EU4Dual

WP5 – LRI Strategy

EUROPEAN UNIVERSITIES

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Rector's Council Mandate

The Rectors Council (19th of June 2023, Malta) established the following strategic priorities:

- SP1: Launch Dual Studies Centre of Excellence (service portfolio and website, strategic partnerships, dual studies framework, first papers and conference) (S1 excellence/innovation in education)
- SP2: Announce Joint Dual Masters (S1 excellence/innovation in education)
- SP3: 2024 and 2026 Mobility Strategy – EU4Dual Mobility Program (EU4Dual mobility brochure) (S2 internationalization)
- SP4: Research Maps + 1 lighthouse project agreed (based on 2 proposals) (S3 excellence in research)
- Other supporting strategies:
- SP5: Launch MC on Future of Work
- SP6: Two Funding Applications submitted

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LRI definition

The Rectors Council (19th of June 2023, Malta) established the Lighthouse Research Initiatives (LRI) as long-term research areas that respond to three strategic objectives of the EU4DUAL Alliance:

- Promote joint cooperative research and knowledge transfer with external stakeholders.
- Align research strategies with regional development programs and S4 smart specialisation strategies.
- Accelerate research into areas linked to the Grand Challenges.

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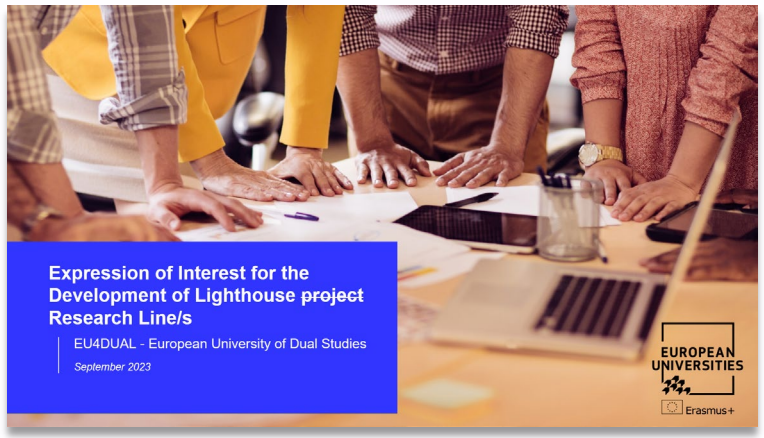
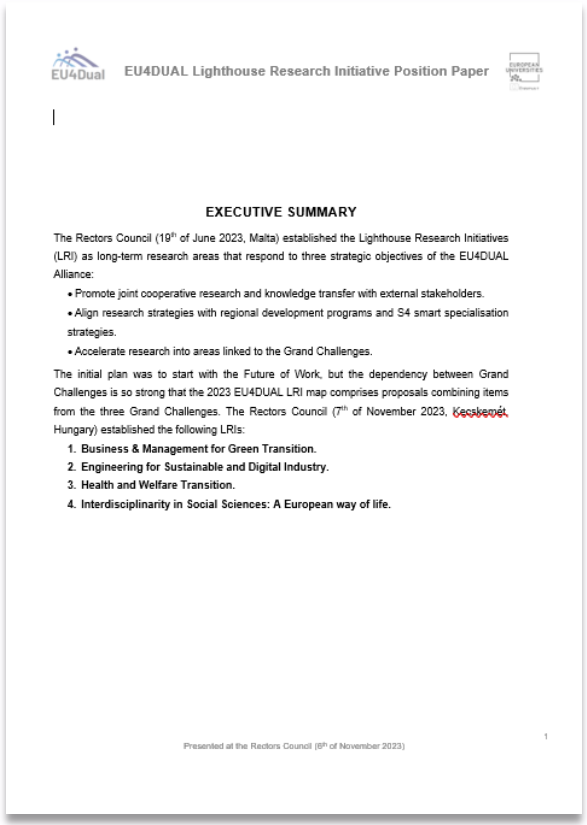
Methodology

Expression of interest definition



LRI Position Paper



EU4Dual EU4DUAL Lighthouse Research Initiative Position Paper

EXECUTIVE SUMMARY

The Rectors Council (19th of June 2023, Malta) established the Lighthouse Research Initiatives (LRI) as long-term research areas that respond to three strategic objectives of the EU4DUAL Alliance:

- Promote joint cooperative research and knowledge transfer with external stakeholders.
- Align research strategies with regional development programs and S4 smart specialisation strategies.
- Accelerate research into areas linked to the Grand Challenges.

The initial plan was to start with the Future of Work, but the dependency between Grand Challenges is so strong that the 2023 EU4DUAL LRI map comprises proposals combining items from the three Grand Challenges. The Rectors Council (7th of November 2023, Kecskemét, Hungary) established the following LRIs:

1. **Business & Management for Green Transition.**
2. **Engineering for Sustainable and Digital Industry.**
3. **Health and Welfare Transition.**
4. **Interdisciplinarity in Social Sciences: A European way of life.**

Presented at the Rectors Council (6th of November 2023)

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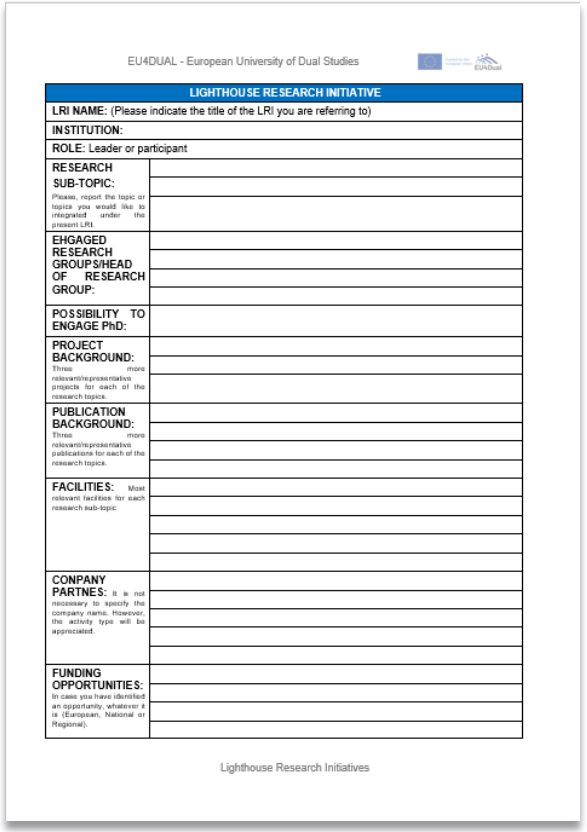
Institutional Positioning



EU4DUAL - European University of Dual Studies

LIGHTHOUSE RESEARCH INITIATIVE	
LRI NAME: (Please indicate the title of the LRI you are referring to)	
INSTITUTION:	
ROLE: Leader or participant	
RESEARCH SUB-TOPIC: Please, report the topic or topics you would like to integrated under the present LRI.	
ENGAGED RESEARCH GROUPS/HEAD OF RESEARCH GROUP:	
POSSIBILITY TO ENGAGE PhD:	
PROJECT BACKGROUND: Three more relevant/representative projects for each of the research topics.	
PUBLICATION BACKGROUND: Three more relevant/representative publications for each of the research topics.	
FACILITIES: Most relevant facilities for each research sub-topic	
CONPANY PARTNES: It is not necessary to specify the company name. However, the activity type will be appreciated.	
FUNDING OPPORTUNITIES: In case you have identified an opportunity, whatever it is (European, National or Regional).	

Lighthouse Research Initiatives

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Expression of Interest

EoI	Title	Partner
1	Green Business Development	FHJ
2	Green Economy and Working Life	SAVONIA
3	Circular Value Chains	MU
4	Traffic-, logistic optimization	JvNU
5	Sustainable greening	MCAST
6	Green Startup Hub	FHJ
7	R&D platform for Industry 5.0 technologies and human-systems integration	ESTIA
8	Industry 5.0. Human on the loop	MU
9	Tight human robot collaboration and safety	DHBW
10	Advanced and Automated/Robotized Manufacturing Processes	ESTIA
11	Cyber-Physical System technologies for enhancing industrial process management and operator well-being	ESTIA
12	Circular Eco-systems	ESTIA
13	Towards Circular Manufacturing Systems	ESTIA
14	Circularity in industrial processes.	MU
15	Technology entrepreneurship	JvNU
16	Business Data Analytics	MU
17	Deployment of Artificial Intelligence in Diabetes Treatment and Prevention	FHJ
18	Tailored Health: Personalized Gastronomy through Algorithms and Clusters	MU
19	Energy Transition: Energy Community Microgrids and Artificial Intelligence to Drive the Power Grid Flexibility	ESTIA
20	Energy Storage	JvNU
21	Water	SAVONIA
22	Food business	SAVONIA
23	Healthy food	JvNU
24	Culinary medicine	MU
25	Analysis of the effect of cooking on health: Glycotoxic compounds and prevention of chronic diseases	MU
26	Utilizing Virtual Reality for Cognitive and Motor Skill Enhancement in Older Adults: An Interprofessional Approach	FHJ
27	EU-STH – Digital Therapeutics Hubs	FHJ
28	POC medical device development	JvNU
29	People in the future of work	MU
30	Bridging the skills gap for the future of work	MCAST

EoI	Title	Partner
31	Island Harmony: Promoting Healthy and Sustainable Living on Croatian Islands	PAR
32	Sustainable Smart Wellbeing	SAVONIA
33	Revolutionizing Higher Education: The Dual Path to Success in the Future of Work	MU
34	GREENOVET methodology for developing the structures and capacities for development of applied research and skills for the green transition (Centers of Vocational Excellence)	FHJ
35	Health and Wellbeing in the elderly	MCAST
36	Immersive Co-Creation Hub. Holodeck meeting point – new forms of collaboration in virtual space	FHJ
37	Additive manufacturing	SAVONIA
38	AI in machine simulation	SAVONIA
39	Digital Humanities for Digital Skills in the Future of Work	KUT
40	Road to Energy Sovereignty	KUT
41	Emerging Trends and Innovations in Sustainable Event Management	KUT
42	Local Governments' Policies of Investments in Environmental Protection	KUT
43	Additive Manufacturing as a Service	KUT
44	Pro-ecological Manufacturing Processes	KUT
45	Design and Manufacture of Medical Implants, Prostheses and Orthoses	KUT

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LRI position Paper

The Rectors Council (7th of November 2023, Kecskemét, Hungary) selected the following LRIs:

1. Business & Management for Green Transition.
2. Engineering for Sustainable and Digital Industry.
3. Health and Welfare Transition.
4. Interdisciplinarity in Social Sciences: A European way of life.

Each LRI's description in the LRI Position Paper

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LRI 1: High Level Description

NAME: Business & Management for Green Transition

DESCRIPTION: Climate change and environmental degradation are an existential threat to the European Union and to the world. **To overcome these challenges, the European Green Deal is Europe's new growth strategy, which will transform the Union into a modern, resource-efficient and competitive economy.** The European Green Deal aims to make Europe climate neutral by 2050, boost the economy through green technology, create sustainable industry and transport, and cut pollution. Turning climate and environmental challenges into opportunities will make the transition just and inclusive for all. (Source: Green transition (europa.eu))

This Lighthouse Research Initiative supports reaching the European Green Deal aims by accelerating the shift towards environmentally responsible business practices and entrepreneurship such as developing innovative tools for business greening, planning climate transition in business and management, anticipation and support of future-skills, elaborating circular solutions for industrial value chains based on extended producer responsibility, optimization of flows and hubs, supporting sustainable mobility and others.

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LRI 2: High Level Description

NAME: Engineering for Sustainable and Digital Industry

DESCRIPTION: European industry is a key driver in the economic and societal transitions that we are currently undergoing. In order to remain the engine of prosperity, industry must lead the digital and green transitions. This approach provides a vison of industry that aims beyond efficiency and productivity as the sole goals and reinforces the role and the contribution of industry to society. It places the wellbeing of the worker at the center of the production process and uses new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet. It complements the existing "Industry 4.0" approach by specifically putting research and innovation at the service of the transition to a sustainable, human-centric and resilient European industry. (Source: https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/industry-50_en)

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LRI 3: High Level Description

NAME: Health and Welfare Transition

DESCRIPTION: For many reasons (demographic changes, technological progress, fiscal constraints, public health emergencies etc.) the European health and care systems are expected to be subject to severe stress. There is a need to accelerate the transition towards more efficient, sustainable, resilient, innovative and accessible health and care systems in Europe. (source: https://cordis.europa.eu/programme/id/HORIZON_HORIZON-HLTH-2022-CARE-10-01)

The lighthouse initiative "Health and Welfare Transition" fills in knowledge gaps, produces evidence and develops guidance and tools in priority areas for the transformation of health and care systems, such as water safety, hydration, healthy food and food processing, preserving cognitive health, holistic platforms for health and education, medical device development, for all people in Europe with special focus on the elderly. With its contributions this lighthouse initiative is Improving the capability of health and care actors to take up innovative solutions.

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LRI 4: High Level Description

NAME: Interdisciplinarity in Social Sciences: A European way of life

DESCRIPTION: This research initiative might be best described as interdisciplinary insights under the umbrella of social sciences. The idea follows the European Strategy for Universities (2022), which emphasizes interdisciplinarity as a teaching, research and overall academic lighthouse of the European way of life.

The vision of this research initiative encompasses a multifaceted approach to societal progress, incorporating key pillars of healthcare, a socially just transition, a knowledgeable workforce, and skills development. Recognizing the vital role of an interdisciplinary approach highlights the integration of various fields to foster comprehensive advancements. Acknowledging the imperative of a knowledgeable workforce, the vision addresses the global skills gap. It champions strategies like upskilling, reskilling, dual education, and industry-driven curricula. This ensures that emerging technologies align harmoniously with the capabilities of a skilled workforce, underscoring the importance of motivation from both students and employers.

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LRI 4: High Level Description

NAME: Interdisciplinarity in Social Sciences: A European way of life

DESCRIPTION:

Ultimately, this European lighthouse vision integrates critical elements - healthcare, socially just transitions, a knowledgeable workforce, skills development, dual higher education, and vocational green innovation - under the unifying principle of interdisciplinarity. It envisions a future where these components synergize to propel Europe towards a more inclusive, sustainable, and advanced society.

Source: https://education.ec.europa.eu/sites/default/files/2022-01/communication-european-strategy-for-universities-graphic-version.pdf

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LRI Institutional Positioning

Lighthouse Research Initiative	DHWB Germany	ESTIA France	Joanneum Austria	Koszalin Poland	MCAST Malta	Mondragon				NJE (JvNU) Hungary	PAR Croatia	Savonia Finland
						BCC	Enpresagintza	HUEZI	MGEP			
Business & Management for Green Transition	x	x	x	x	x		x		x	x		x
Engineering for Sustainable and Digital Industry	x	x	x	x			x		x	x		x
Health and Welfare Transition	x	x	x	x	x	x			x	x		x
Interdisciplinarity in Social Sciences: A European way of life	x		x	x	x		x	x	x		x	x

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LRI Working Groups

The Rectors Council (7th of November 2023, Kecskemét, Hungary) established the following LRIs:

1. Business & Management for Green Transition - SAVONIA
2. Engineering for Sustainable and Digital Industry - ESTIA
3. Health and Welfare Transition - FHJ
4. Interdisciplinarity in Social Sciences: A European way of life - KUT

LRI definition

The objective is to set a plan for each LRI covering at least the following points:

- Partners involved
- Resources
    - Researchers
    - Facilities
- Activity plan
- Main topics and subtopics
- Possible funding sources
- Potential companies that could be involved
- ...

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https://eu4dual.education/

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