

STARS EU

Agenda for Research Solutions

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Acronym List

STARS EU partners universities

HUAS	Hanze University of Applied Science, Netherlands
ULL	University of La Laguna, Spain
IBP	Bragança Polytechnic University, Portugal
HSB	Hochschule Bremen - City University of Applied Sciences, Germany
SUO	Silesian University in Opava, Czechia
HV	University West, Sweden
CUT	Cracow University of Technology, Poland
UMLP	Université Marie et Louis Pasteur, France
UAMD	Alexandër Moisiu University of Durres, Albania

TIGs - Thematic Interest Groups

TIG ACI	Arts & Creative Industry
TIG CE	Circular Economy
TIG DT	Digital Transformation
TIG ET	Energy Transition
TIG E+I	Entrepreneurship & Innovation
TIG HA	Healthy Ageing
TIG ISJ	Inclusion and Social Justice
TIG LS	Living Spaces
TIG SI	Sustainable Industry

Acronyms

HEI	Higher Education Institution
ERA	EU Research Area
ARS	Agenda for Research Solutions
STEP	Strategic Technologies for Europe
S3	Smart Specialisation Strategy
IPR	Intellectual Property Rights
K&TTO	Knowledge & Technology Transfer Office
RTA	Regional Transition Accelerator

Introduction

The STARS EU Alliance

Increasingly complex societal challenges, affect all parts of the world, from global to local levels. In a future of unprecedented societal shifts, Europe requires new innovative collaborative multi-disciplinary research educational structures, activities and efforts. This is a main driving force for the establishment of the future-oriented European University named STARS - Strategic Alliance for Regional Transition.

STARS EU is part of the European University Initiative (EUI), encompassing 64 European Universities alliances across Europe. The STARS EU Alliance partnership started in December 2019, striving for a long-term sustainable inter-institutional strategic cooperation.

STARS EU includes 9 universities from non-capital regions in nine countries from all parts of Europe, which provide a balanced geographical coverage of different European regions. It expands from the most occidental area of Europe (Canary Islands) to the very East, also encompassing the Northern, Central and Southern Europe.

The STARS EU Alliance focus on strengthening and expanding collaborative research and innovation in the regions, contributing to a green -digital – social transition in Europe. Hence, the general objective of STARS EU is to deepen and intensify collaboration of truly engaged universities to jointly become a future-oriented European University that will:

- Create a new generation of future-oriented students.
- Deliver innovative, flexible, diverse, future-proof and challenge-based educational and research systems.
- Exploit the synergies of inter-regional collaboration.
- Impact positively and substantially on sustainable regional and European development.

STARS EU Agenda for Research Solutions

Background

STARS EU, as an important player and change agent, has developed the STARS EU Agenda for Research Solutions (ARS) as a strategic framework to promote research solutions that, in collaboration with public and private stakeholders, foster competitive, innovative and sustainable growth and development across regions, and in the broader context of the European Union. The ARS is a guiding document through which the alliance will consolidate and address multiple key objectives related to cooperation, impact and knowledge creation for regional transitional development in Europe.

The agenda not only seeks to create academic impact, but also to transform sectors and industries through the promotion of meaningful collaboration with the main actors in society. For this reason, it is necessary to identify the demands of those sectors that need to adapt to changes, whether economic, technological or social.

To successfully meet future demands and needs in different areas, STARS EU promotes applied research that foster innovation, enable digital and sustainable transitions, strengthen resilience, and ensure equitable social outcomes. This is possible by establishing a collaborative and active research model between the alliance universities, researchers, students and regional partners. In this way can the co-creation of knowledge be promoted.

The ERA & STARS EU Agenda for Research Solutions

The overall EU Research Area (ERA) aims to create and consolidate a single, borderless market for research, innovation, and technology across the EU. By integrating the ERA with the European University Initiative, EU aims to create a robust framework for addressing challenges of ethical, social, environmental, and economic character. This integration equips higher education institutions (HEIs) to enhance a sustainable, competitive, resilient and inclusive Europe.

The ERA Policy Agenda for the period 2022-24 and 2025-27, prioritises investments and reforms in research and innovation. Some of the key priorities of the ERA include:

- Strengthening mobility of researchers, knowledge, skills and technology across Europe.
- Improving access to research excellence for high-quality research and innovation activities.
- Promoting open science and recruitment to ensure transparent and inclusive research.
- Coordinating research and innovation to support collaborative research efforts for European regional transitional development.

The ARS strategic framework addresses multiple key objectives related to cooperation, impact and knowledge creation. In so doing, the STARS EU Agenda for Research Solutions is closely linked to the overall EU Research Area and Policy Agenda to create an innovative, future-oriented European University.

STARS EU Partner Universities

Introduction

The nine partner universities included in STARS EU are all located outside of the capital areas. Being so, the partner universities have close regional connections with a range of stakeholders in the private and public sector in the respective regions. Furthermore, the partner universities can, to some extent, be described as diverse in terms of size, maturity and research focus.

Description of Partner Universities

Below is a short presentation of the university partners.

Hanze University of Applied Science (HUAS), located in North Netherlands. In all the fields, dedicated research (expertise) centres collaborate with local/regional, national and international partners. The research is applied practice-oriented, in co-creation and cooperation with societal partners. Research priorities/themes are set in a strategic plan determined by the regional innovation agendas, with a regional transitional focus including:

- Healthy, Lifestyle and Care
- Wellbeing and Growing Up
- Energy and Sustainability
- Entrepreneurship for Economic & Social Innovation
- Built Environment and Infrastructure
- Circular and Bio-based Economy
- Arts and Culture
- Talent Development and Educational Development

Bragança Polytechnic Institute (IPB), founded in 1983, with campuses in Bragança, Mirandela and Chaves, in the Northeast of Portugal, promote high quality research and technological development, particularly in cooperation with the business community in the region and country. IPB is founding member of the knowledge transfer structures, MORE COLLAB and Aquavalor. IPB organise its research & development according to its research labs, including:

- CIMO (Mountain Research Centre)
- CeDRI (Research Centre in Digitalization and Intelligent Robotics)
- UNIAG (Management Applied Research Unit),
- CiTED (Transdisciplinary Research Centre in Education and Development)
- LiveWell (Research Centre for Active Living and Wellbeing)



- GICoS (Sustainable Construction Research Group)
- SusTEC (Associate Laboratory for Sustainability & Technology in Mountain Regions)

University of La Laguna (ULL), located in the outermost region of EU in the city of San Cristóbal de La Laguna, Tenerife, Spain, is ranked among top Spanish institutions contributing to regional development with strong ties to various regional public and private institutions. Research priorities/specialisation include:

- Astrophysics (Canarian Institute of Astrophysics - IAC)
- Renewable Energies (Technological Institute of Renewable Energies)
- Digital Transformation & Industry 4.0/5.0
- Blue Economy
- Biodiversity & Natural Products (Institute of Natural Products and Agrobiology)
- Connection of Regions
- Societal & Economic Development of Isolated Territories
- Biomedicine (Inst. of Biomedical Technologies - ITB, Inst. of Neuroscience - IUNE)

Hochschule Bremen - City University of Applied Science, Germany (HSB), Hochschule Bremen in northwestern Germany, has close ties with its regional and national business, startup and research ecosystems and a vast international partner network. As a member of Bremen's innovation clusters and industry associations, HSB promotes innovation through cooperation. HSB hosts research and transfer activities in six inter-disciplinary and cross-faculty research clusters on future social issues. HSB's specific research strengths include:

- **Aerospace:** Deals with application-oriented research topics in aerospace technologies and related fields.
- **Blue Sciences:** The cluster contributes to the further development of maritime economy and technology, duly taking into account protection of the marine environment.
- **Region in Transition:** Together with partners from business and society, the cluster develops solutions in the areas of renewable energies, environmental resources and their sustainable use, as well as architecture and urban development.
- **Digital Transformation:** The cluster bundles research activities in this area, starting from technological basics in computer science and data processing, through the user-centred development of digital solutions in different interdisciplinary fields of application, to the study of the effects on individuals and society.

- **Quality of Life:** Focuses on how to shape social change. In this context, the quality of life embraces an understanding of societal prosperity, of prospects for prosperity – even with limited growth – and of individual well-being.
- **Dynamics, Tension and Xtreme Events:** Investigates the impact of innovation and transformations on the economy and society. The innovations become the economy (e.g. Digitalization) and from society (e.g. Energy transition) initialized.

University West (HV), founded in 1990, located in the city centre of Trollhättan, is a regional industrial centre on the west coast of Sweden. HV conduct co-creative research in collaboration with the surrounding regional community to create a sustainable future. The main research areas of academic excellence are Production Technology (PT) and Work-Integrated Learning (WIL). HV's research strength include:

- Work-Integrated Learning (WIL) is a transdisciplinary research field focusing on relations between theoretical and practical knowledge for learning in various academic and non-academic settings. The WIL research field at HV focuses on the following themes:
 - ✓ Transition, Management, and Digitalization
 - ✓ Professionals' Learning in Working Life
 - ✓ Students Learning in Higher Education
 - ✓ Co-Creative Societal Development
- The Production Technology research field works with various advanced material and production processes. The PT research field at HV focuses on the following themes:
 - ✓ Welding & Welding-Based Additive Manufacturing
 - ✓ Powder Bed Fusion Additive Manufacturing
 - ✓ Thermal Spray
 - ✓ Flexible Automation
 - ✓ Advanced Non-Destructive Testing & Evaluation
 - ✓ Operations & Supply Chain Management
 - ✓ Energy Transition
- Learning and Caring for Sustainable Health
- Organisation and Leadership

Cracow University of Technology (CUT), located in Poland, where technology companies dominate as strategic partners. Important partners also include other regional, national and international stakeholders. CUT undertakes applied research that contribute to solving important social problems. Research priorities/specialisation include:

- Bioeconomy
- Bioengineering
- Mechanical, construction, material and chemical engineering
- Energy and Environment transformation
- Spatial Design and Cultural Heritage Conservation

- Applied computer science

Silesian University in Opava (SUO), founded in 1991, is located in Czechia. SUO has five faculties, including humanities, art, social sciences, nursing, business administration and physics. Research priorities/specialisation include:

- Entrepreneurship
- Business innovations
- Smart approach in public and regional administration
- Econometrics and Statistics
- Business Process Management
- Marketing and E-commerce
- Financial analysis and modelling

University Marie and Louis Pasteur (UMLP), is located in France. Being an old well-established university, UMLP has close connections with a large number of industrial and societal actors, from local to regional, national and international level. Research priorities/specialisation include:

- Advanced materials and processes
- Microtechnology and intelligent systems
- Sustainable smart and connected mobility
- Hydrogen for energy and economic transition
- Integrated and individualized health and care

Alexandër Moisiu University of Durrës (UAMD) is located in the coastal city of Durrës, Albania. UAMD is a key academic institution in the region, integrating education, research, and innovation through connections between academia, industry, and society to enhance applied research and professional development. UAMD focuses on interdisciplinary applied research, structured around the following key themes:

- Education Policies and Lifelong Learning
- Entrepreneurship and Business Innovation
- Law and Governance
- Health Sciences and Public Services
- Engineering
- Maritime Studies (Navigation and marine engineering)
- Applied Computer Science and Digital Transformation

Strengths of the STARS EU Partners

In an increasingly complex and challenging world, the EU officially highlights a need for Europe to become more innovative, resilient and competitive. To secure and enhance a pathway of sustainable long-term growth, it is necessary to reignite EU's productivity and competitiveness. To do so, there is a need to align, act, and accelerate research and technology efforts to boost an innovation-driven competitive Europe. The STARS EU partner universities comprise certain research strengths of diversity, flexibility and regional connections that are highly relevant in promoting alignment, innovation-driven competitive research for regional transitional development.

The different geographical regional connections are seen as a strength, where collaborations can enhance and strengthen cross-fertilisation of knowledge and expertise of institutions, and in relation to regional sectors and industries operating in different administrative, educational, socio-economic, and linguistic settings. The regional collaborative focus ensures flexible synergies at interregional level, allowing European values, cultural diversity, and regional strengths to mutually reinforce one another, building a more resilient and united Europe.

The nine STARS EU partner institutions are all located in non-capital regions, facing similar challenges. The geographic diversity enhances flexibility where complementary assets, knowledge and experiences can be used for regional inter-institutional and cross-sectoral research networks and expertise to share and strengthen research and innovation capacity from local to regional and European level. Ultimately, interregional research collaboration can provide the adaptability, relevance, and impact necessary for solutions, contributing to more cohesive and resilient European development.

A particular strength of the partner universities is the close connection and cooperation with local business and organisations, municipalities and provinces in the respective region. Close collaboration with local and regional stakeholders provides different knowledge, skills and experiences. This enriches research processes, ensures greater relevance to real-world challenges, and fosters more impactful, inclusive, and sustainable outcomes. Hence, through co-creative problem-based collaborative research efforts, there is a unique possibility to deepen, expand and enhance cooperation between the partners, and local and regional stakeholders, addressing various challenges and become an innovative change agent to accelerate regional transitions.



STARS EU brings together a considerable academic strength of nine complementary types of HEIs, including comprehensive, research-intensive universities and universities of applied sciences. The HEI institutions incorporate a broad and diverse scope of research focus areas and expertise, of great relevance as research institutions, incubators, accelerators providing knowledge, skills and opportunities for regional transitional development.

Implementation of STARS EU Agenda for Research Solutions

Introduction

Based on the overall aim of promoting transitional regional development, STARS EU research develops co-creative collaborative research of excellence, through cross-sectoral transdisciplinary approaches, by addressing complex challenges in identified STARS EU priority areas.

To successfully meet future challenges and needs in different areas at both regional and EU levels, STARS EU collaborative research efforts build on academic expertise and practical knowledge and experiences in each partner region.

Research Themes

At the intersection of the partners' expertise and external stakeholders' collaborative research themes are identified, enabling STARS EU research efforts to address common and region-specific challenges for regional transitional pathways to develop a more resilient, competitive, innovative Europe.

The identification of research themes in focus is based on the sources below.

- Official EU reports and documentations and analyses of research focus areas in demand.
- Stakeholder consultations, assessing the nine developed Smart Specialisation Strategies by all regions in the Alliance, presented in a report from Regional Transition Accelerator (RTA), enhancing regional and inter-regional collaboration, focusing on STARS EU university partners' research priorities and specialisations, and regional priority areas.

Hence, to identify research needs, alignments and gaps between regional needs and research priorities, a regional place-based Smart Specialisation Strategy (S3) for Regional Transition has been used to confirm synergies and complementarities among the STARS EU academic partners and regional stakeholders. It should be noted that the analysis, depending on the type of data available for different regions, cannot always be directly compared. For example, some partners identify a national level of cooperation as natural, while other partners cooperate almost exclusively at sub-regional levels. Even so, the analysis displays valuable insights regarding regional specialisation need and priorities, thus identifying needs for joint knowledge

development and innovation as well as additional accents in the regions. As a result of the cooperation, additional research topics may arise or change over time.

STARS EU Organisational Research Structure

STARS EU are organised in three main structures with research activities primarily within the Knowledge Creation & Challenge Lab. The Challenge Lab is working on promoting and developing collaborative research, addressing current global and European challenges like supporting the green, digital and social transition and promoting cooperation with industry and relevant stakeholders at large.

To be successful in its research activities, the Challenge Lab should collaborate with all other relevant structures within the STARS EU. Among the most important are:

The Curriculum Lab focuses on innovative, future-proof and challenge-based joint education activities, including naturally embedded mobility, innovative pedagogy and research-based teaching/learning settings that favour the development of relevant future competencies.

The Regional Transition Accelerator (RTA) enhances and promotes regional and interregional collaboration with all regional innovation ecosystem actors, established through Living Labs (Multistakeholder partnerships) including joint projects addressing market needs and access to R&D and knowledge-driven infrastructure.

Thematic Interest Groups - TIGs

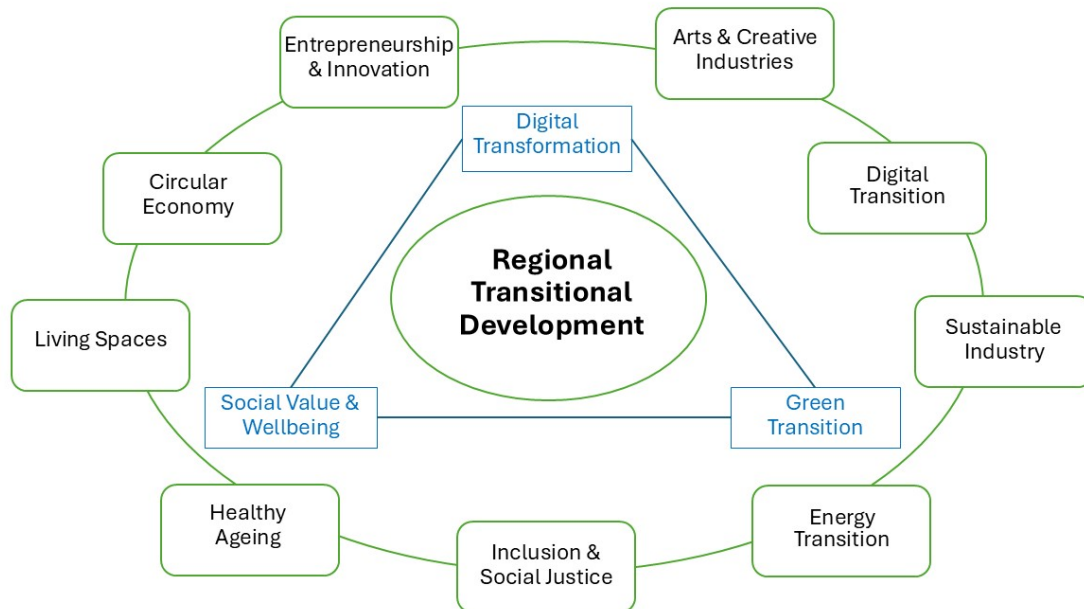
The Challenge Lab supports and develops research efforts through created format of Thematic Interest Groups (TIGs). TIG's are cross/multi-disciplinary research groups within the alliances created on research needs from regions and focusing on STARS EU Priority Areas. The partner universities strengths and competence are in this way matched with the development and focus of the TIGs, enhancing collaborative research support for innovative and competitive regional transitional growth.

Based on needs and competences, STARS EU research activities are at present organised in nine Thematic Interest Groups (TIGs). The number of TIGs can increase in number, and/or change research focus depending on needs and competences. Some of the current TIGs have a more specific research focus, while most of the TIGs are of a more cross-sectoral character.

To propose and establish a new Thematic Interest Group, the following conditions are required.

- At least three STARS EU member institutions must be included
- The identified research focus must be relevant for regional transitional development
- Must identify a gap in current thematic research areas
- Need to contain required existing and/or potential competences

The current TIG research focus areas consist of:



The research focus of each TIG illustrated above is not acted upon in isolation. On the contrary, seeking inter- and transdisciplinary solutions to complex challenges, the TIGs shall collaborate to jointly seek holistic applicable solutions.

Being open, flexible and diverse, the STARS EU current TIG themes can, depending on regional stakeholders' needs and priorities, through collaborative efforts be changed or increased with new relevant research areas. Current and future TIGs should be developed, based on the complementary strengths and priorities of the partner universities and focusing on regional stakeholders' needs. Hence, the TIGs provide platforms bringing researchers, students and regional stakeholders together to provide applicable research solutions to societal challenges.

Below is a short presentation of research interests and foci of the current nine TIGs:

Arts and Creative Industries

The Arts and Creative Industries TIG is committed to uphold creative societal values, aiming to build inclusive common spaces through the connection of institutions and communities. The main goal is to foster innovative and creative thinking in a holistic approach to support

democratic values through a variety of artistic languages within a dialogue of change. The TIG focuses on the following research themes:

- **GENERATE design+ art-based thinking** - Provide platforms for diverse artistic expressions that address structural themes and share pedagogical challenges within academic settings and across the STARS EU regions. The goal is to contribute to deeper intercultural connections to generate creative, design-driven, art-based thinking. Integrating interdisciplinary collaborative social solutions, along with emerging technologies, enhance creative expression and proactive collaboration around diversity, cultural perspectives and future practices.
- **Resilience innovation** - Create frameworks that drive social change within the creative industries, empowering both groups and individuals, building "resilient community" ties, fostering adaptability and creativity through cultural capital.
- **Unlock creativity** - Promote projects such as the ART[h]RIGHTS exhibition, initiatives for Local Markets, Inclusion and Creativity, and Mountain Landscape Art Projects, all aligned with the alliance's transdisciplinary actions.

Digital Transformation

As the world becomes increasingly interconnected and technology-driven, it influences many fields such as education, medicine, research, and energy. Technologies like artificial intelligence (AI), machine learning, big data, and the Internet of Things (IoT) are transforming how organizations operate, compete, and innovate. Digital transformation enhances collaborative research by enabling seamless communication among researchers from various institutions and geographic regions. The Digital Transformation TIG focuses on the following research themes:

- Development of joint projects aims to advance new technologies and solutions in various fields related to digital transformation, including education, production, and health and wellbeing.
- Enhancing communication through real-time tools and breaking down geographical barriers.
- Access to big data and analytics to facilitate informed decision-making and innovation.
- Digital literacy development and accessibility-by-design through adoption of digital innovations.

Entrepreneurship and Innovation

The Entrepreneurship and Innovation TIG is a collective of educators and researchers committed to advancing the understanding and teaching of entrepreneurship and innovation. The TIG brings together a diverse network united in the mission of creating sustainable futures through collaborative education and innovative research with the aim of generating a significant impact at the local and regional levels. The TIG research efforts focuses on the following themes:

- **Fostering collaboration:** Establishing a network that supports the exchange of knowledge, methodologies and research through the partnership. By working together, it is possible to unlock new knowledge and innovations to benefit academics, students, and the community at large.
- **Enhance research and education:** Develop relevant, high-quality entrepreneurial research programmes and initiatives to prepare students for the challenges of the future, while strengthening the knowledge base of academic staff.
- **Promote innovation:** Encourage the creation and dissemination of innovative educational solutions and practices that drive the growth of the entrepreneurship ecosystem within the alliance regions.

Energy Transition

This theme focuses on analyses aiming to reduce dependence on fossil fuels, increase the use of electricity in sectors such as transport and heating, enhancing energy efficiency to reduce consumption and waste, upgrading the electricity grid and developing technologies to store excess renewable energy for use during periods of low generation. This TIG promotes collaborative research with other research themes to develop joint projects among member universities, regional stakeholders and international collaborations, to innovate new technologies and solutions in renewable energies and storage. The research focuses on the following themes to address both global and regional challenges, ensuring that solutions are tailored to the specific needs and contexts of the regions.

- **Energy System Modelling** to optimize the integration of renewable energy sources into existing grids, analysing regional energy consumption patterns to tailor solutions that accomplish local needs.
- **Technology development** to innovate new solutions and to enhance grid infrastructure to support the increased use of renewable energy.
- **Digitalization, Smart Grids and Data Analytics**, using big data and AI to optimize energy consumption and predict energy needs.

Healthy Ageing

Health is a broad field, displaying challenges and opportunities, for individuals, families and society. The extent to which humans are able to participate in and contribute to their societies depends heavily on one factor - health. The Healthy Ageing Living TIG research focuses on discovering innovative solutions, optimising healthcare, discovering innovative solutions, and prevention during the whole lifespan. The themes include, but are not limited to:

- Ageing and Frailty
- Health and Digital Literacy
- Technology in Health and Social Care
- Health & Care System Transformation (incl. long-term care and interprofessional collaboration)
- Regional Transition in Prevention: Healthy lifestyle, Nutrition and Sport
- Living and Changing Environment & Healthcare

- Ethical considerations in Health Care (in collaboration with TIG Inclusion & Social Justice)

By fostering collaboration and multidisciplinary research expertise, this TIG address tomorrow's health and wellbeing challenges through impactful, evidence-based solutions enhancing the quality of life across generations.

Research efforts focus on critical areas such as early detection of chronic diseases and age-related conditions, reducing the burden on caregivers and healthcare systems while improving the quality of life. Smart technology and AI are leveraged to deliver personalised health recommendations and interventions, effectively bridging the gap between healthcare and technology.

Circular Economy

Circular economy is a model of production and consumption that involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible, reducing waste to a minimum. By designing different joint research initiatives, including researchers and practitioners, the Circular Economy TIG aims to contribute to a sustainable future. The Circular Economy TIG research focuses on:

- Bio-based economy: Reducing environmental impact by prioritizing sustainable bio-based raw materials. Represents a transition to a more sustainable and resilient economic model that balances growth, ecological health, resource conservation, and biodiversity
- Industrial symbiosis - Foster cross-sectoral partnerships in which by-products from one sector serve as valuable resources for another, increasing efficiency and reducing waste.
- Technical versus biological cycles - Address two fundamental components for resource management. By understanding and leveraging the strengths of both cycles, industries can work with reuse and regeneration of resources.
- Design for circularity – Focus on durability, repairability, minimising waste, decreasing reliance on virgin materials and promoting resource efficiency throughout the product lifecycle.
- Digital Innovation - Integrate digital technologies to enable effective tracking of resources to reduce waste reduction, efficient recycling, helping industries minimise environmental impact.

Living Spaces

This theme focuses on the built environment, now and in the future. Population growth, climate change, resource exploitation, polluted water or shrinking cities are examples of challenges threatening the sustainable development of cities and communities. A fundamental change is required in urban development, mobility and green-blue resources. The Living Spaces TIG encompasses a wide range of subjects from the intangible to the technical. Including researchers from different academic fields and disciplines, the research focuses on addressing the

sustainable transformation of the living environment. Collaborations with external stakeholders include companies, municipal authorities and municipalities. Areas of research interest include:

- The development of attractive urban centres
- The role of digitalisation in the community
- Climate-friendly construction and sustainable use of resources
- Mobility and its effects on urban development
- Coastal and flood protection
- Digitalisation processes for a more resource-efficient circular economy
- Urban design

Sustainable Industry

European industry faces major challenges affecting its future. To increase competitiveness between countries and companies outside Europe, the industry should focus on regional and national value chains to shorten transport and services linked to the manufacture of various products. The TIG aims to support industry and society with new and innovative technologies and skills by initiating new cooperations and research projects to meet the future challenges of European industry. The challenges described below will be addressed by developing joint research projects, in collaboration with industry, sharing knowledge and experience for new innovative solutions.

- Digitalization and productivity: Increasing productivity through digitalization, including essential technologies and data security. Small and medium-sized businesses must embrace the ongoing technological transformation and new solutions.
- Technological transformation: AI and other technologies have a rapidly increasing impact on industry. Adaptability and introduction of new technologies are necessary.
- Climate change and sustainability: Climate challenges, such as the greenhouse effect due to use of fossil fuels for electricity, production and transport, affect industry. Sustainable solutions for European industry are therefore important.
- Focus on value chains and services: Increased emphasis on regional and national value chains to shorten transport and services linked to products
- Demographics and gender equality: Challenges of diversity, inclusion, ageing workforce, unequal gender distribution and shortage of skilled labour are examples of issues that require innovative research solutions.

Inclusion and Social Justice

The Inclusion and Social Justice (ISJ) TIG is dedicated to fostering a society where all individuals, irrespective of their background, identity, or circumstances, can thrive. The research efforts focus on social equity, accessibility, and community engagement, addressing systemic inequalities to create lasting, positive change within the European Union and beyond.

The TIG contributes to a vision of a more inclusive, fair, and prosperous Europe. The TIG focuses on the following research themes:

- Tackle social and digital exclusion and economic disparities
- Empower political, social, and economic actors in addressing systemic structural barriers.
- Promoting equal access to legal aid, and inclusive education
- Minorities rights

The TIG aims at delivering innovative, flexible, diverse, and challenge-based research solutions for sustainable regional and European development.

By partnering with current and future thematic interest groups within the STARS EU network, ISJ will extend the outreach, integrating the principles of inclusion and social justice across diverse sectors.

Objectives of STARS EU Agenda for Research Solutions

Identification of Needs & Priorities

The STARS EU Agenda for Research Solutions is a strategic guiding document aiming to capitalize on the partners' regional strengths and specific socio-economic challenges to explore opportunities of innovation for regional transitional development.

The identification of needs and priorities is continuously jointly explored by the partner universities and external stakeholders. Combining partners' complementary strengths and fields of expertise provide an analysis of how regional strengths can, in a collaborative manner, address common and region-specific challenges. With a regional place-based oriented Smart Specialisation Strategy (S3), different research themes illuminate as especially important.

Key Research Objectives

The strengths and competitiveness of STARS EU partners provide a platform and direction to enhance research of excellence that successfully meet the demands and needs to achieve sustainable, innovative, competitive and resilient regions in Europe. At the same time, global trends should be considered to address challenges – priorities – possibilities, not only internally in the regions, but offering openings for the rest of the world.

For the development and successful implementation of all research efforts, certain aspects are of crucial strategic importance. All the aspects described below are, in various ways and degree, to be integrated into all research activities. Depending on the thematic focus of a particular research project, some aspects can be given greater attendance.

An Integrated Focus on Green - Digital – Social Transition

The EU highlights a need to focus on transitions towards a greener and more digital future. These transitions are also increasingly connected to social dynamics, exposing a need to consider the interrelated challenges posed by the social, green and digital transitions. The need to explore and focus on this triple transition is clearly illuminated as important for all regions included in the STARS EU.

Hence, the overall aim of regional transitional development should adhere to, and integrate aspects of social, green and digital transitions in all research efforts within STARS EU. This integrated triple focus on social, green and digital transitions can, for example, be considered through a Strategic Technologies for Europe (STEP) oriented approach.

A Smart Specialisation Place-Based Approach

In almost all sectors, regional ecosystems are part of European research and innovation networks. The STARS EU research partners should optimise their impact on regional transitions, based on the regional needs and priorities. Hence, starting from a place-based approach, collaborative research efforts need to be systematically structured to efficiently address STARS EU priority research themes and areas.

Through a place-based smart specialisation strategy, cross fertilization within and between current and future Thematic Interest Groups (TIGs) priorities can give genuine impact, from local and regional level and beyond. Jointly structured research efforts involving regional stakeholders, and combining and transferring regional strengths, can thereby address common and region-specific challenges.

A Collaborative, Innovative, Competitive, Flexible and Diverse Focus

Through collaboration, STARS EU research enhances its diverse regional strengths, as flexible partners promoting innovative, competitive applicable research solutions for sustainable European regional transitional development. Open minded, flexible and effective implementation of collaborative research efforts, will attract and mobilise the best talents from various fields of expertise, creating opportunities for researchers and institutions to collaborate and share knowledge. Being future oriented, it is important to also integrate early-stage researchers into all research activities.

A Cross-Disciplinary and Inter-Regional Focus

It is important that the partner universities collaborate to make efficient use of each other's expertise, enabling research teams to jointly tackle problems at a larger scale, with greater regional reach and greater impact. In line with a smart specialisation strategy, research collaborations shall promote an inter-regional approach where research teams seek collaboration that stretches within as well as between the STARS EU regions. By increasingly integrating cross-disciplinary and cross-sectoral perspectives into the research, such collaborations can tackle the complexity of regional challenges.

A Challenge-Based and Solution-Oriented Focus

Collaborative research efforts should have a clearly challenge-based and solution-oriented focus, seeking useful and applicable solutions to complex challenges facing the regions. Identification of research needs and priorities therefore needs to be a collaborative task, combining research expertise from different disciplines with relevant local and/or regional external stakeholders.

A challenge-based and solution-oriented focus enhances an inclusive co-creative environment which can generate synergies among and between researchers and stakeholders, creating more applicable competitive possibilities and solutions to identified problems.

A Co-Creative Integrative Transdisciplinary Approach

Collaborative research efforts shall promote an inclusive co-creative transdisciplinary research environment that integrate theoretical/academic and practical knowledge, skills and experiences. A transdisciplinary approach produces knowledge that goes beyond existing disciplines, and more importantly, integrates and value more practical knowledge and skills from non-academic stakeholders. A co-creative transdisciplinary focus thereby promotes mutual learning between science and society.

Co-creation and co-production of knowledge, skills and expertise can generate socially robust knowledge, enhancing new innovative solutions with potential to generate tangible societal impact and economic benefits for transitional regional development and beyond.

A Research – Education Connected Focus

Apart from seeking to solve challenges and promote regional development in different forms, collaborative research efforts in the STARS EU should always promote and integrate educational aspects into all research activities and research aspects into all education. From an educational perspective, collaborative research can be seen as including three main actors: the researchers/lecturers – the students – the stakeholders. A co-creative research process integrates and values theoretical and practical knowledge, skills and experiences as important. It is important that students, researchers and stakeholders feel included, engaged, valued, and empowered in all research collaborative activities.

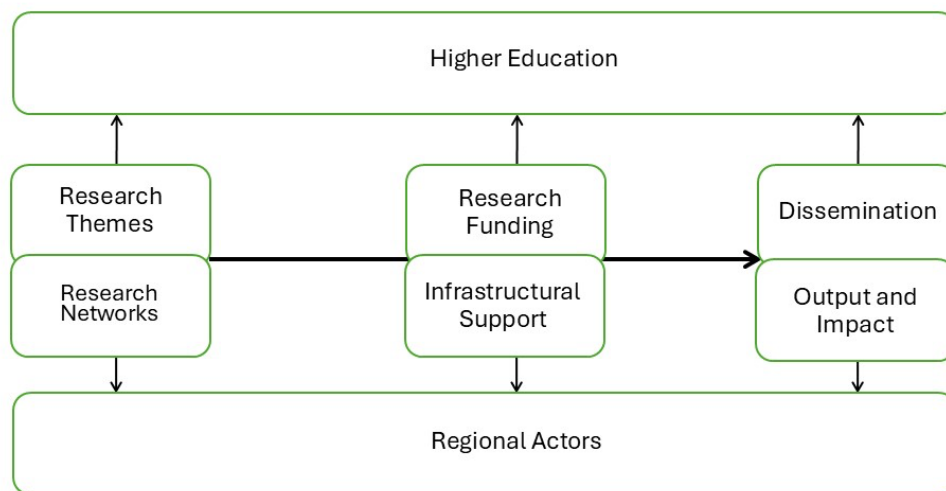
Connecting research and education can take place in various forms and with different foci. For example, there is a growing need to better prepare graduates with entrepreneurial innovative mindsets to address current and future complex and changing challenges. In formal higher education, research projects can bring research themes, approaches, methods and output into educational curricula.

Other important pedagogical activities could be to integrate students into research projects through internships. Such activities can, in different forms, include students from undergraduate to PhD level.

Furthermore, collaborative co-creative research projects also have the capacity to enhance and support lifelong learning skills. This is important from both an individual and societal perspective, enhancing new knowledge and learning skills for researchers, students and stakeholders.

Anticipated Outcomes

The implementation of the STARS EU co-creative collaborative research activities plays a key role in the development, promotion and dissemination of competitive innovative approaches, solutions and products for transitional regional development. A co-creative collaborative focus between academic actors and societal stakeholders is crucial to enhance strong competitive research environments addressing factual challenges and making genuine impact for regional transitional development.



STARS EU research efforts are solution-oriented, developed in collaboration between research expertise and regional stakeholders, forming cross-disciplinary research themes. Academic and non-academic actors collaborate in applying for research funds through various sources. Universities must jointly adhere to research needs and provide suitable support structures to promote efficient and competitive research output. Dissemination of research results shall have a positive impact for regional transitional development. Research activities shall be integrated into higher education to promote new forms for knowledge creation and learning, enhancing a sustainable future for graduates and regional stakeholders alike.

Even if the specified aims and goals of certain research activities are identified within and between the Thematic Interest Groups (TIGs), the overall anticipated outcomes of the multi-faceted STARS EU research and innovation efforts shall:

Research Themes and Networks

- Develop collaborative research & innovation projects including STARS EU partners and regional stakeholders enhancing innovative co-creation of new knowledge
- Seek innovative and sustainable solutions of interlinked green – digital - social transformation challenges in all research collaborations
- Develop an internationally competitive research consortium, including all STARS EU partner universities, aiming to develop collective research project proposals focusing on regional transitional development

Research Funding

- Actively seek funding for collaborative research project proposals through national, EU or international funding structures
- Explore collaborative research funding opportunities from public and private business and industry to enhance positive synergies and impact

Infrastructural Research Support

- Enhance accessible cross-institutional and cross-sectoral transdisciplinary flexible and diverse support structures for researchers, and regional stakeholders
- Develop attractive and sustainable research career support structures that enhance mobility, equality, inclusiveness and talent circulation between the STARS EU partners and beyond
- Strengthen resilient research infrastructures through sharing individual, institutional and inter-regional research collaboration investments and service support between the STARS EU partners and beyond

Connecting Research with Education and Society

- Include and integrate students at all levels into research projects through interactive methods to extend knowledge, skills and experience, strengthening the competence and competitiveness among students
- Include PhD students and early career researchers as formal participants in research applications and projects



- Increase inclusive entrepreneurial co-creative research networking environments, within and between R&I projects, providing innovative synergies empowering regional stakeholders to act as agents of change for regional and intra-regional development
- Develop strategic solution-oriented smart specialisation place-based strategies into all R&I projects to enhance regional and intra-regional collaborations

Research Output and Impact

- Enable open sharing and reuse of research knowledge and experience through best practices along Open Science principles to gain interoperability of research data and results
- Collaborate with stakeholders on R&I related human and technological needs of industries and society to accelerate the impact of industrial take-up and adaptation of R&I results

Supporting Structures

Within and between the work packages in the STARS EU, a number of interrelated activities will be conducted to support the research efforts within STARS EU. The following section provides a brief overview of some important support activities. More detailed information concerning each supporting structure/activity is documented on the STARS EU website.

Regional Transition Accelerator (RTA) & Living Labs

The Regional Transition Accelerator (RTA) plays a significant role in engaging regional stakeholders to be integrated into STARS EU's regional and inter-regional ecosystems, as important co-creative actors in education, research and innovation activities. Research and society will be brought together in so called Living Labs, created to act as collaborative innovation platforms where stakeholders from various sectors come together to identify needs and test innovative solutions in a real-world environment. These challenges will be addressed in close interaction with academia involved in the Thematic Interest Groups (TIGs) promoting the co-creative transfer of knowledge, skills and experience.

Knowledge & Technology Transfer Office (K&TTO)

STARS EU Knowledge & Technology Transfer Office (K&TTO) strives to become a substantial provider of R&D&I services in the EU, providing a web-based database catalogue with showcases of the services, quality and specialisation of research areas among STARS EU universities and Thematic Interest Groups. Through the K&TTO, stakeholders can search for coordinated solution-based applied research of interest, including:

- ✓ Technological development of new products, processes or services
- ✓ Partnership in R&D&I projects
- ✓ Intellectual property licenses
- ✓ Entrepreneurial support
- ✓ Training and qualification
- ✓ Scientific dissemination
- ✓ Knowledge exchange

STARS EU Intellectual Property Rights Guide

Research activities shall adhere to the STARS EU Intellectual Property Rights (IPR) Guide, which in combination with the STARS EU Technology Transfer Guide, aims to increase commercialisation of research, strengthen collaborative networks, manage intellectual property

(IP) effectively, and contribute to a more innovative, competitive, and prosperous Europe. The guide details ways to Protect IP and a Protocol for IP management for STARS EU members for joint research projects.

Internationalisation Strategy (STARS EU Goes Global)

STARS EU is committed to seek and develop new research and educational partnerships outside higher education institutions Europe, in line with the STARS EU long term strategy and the European Universities Initiative. Such partnerships also bring mutually relevant added value for STARS EU partners.

Sustainable Financing Plan

A funding plan is needed to align financial resources with strategic priorities, reduce dependency on short-term grants, and enable long-term planning. The Sustainable Funding Plan provides strategies for the alliances' research efforts to secure long-term competitive funding for joint interdisciplinary projects, and to reach the alliance's commitment to excellence, innovation, and sustainability.

Funding Expert Group

The Funding Expert Group has extensive experience in external funding application, aiming to support research staff and institutions among the STARS partners in all aspects of external funding. Each TIG is accompanied by one of the funding experts to continuously exchange ideas and strategies to seek relevant funding opportunities.

Gender Equality, Diversity and Inclusion Plan

The gender equality, diversity and inclusion plan provides a comprehensive guiding framework, consolidating an integrated approach to gender equality, ethical standards, and organizational inclusivity. STARS EU research efforts should prioritise diversity, ethical conduct, and gender equality in all activities to create a truly inclusive academic research community.

Green Impact Plan

The STARS EU Green Impact Plan guides research projects to find and use relevant methodologies to determine and assess different aspects of ecological footprints in processes and activities. Research projects can promote recommendations regarding targets, reductions and compensation.

Mobility Programme for Researchers

STARS EU Mobility Programme supports researchers from the partner universities to meet, connect and collaborate on research topics with like-minded professionals, including to jointly apply for and implement scientific projects. This can, for example, be done by organising continuous gatherings/conferences for researchers and stakeholders to keep research abreast of research efforts and possibilities.

STARS EU Research Mentoring Programme

The STARS EU Research Mentoring Programme is a tool dedicated to enhancing research academics' professional competence. The main goal of this jointly organised collaborative programme is to improve researchers' potential in grant applications, project management, research effectiveness and output, in and alignment with the needs and expectations of the social and business environment.

Communication & Dissemination

STARS EU research activities shall be communicated through a comprehensive communication and dissemination plan developed by the STARS EU. The communication activities shall raise awareness of STARS EU and share STARS EU's impact in terms of research results, outputs, achievements and innovations among a broad range of target groups.

Regional Dissemination Plans will target specific measures at regional stakeholder level. Each of the nine partner countries develops a dissemination plan for its respective region, detailing specific targeted measures to maximise dissemination impact.

All STARS EU research activities shall include data management plans, and a dedicated repository where all research data are available. The STARS EU common Open Data Repository (ODR) host the open data from all partners alliance's projects. Repositories such as the Open Access Infrastructure for Research in Europe (OpenAIRE), the Registry of Open Access Repositories (ROAR) and the Directory of Open Access Repositories (OpenDOAR), will ensure that publications become easily accessible.

Supporting Literature

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