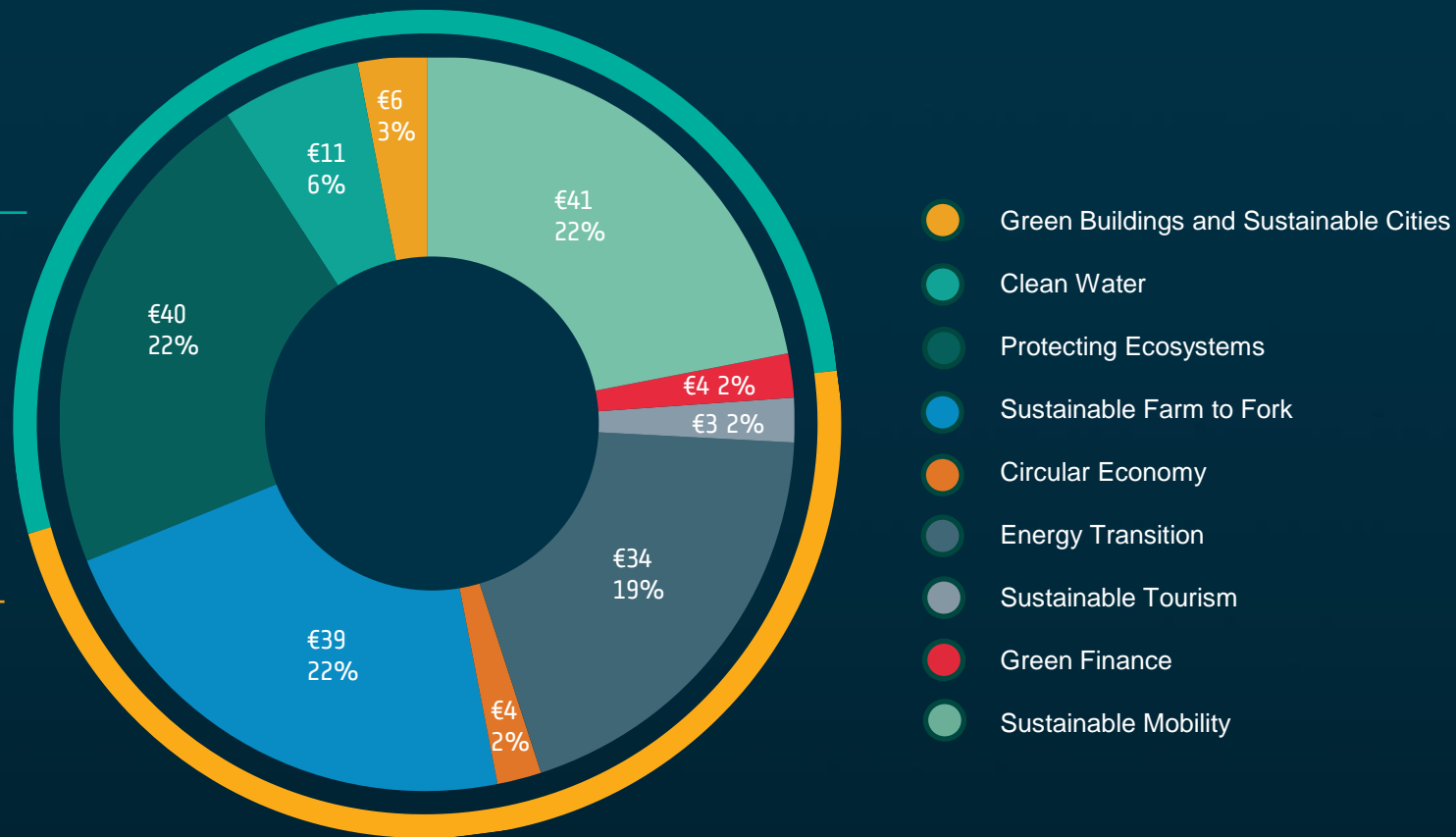
Sustainable applications with green impact

It is estimated that abandoning the current high-carbon pathway in favour of a low-carbon future will bring €26 trillion in economic benefit.

Investment in BASS Green Activities since 2010

Market demand for green solutions, new ESA BASS funding opportunities, and collaborations with industry partners will support future growth in sustainable development investment

With **€183M** invested into **300 ideas** the green transition now drives **48%** of all new ESA Space Solutions.



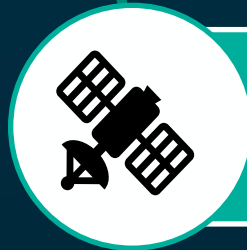
Space for Bioeconomy Task Force

The focus of the Task Force is to **unite interdisciplinary perspectives** to generate a knowledge base for a new, sustainable bioeconomy, and to **demonstrate the commercial perspectives of using natural and biological resources** to produce energy, food, animal feed, and expensive chemicals.

Objectives



Promoting the development and demonstration of **sustainable innovative space-based technologies and applications** addressing the sustainable and circular practices in the bioeconomy supporting the growth of a sustainable green economy;



Increase the **impact of the space-based applications** developed through ESA programmes, thanks to the support of the sector stakeholders and financial actors



The Task Force Members will identify key topics based on priorities.

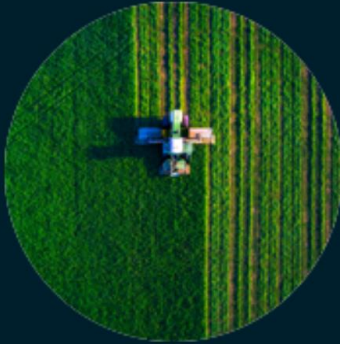
Bioeconomy task force members



<https://business.esa.int/bioeconomy>



Potential Topics



Sustainable Agriculture



Sustainable Forestry



Sustainable Pharmaceuticals



Sustainable Textiles



Waste Management



Water Resources

Space for Sustainable Textile Industry Call



Introduction: textile industry

- Fourth highest pressure category in EU for use of primary raw materials and water (food, housing and transport)
- Fifth in GHG emissions
- Textile value chains: long, globalized and diverse
- Cotton industry:
 - Employs 2% of world's population
 - Water demanding
 - Considerable use of pesticides/ fertilizers
- Better cotton practices:
 - organic & regenerative
 - Mitigating environmental impact
 - Provide traceability
- Aim of the call: increase transparency, sustainability and resilience of the cotton value chain and the textile industry in general with the use of space assets.



Areas of applications

Discussions have been undertaken with relevant stakeholders to identify the following areas of applications:

- Baseline (historical views) on basins: to restore nature & freshwater
- Impacts on water quality
- Assessing environmental impacts of different cotton sustainability practices
- Traceability issues
- Monitoring ecosystem cumulative impact
- Analysing ecosystem services
- Identification of areas for ecosystem restoration or conservation
- Sustainable textile supply chain





SatEO: geospatial, environmental, weather & mapping information to evaluate "what-if" situations and help in decision-making. SatEO data could also be used for monitoring of natural environment impacts and assess where restoration is feasible.



SatNav: Provide geo-tagging services for data collected by IoT. IoT sensors can be used for example to measure quantity of pollutants in the air. SatNav can then pinpoint the location where the pollution is generated.

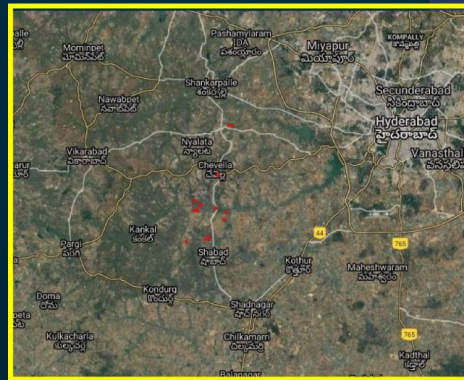
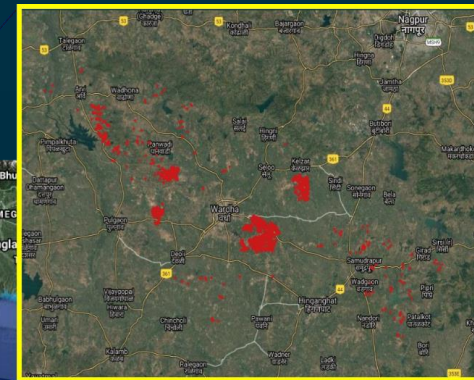


SatCom : Communication with users in remote locations without terrestrial network.

Greener Cotton leverages satellite data and GIS technology to improve and support sustainable cotton production

It consists of the following services:

- Prevent identity fraud: Data Validation Service
- Production monitoring:
 - Crop performance monitoring
 - Yield assessment
- Supporting sustainable farming:
 - Agronomical weather and forecast
 - Water use efficiency service and irrigation advisory
 - Disease and pest risk management
 - Land responsibility
- **Targeted Users:** Extension services, Gineries, Traceability platforms and auditors



Data analysis

- Selected pilot region (Gujarat, Maharashtra, Telangana)
- 1147 cotton fields
- Kharif Season 2019/20 & 2021/22

[Greener Cotton | ESA Space Solutions](#)

Guest Speaker Jeffrey Thimm

Organic Production Specialist,
Global Organic Textile Standard (GOTS)





GLOBAL ORGANIC TEXTILE STANDARD
ECOLOGY & SOCIAL RESPONSIBILITY

ESA Bioeconomy Taskforce

Perspectives on Textile Traceability

Jeffrey Thimm

22 January 2025

www.global-standard.org

Our vision is that organic textiles will become a significant part of everyday life, enhancing people's lives and the environment.





GOTS is the premier processing standard for textiles made from organic fibers

- Internationally recognised
- Independent third-party certification
- Verifiable, Identifiable and Traceable
- Environmental & Social Criteria
- Covers entire supply chain
“from field to fashion”



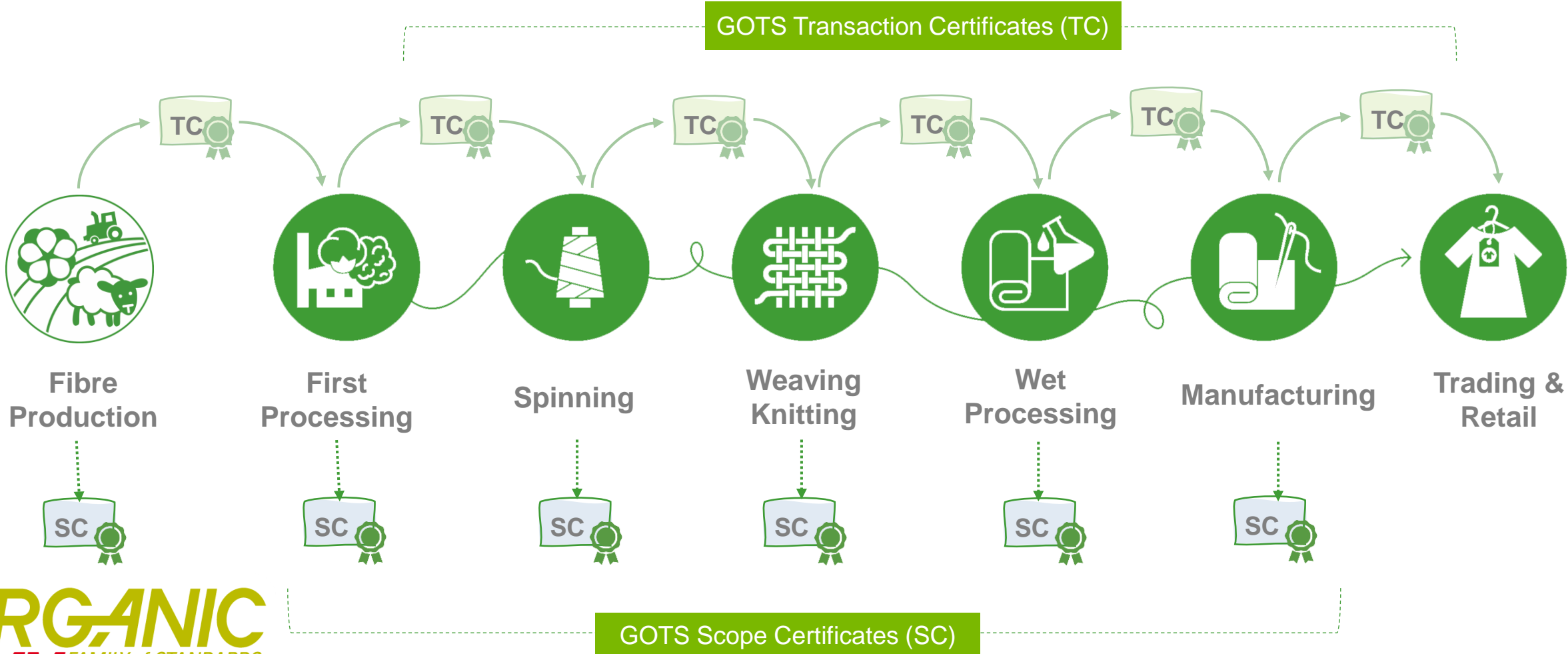


A Holistic Approach to Sustainability in Textile Production





Traceability throughout the Value Chain



That's Organic - Worldwide.



GLOBAL

IFOAM IFOAM Standard

International Standard for Forest Garden Products (FGP)
Biocyclic-Vegan Standard



AFRICA

East African Organic Products Standard
Tunisia Organic Regulation
FENAB Standard, Senegal
The SAOSO Standard, South Africa
Ecological Organic Standard for Ghana, Ghana
Togo Organic Standard, Togo
National Organic Regulation of Morocco



ASIA

Asian Regional Organic Standard
ASEAN Standard for Organic Agriculture



Saudi Arabia Organic Regulation

China Organic Regulation
India Organic Regulation
Israel Organic Regulation

Japan Organic Regulation
Korea Organic Regulation
Certification Alliance Organic Standard
Diaoyutai Original Ecological Products Standard, China
OFDC Organic Certification Standard, China
Sunshine Earth Organic Standard, China
HKORC Organic Standard, Hong Kong
Biocert International Standards, India
Japan Organic & Natural Foods Association Organic Standard, Japan
Earth Tag Organic Standard, Malaysia
MASIPAG Organic Standards, The Philippines
DCOK, LLC International Standards, South Korea
ACT Basic Standard, Thailand
Vietnam PGS Standards, Vietnam
BIO-KG Standard, Kyrgyzstan
Bhutan Organic Standard, Bhutan



OCEANIA

National Standard for Organic and Bio-Dynamic Produce, Australia
New Zealand Organic Export Regulation
Pacific Organic Standard, Pacific Community



EUROPE

EU Organic Regulation
Switzerland Organic Regulation
Turkey Organic Regulation



Bio Suisse Standards, Switzerland

Nature & Progrès Standards, France
The EcoWellness Standard, Germany



THE AMERICAS

Argentina Organic Regulation
Canada Organic Regulation
Costa Rica Organic Regulation
Ecuador Organic Regulation

USA Organic Regulation
Argencert Organic Standard, Argentina
OIA Organic Standards, Argentina
IBD Organic Guidelines, Brazil
CCOF International Standard, USA

THE FAMILY OF STANDARDS

contains all standards officially endorsed as organic by the Organic Movement, based on their equivalence with the Common Objectives and Requirements of Organic Standards. Both private standards and government regulations are admissible.

www.ifoam.bio/ogs



Marple[®]

**Cotton Cultivation Remote Assessment
CoCuRA**

Cotton Cultivation Remote Assessment

2024 Results

- 6000+ crop fields visited for data collection
- 2.7 million km² analysed
- Cotton Field Identification: ~ 97% accuracy
- Organic Cotton Differentiation: ~ 80% accuracy

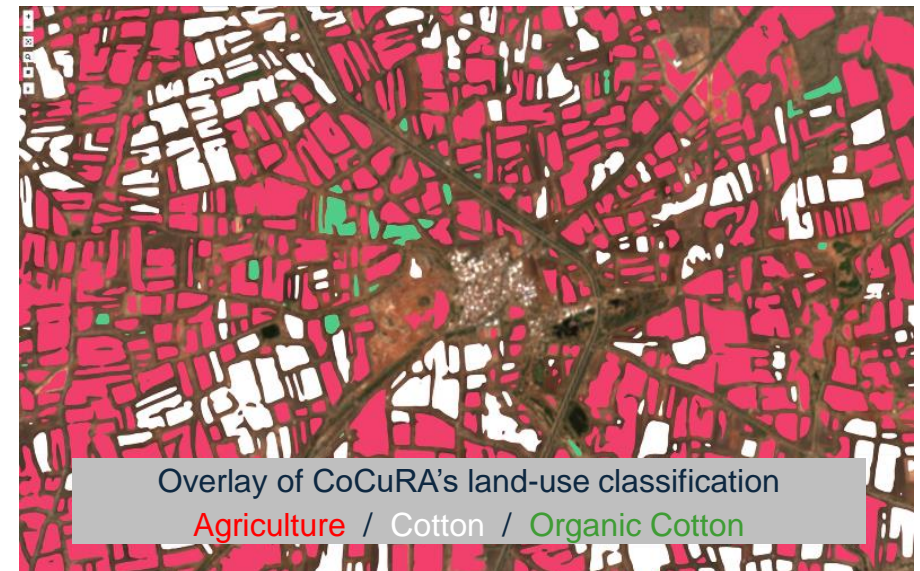
Organic Agriculture Claims

can be dependably

Monitored Remotely



ESA Sentinel satellite image



Overlay of CoCuRA's land-use classification

Agriculture / Cotton / Organic Cotton



plant fibres



animal fibres



Cotton



Jute



Coir



Kapok



Flax/Linen



Hemp



Wool



Silk



Alpaca

+++



Cashmere



Mohair

NEEDS: advanced traceability for textile fibres *(remote sensing)*

✓ **GOTS: region of origin & organic agriculture** *(documentation)*

➤ **New Impact Categories (field-level data):**

- **Social** agriculture as livelihood
intercropping for food security
- **Land Use** deforestation / biodiversity / habitat
- **Water** rainwater infiltration / irrigation
- **Animal Welfare** stocking density / rotational grazing
- **Climate** carbon sequestration / GHG flux





GLOBAL ORGANIC TEXTILE STANDARD
ECOLOGY & SOCIAL RESPONSIBILITY

Jeffrey Thimm

thimm@global-standard.org

www.global-standard.org

How to Apply

ESA UNCLASSIFIED – For ESA Official Use Only



Space for Sustainable Textile Industry: About the Feasibility Study



Winner(s) of the competition will run a **9-month study** to investigate the **technical feasibility** and **commercial viability** of their idea.

Parallel contracts are possible

ESA will provide funding at 80% for a maximum of €200K to each winning team.

After the study there is the opportunity for **further funding** and support from ESA.

Visit: [Space for a Sustainable Textile Industry](#)



Who can apply?

To be **eligible for funding**, your team must be based in one of the **following countries**:

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, Norway, Netherlands, Poland, Portugal, Romania, Slovenia, Sweden, Switzerland and United Kingdom.

If you are considering applying, you must **inform your National Delegation** to obtain a **letter of authorisation** allowing the funding of the proposed activity. Contact details of each National Delegate can be found here: <https://business.esa.int/national-delegations-0>

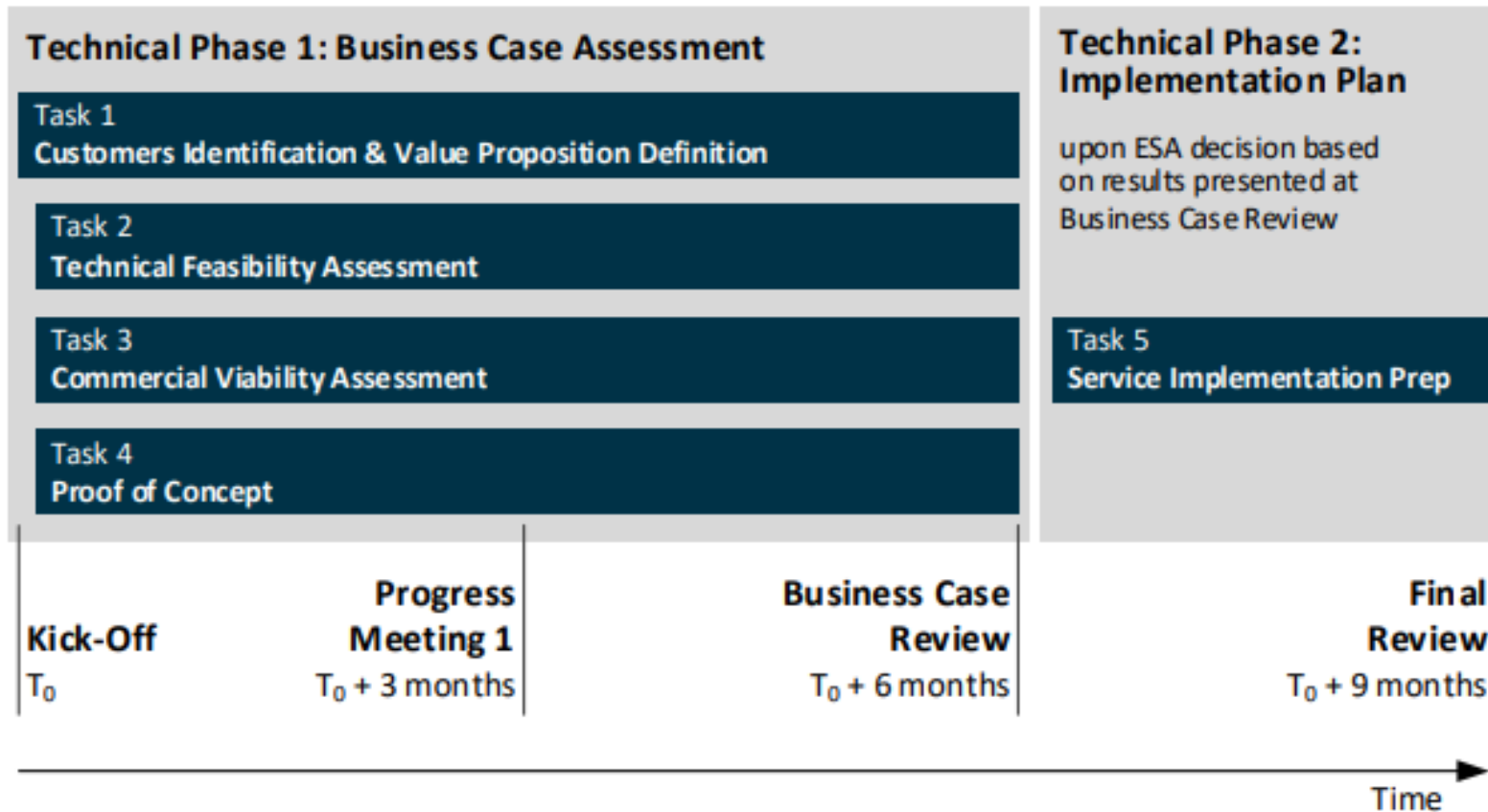


How to apply?

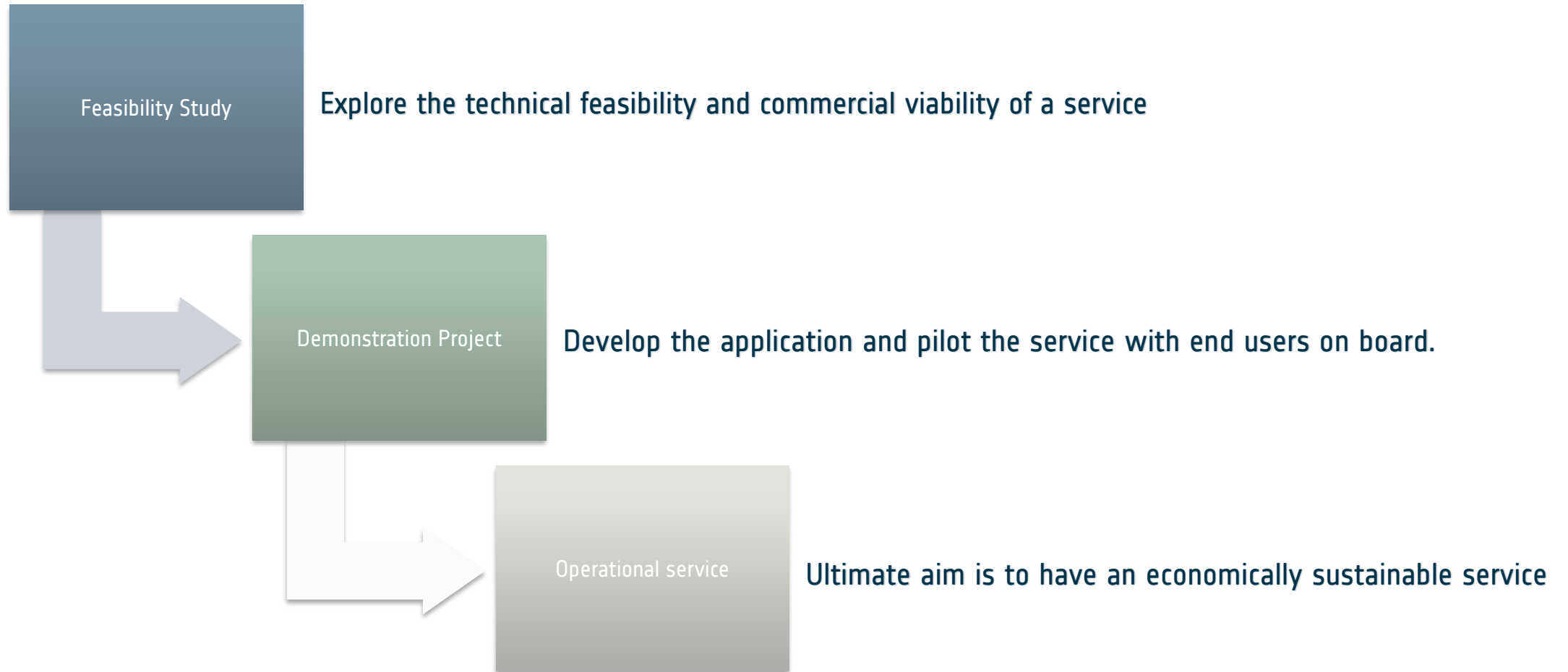
1. **Register your team** on esa-star Registration today!
<https://esastar-emr.sso.esa.int>
2. On **27th of January 2025** visit esa-star Publication and search for this opportunity to download the official competition documents.
<https://esastar-publication.sso.esa.int>
3. Use the official documents to prepare your proposal
4. Contact details of each National Delegate can be found here:
<https://business.esa.int/national-delegations-0>
5. Submit your proposal via esa-star Tendering by **23rd of March 2025**.
<https://esastar.sso.esa.int>
6. Your proposal needs to include a **Letter of Support** from the user/customer representative

Opening dates: 27th January – 23rd March 2025





Overall Aim of the Feasibility Study



Thank you for your attention: Q&A

Opening Date: 27th January 2025

Closing Date: 23rd March 2025

Click here and visit
[Space for a Sustainable Textile Industry](#)

