



호라이즌 유럽 CHIASMA 컨소시엄 참여를 통한 다자간 국제협력 사례 소개



LinkedIn



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Hanyang University
Yoon Idea Lab Co., Ltd.



CNGC : cngc.hanyang.ac.kr

HYU : www.hanyang.ac.kr

YIL : www.yoonidealab.com

CHIASMA : chiasma-project.eu

클러스터4 CHIASMA 프로젝트

Vol.2

CHIASMA Consortium(Accessible Innovative Methods for the Safety & Sustainability Assessment of Chemicals & Materials)

윤태현 교수/대표이사
한양대학교 자연과학대학 화학과 / (주)윤아이디어랩

CHIASMA

프로젝트 명	CHIASMA
공고번호	HORIZON-CL4-2023-RESILIENCE-01-21
기간	2024년 1월 1일 ~ 2027년 12월 31일
프로젝트 총 예산	6,845,417.25유로(EU 자금: 6,845,417.25유로)
코디네이터	룩셈부르크 과학기술원 (LIST, LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY)
참가기관(Participants)	10개국 14개 기관
파트너(Partners)	3개국 5개 기관
CORDIS 링크	https://cordis.europa.eu/project/id/101137613

프로젝트 웹사이트 웹사이트: <https://chiasma-project.eu/>
 소셜미디어: <https://lu.linkedin.com/company/chiasma-project>



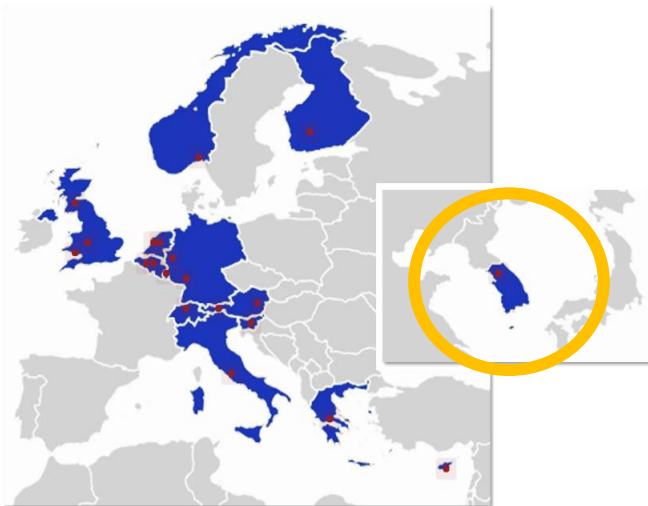
CHIASMA Consortium : Introduction

CHIASMA's Vision

The CHIASMA Project will devise and demonstrate a comprehensive set of **New Approach Methodologies (NAMs)** and integrate them in a user friendly, reliable and robust framework to perform **human and environmental safety evaluation** in a regulatory context.

The CHIASMA Consortium

The CHIASMA Project is planned and conducted by a highly interdisciplinary, international consortium of partner institutions.



- Member/Associate member countries
→ 14 institutions from 10 countries
- 3rd countries
→ 5 institutions from 3 countries

Among them, **Hanyang University** in Korea is included in **WP2** as a third-country partner and is performing the role of **producing new data based on Experimental NAMs**.



CHIASMA Project
Coordinator

Tommaso
Serchi
Ph.D.

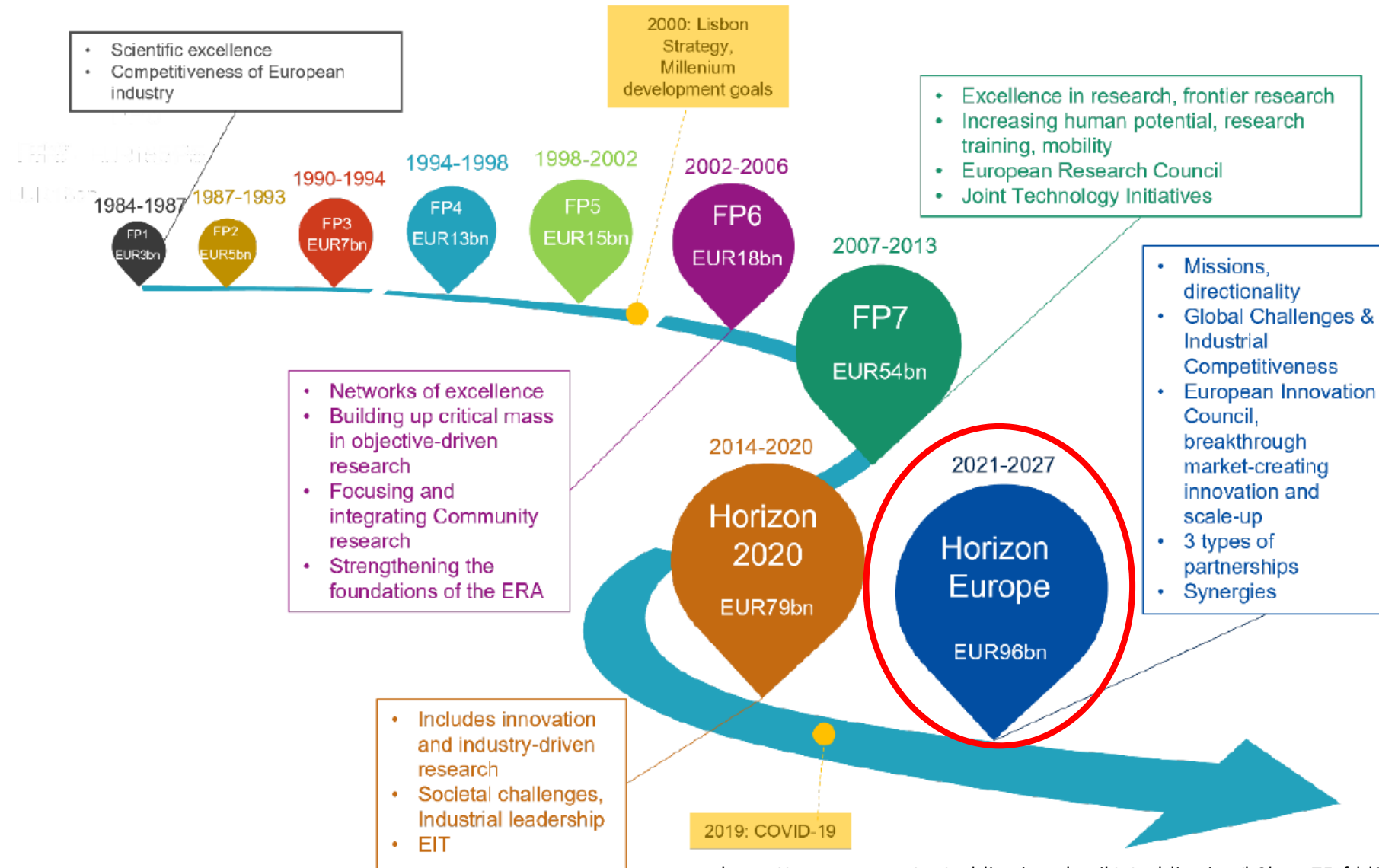
LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY



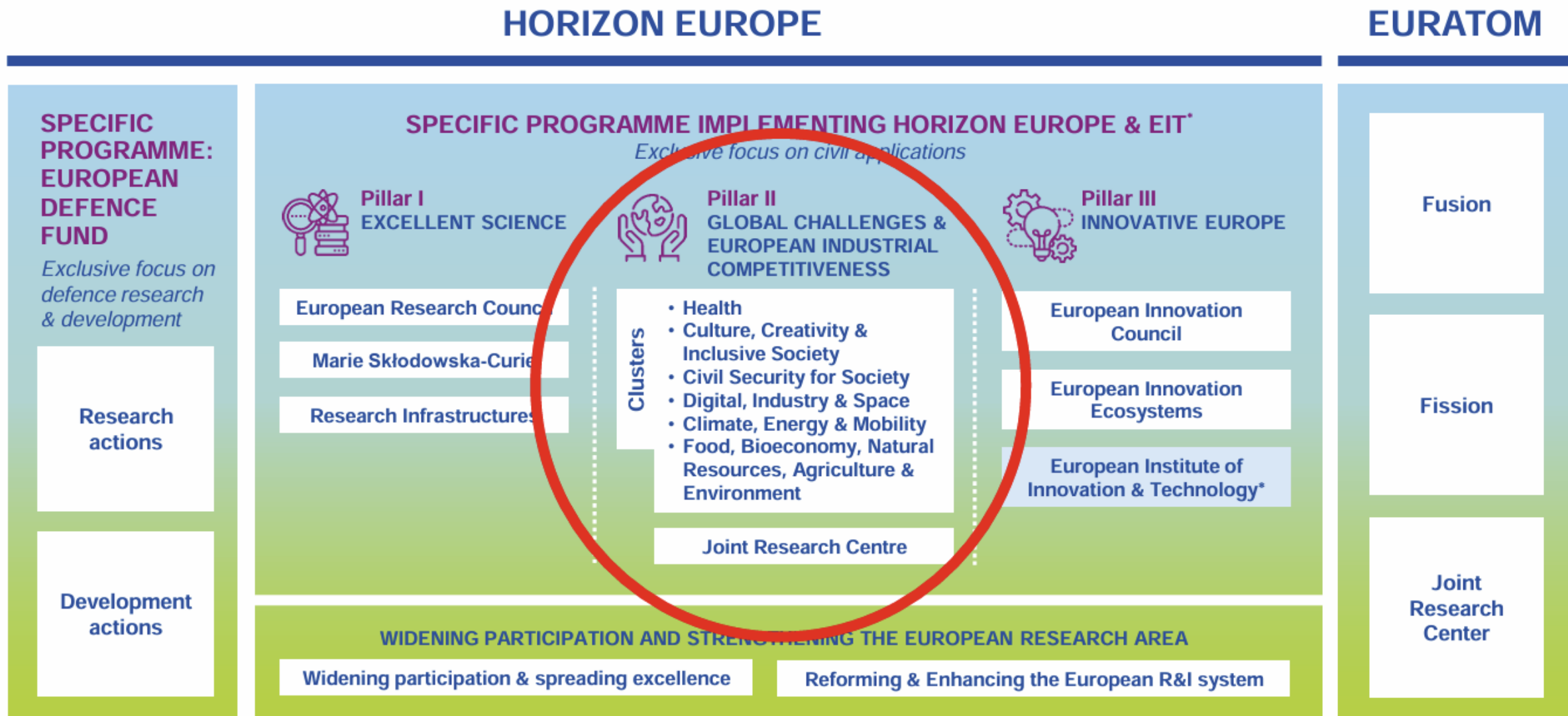
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Horizon Europe Programme : Overview



Horizon Europe Programme : Overview

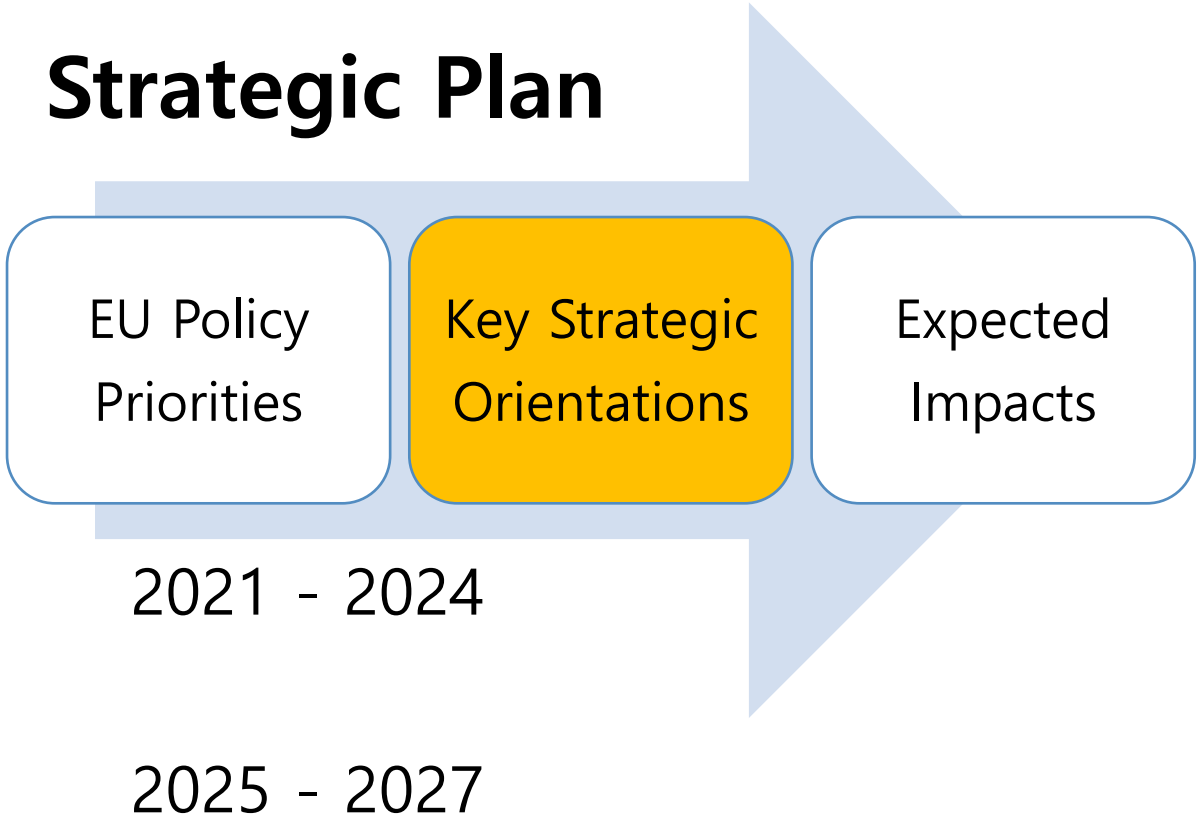


Horizon Europe Strategic Plan / Work Programme

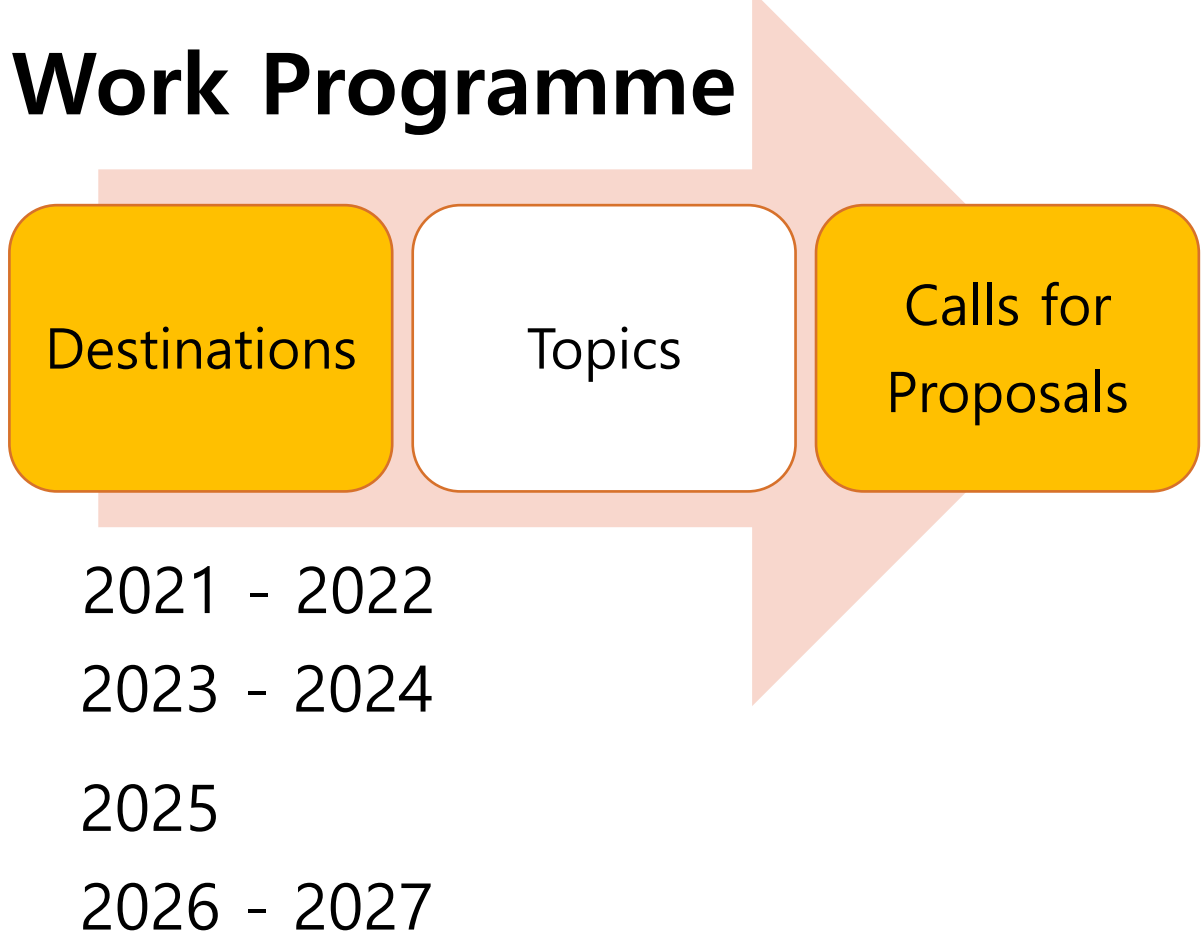


Horizon Europe Strategic Plan / Work Programme

Strategic Plan



Work Programme



Horizon Europe Strategic Plan 2021-2024

➤ 4 Key strategic orientations for Research & Innovation

A // Digital Transformation

Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations



B // Environmental Protection

Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment



C // Sustainable Development

Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems



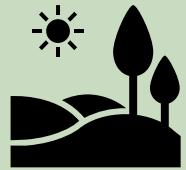
D // Resilience & Inclusiveness

Creating a more resilient, inclusive and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions

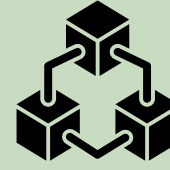


Horizon Europe Work Programme 2023-2024

➤ 6 Destinations of cluster 4



Climate neutral, Circular and **Digitised** Production



Increased Autonomy in Key Strategic Value Chains
for **Resilient Industry**



World-leading Data and Computing Technology



Digital & Emerging Technology
for Competitiveness and **Fit for the Green Deal**



Open Strategic Autonomy in Developing,
Deploying and Using **Global Space**-Based
Infrastructures, Services, Applications and Data



A **Human-centred** and Ethical Development
of **Digital** and Industrial Technologies

Horizon Europe Work Programme 2023-2025

➤ Destination 2 → Resilient Value Chains 2023

➤ Safe and Sustainable by Design (SSbD) Chemicals and Materials

Proposal call	Title	Budget	Type of Action	TRL
HORIZON-CL4-2023-RESILIENCE-01-21	Innovative methods for safety and sustainability assessments of chemicals and materials	6.00 ~ 8.00 M€ (Total : 29.00 M€) → 4 projects	Research and Innovation Actions (RIA)	Start: TRL 3 End : TRL 6
HORIZON-CL4-2023-RESILIENCE-01-22	Integrated approach for impact assessment of safe and sustainable chemicals and materials	3.00 ~ 4.00 M€ (Total : 15.00 M€) → 4 projects	Research and Innovation Actions (RIA)	End : TRL 2-5
HORIZON-CL4-2023-RESILIENCE-01-23	Computational models for the development of safe and sustainable by design chemicals and materials	6.00 ~ 7.00 M€ (Total : 29.00 M€) → 4 projects	Research and Innovation Actions (RIA)	End : TRL 3-6

Horizon Europe Work Programme 2023-2025

➤ Destination 2 → Resilient Value Chains 2023

➤ Safe and Sustainable by Design (SSbD) Chemicals and Materials

HORIZON-CL4-2023-RESILIENCE-01-21
Innovative methods for safety and sustainability assessments of chemicals and materials (RIA)

- **6.00 ~ 8.00 M€** (Total : 29.00 M€)
- TRL 3(Start) ~ TRL 6(End)



48M, **6.8 M€**



CheMatSustain



SSbD4Chem

HORIZON-CL4-2023-RESILIENCE-01-22
Integrated approach for impact assessment of safe and sustainable chemicals and materials (RIA)

- **3.00 ~ 4.00 M€** (Total : 15.00 M€)
- TRL 2 - 5 (End)



48M, **4.1 M€**



ANALYST



HORIZON-CL4-2023-RESILIENCE-01-23
Computational models for the development of **safe and sustainable by design** chemicals and materials (RIA)

- **6.00 ~ 7.00 M€** (Total : 29.00 M€)
- TRL 3 - 6(End)



48M, **6.2 M€**

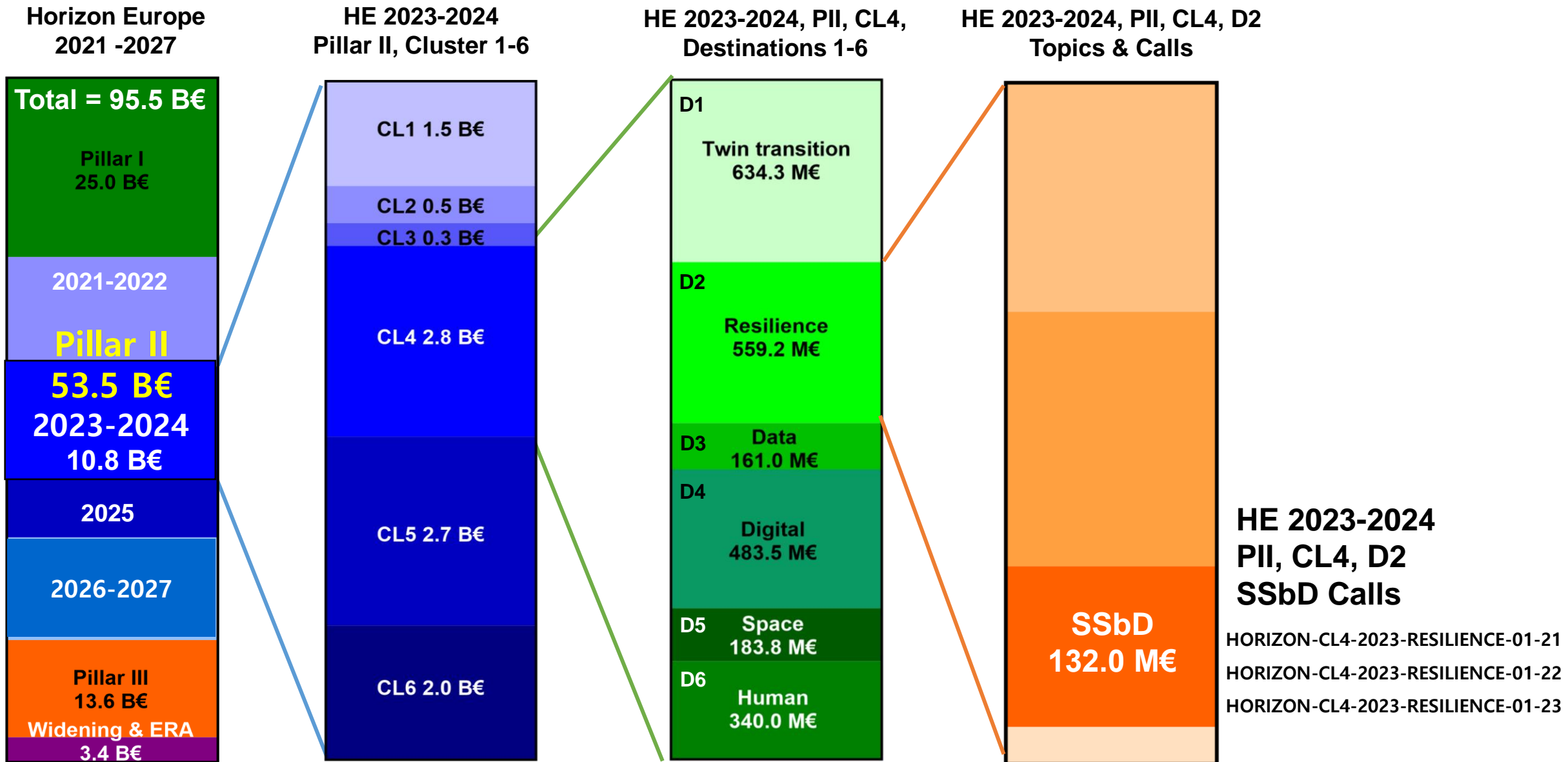


SITOLUB

M2DESCO

AI-TW
AI-TRANSPWOOD

Horizon Europe Work Programme 2023-2024



CHIASMA Consortium's Preparation



Since 2021.09
HYU & LIST were
participants of the
CompSafeNano
MSCA Consortium



HYU Team Visits LIST To
Discusses Joint Research

The CHIASMA Consortium


The CHIASMA Project is planned and conducted by a highly interdisciplinary, international consortium of partner institutions.



CHIASMA Consortium's Evaluation & Selection

➤ Criterion



Proposal Evaluation Form		
	EUROPEAN COMMISSION Horizon Europe (HORIZON)	Evaluation Summary Report - Research and innovation actions

Call: HORIZON-CL4-2023-RESILIENCE-01
 Type of action: HORIZON-RIA
 Proposal number: 101137613
 Proposal acronym: CHIASMA
 Duration (months): 48
 Proposal title: Accessible Innovative Methods for the Safety & Sustainability Assessment of Chemicals & Materials
 Activity: HORIZON-CL4-2023-RESILIENCE-01-21

Evaluation Summary Report for CHIASMA consortium

Criterion 1 - Excellence
 : Score: **4.50** (Threshold: 3 / 5.00)

Criterion 2 - Impact
 : Score: **4.00** (Threshold: 3 / 5.00)

Criterion 3 - Quality and efficiency of the implementation
 : Score: **4.00** (Threshold: 3 / 5.00)

Total score: 12.50 (Threshold: 10)

CHIASMA Consortium's Evaluation & Selection

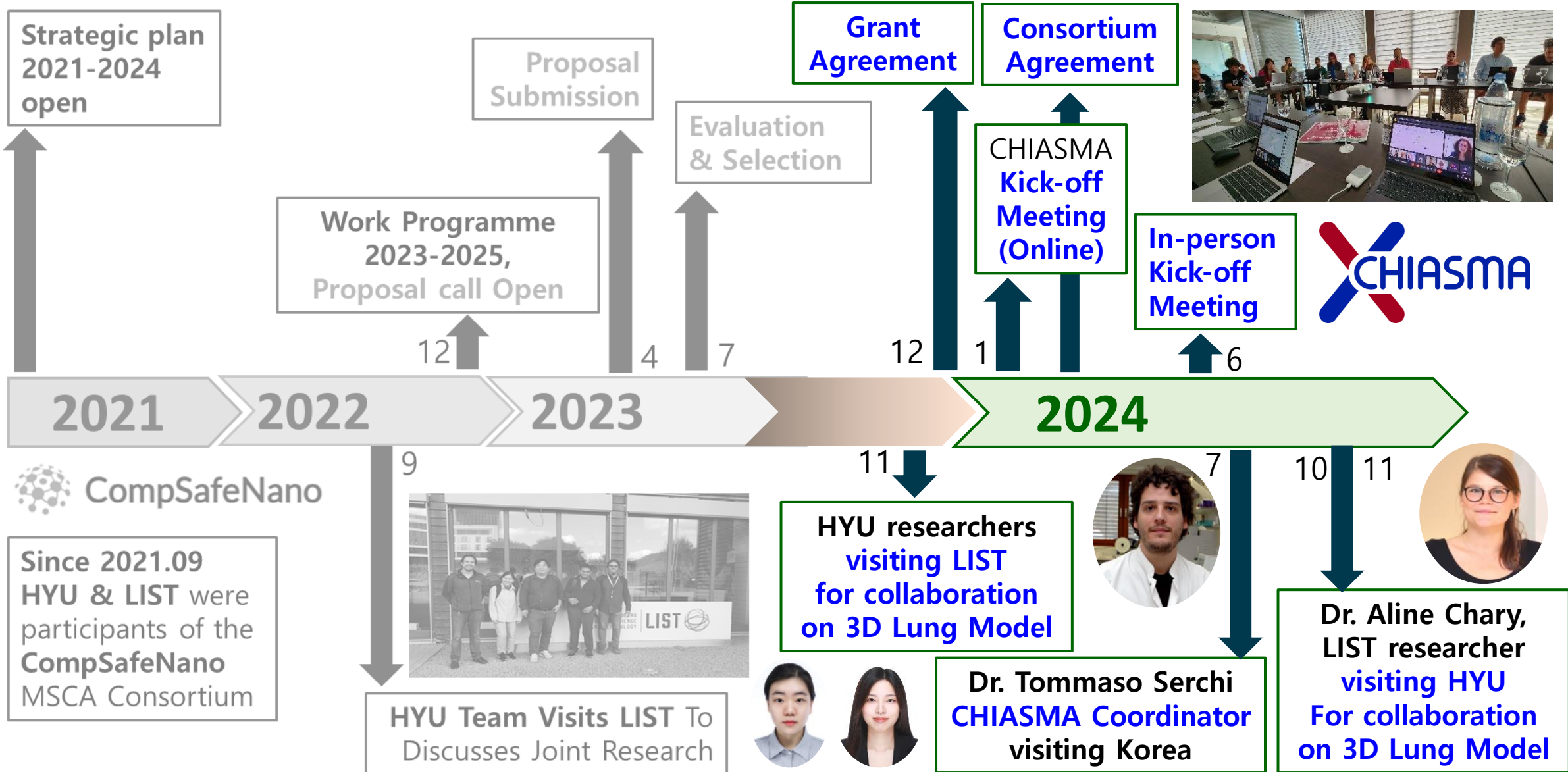
➤ Horizon Europe Strategic Plan 2025-2027 Analysis

Programme part	Eligible proposals	High-quality proposals (above threshold)	Retained proposals	Above-threshold rate (percentage of eligible proposals)	Success rate of proposals (percentage of eligible proposals)	EU contribution requested in retained proposals (million EUR)	Additional funding needed to fund all high-quality proposals (million EUR)
Global challenges and European industrial competitiveness	9,089	6,016	1,946	66.2	21.4	13.345	22,906
Digital, industry and space	2,376	1,947	564	71.2	20.6	3,606	7,857

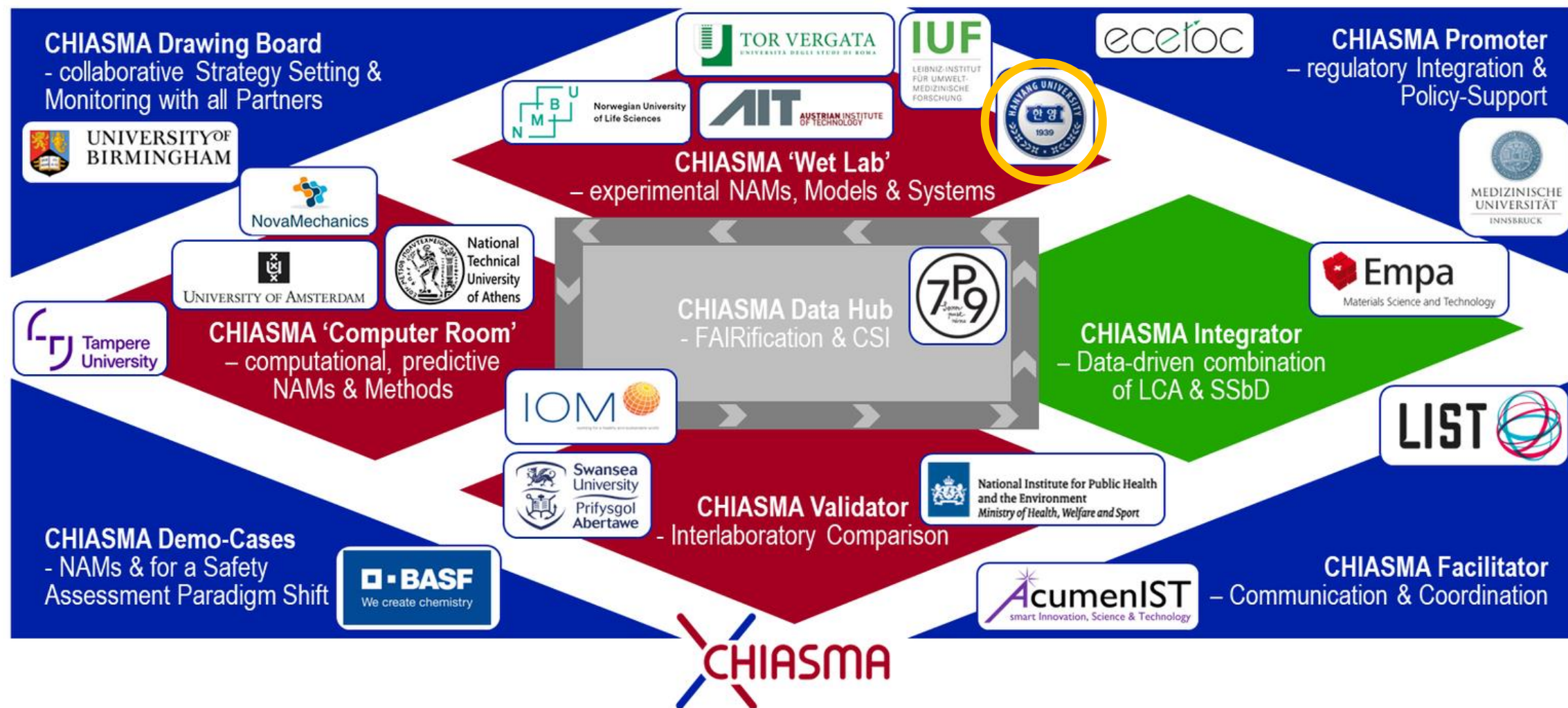
Pillar II

Pillar II Cluster 4

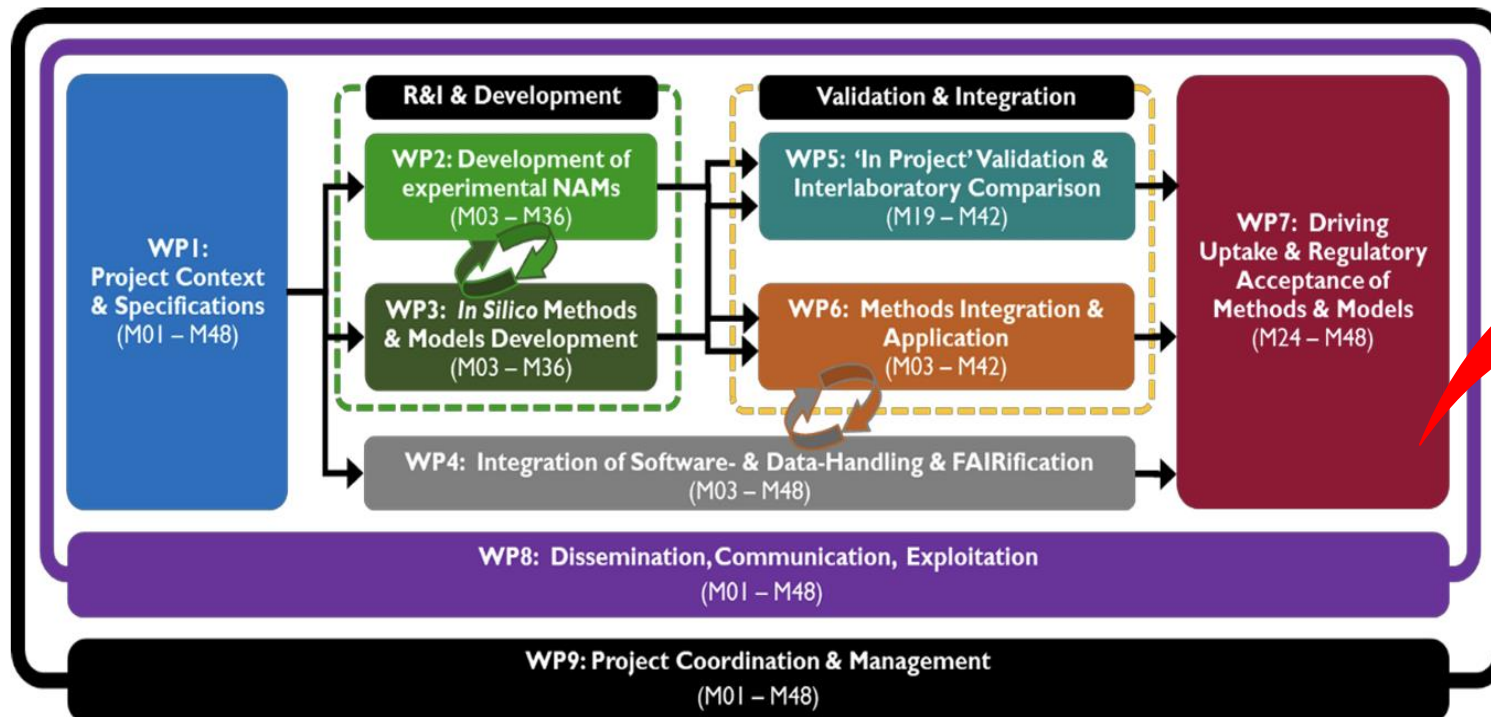
CHIASMA Consortium's Implementation



CHIASMA Consortium's Implementation : Partners



CHIASMA Consortium's Implementation : Objectives



The CHIASMA's Overarching Objective is to devise and demonstrate a comprehensive set of **New Approach Methodologies (NAMs)** and **integrate** them in a user friendly, reliable and robust framework to perform human and environmental safety evaluation in a regulatory context.

Enhancing chemical safety and sustainability

CHIASMA aims to provide accessible data to support widespread adoption of **SSbD** principles.

CHIASMA Consortium's Implementation : R&I Approach

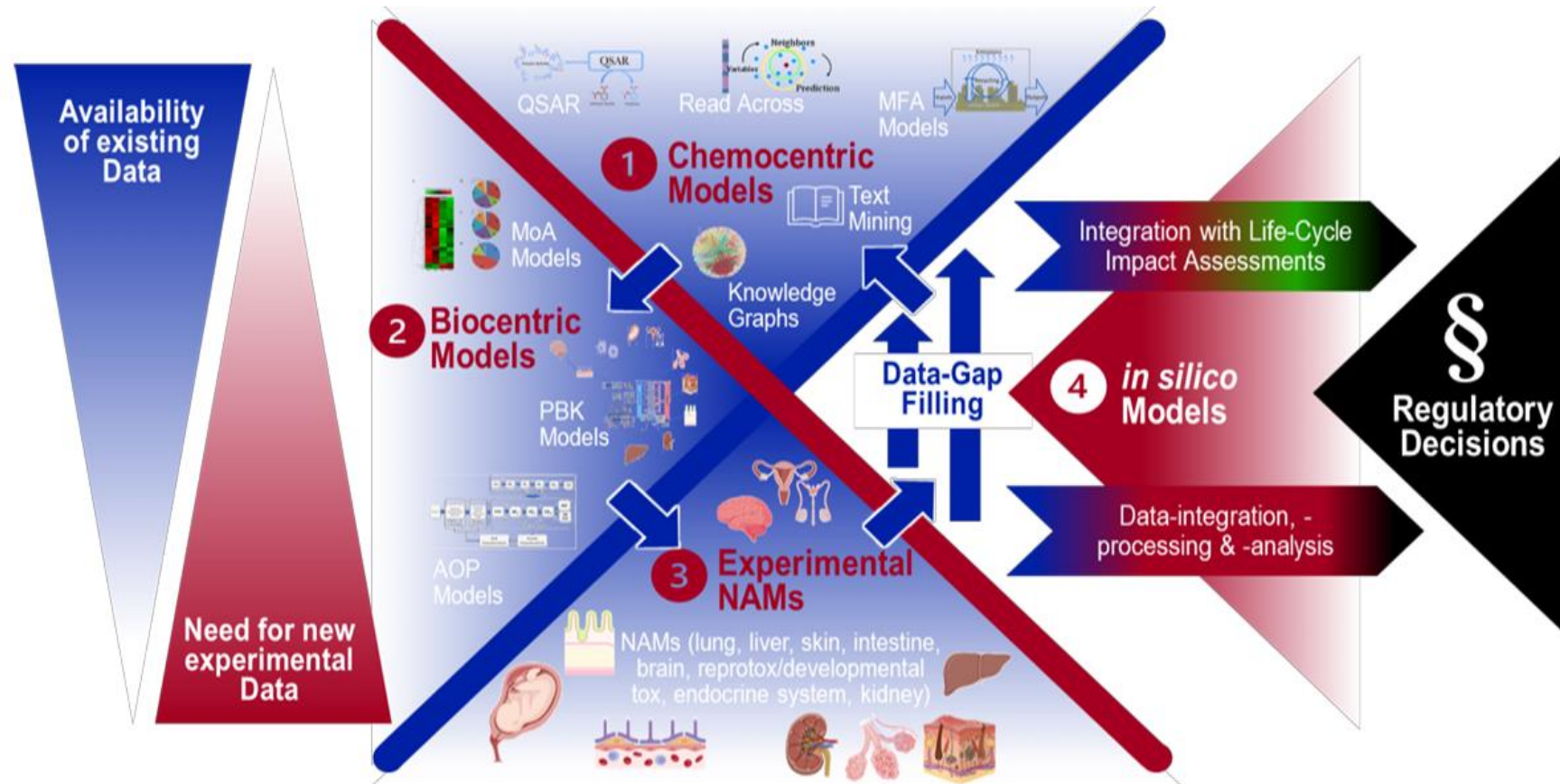
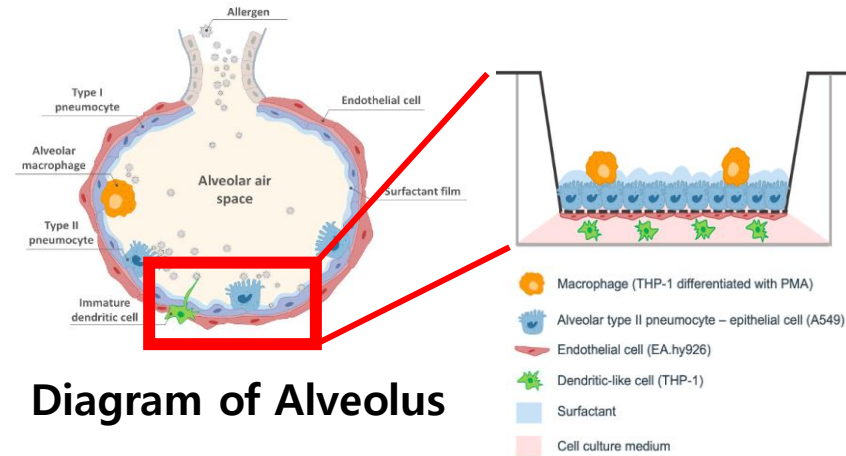
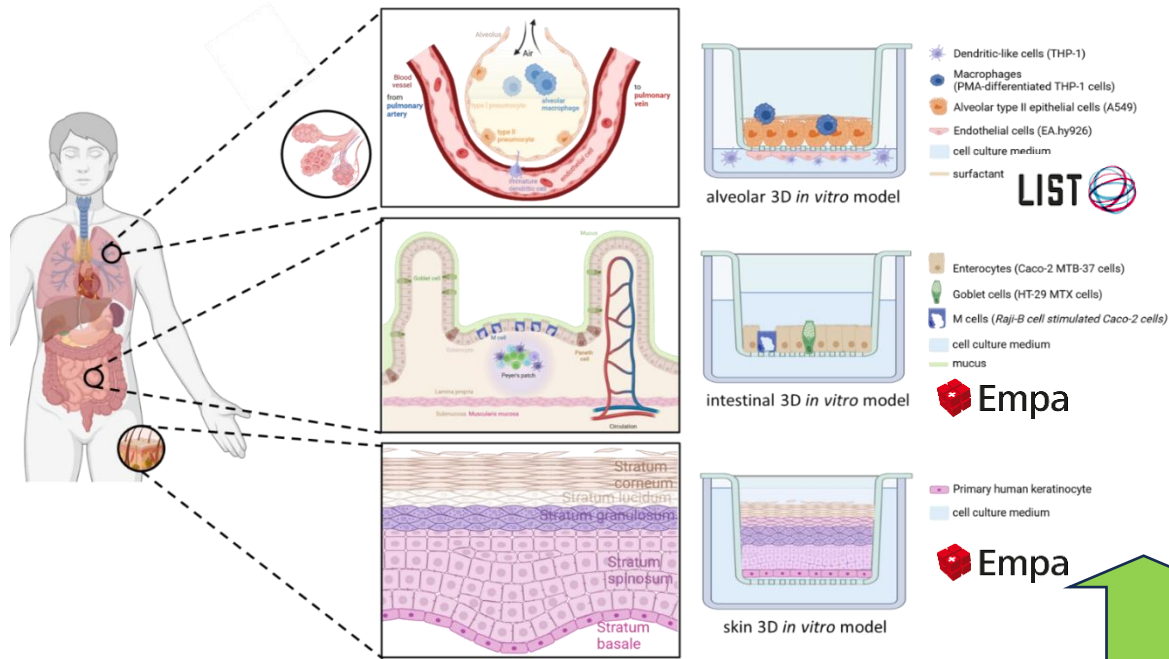


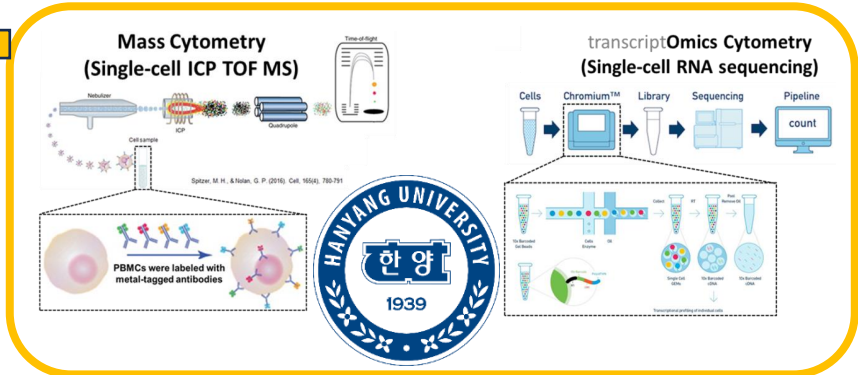
Illustration of the CHIASMA R&I approach to testing and assessment of materials using an iterative approach based on the integration of **(1) chemocentric**, **(2) biocentric** and **(3) new experimental models** into a conceptual framework for data-integration and -processing.

CHIASMA Consortium's Implementation : HYU

The utility of organoids and 3D organ model based biomimetics



Single-cell based proteomics/transcriptomics analysis

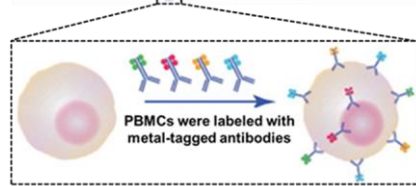
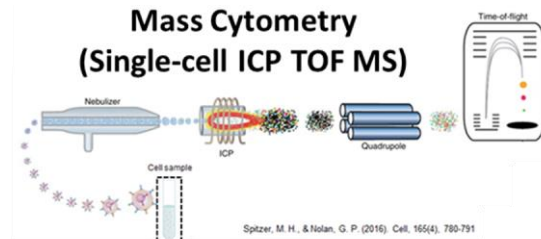
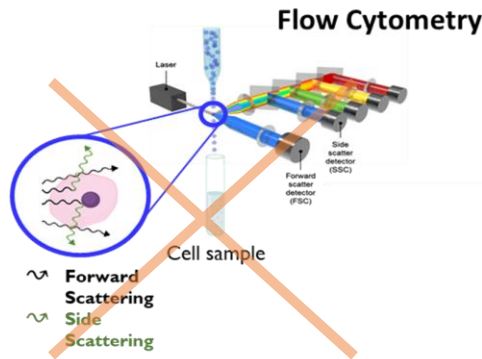


Chemicals may be exposed to in real life

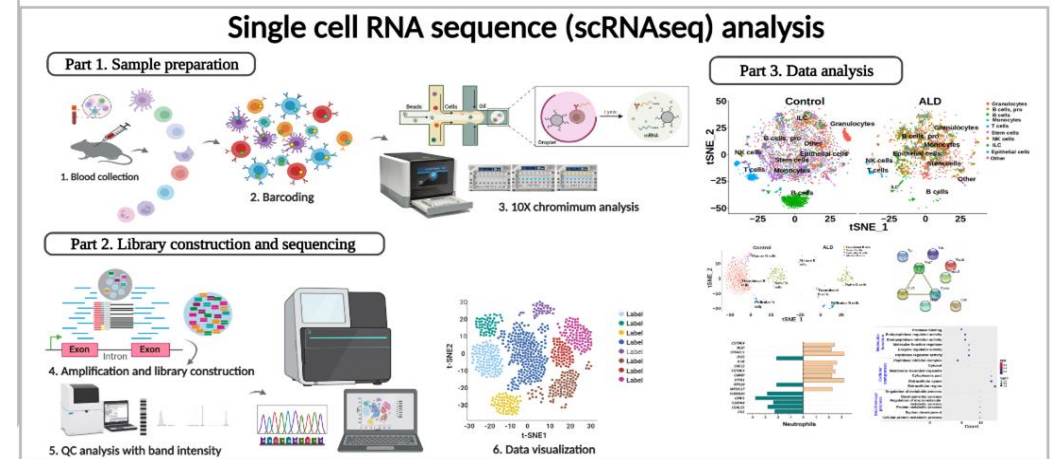
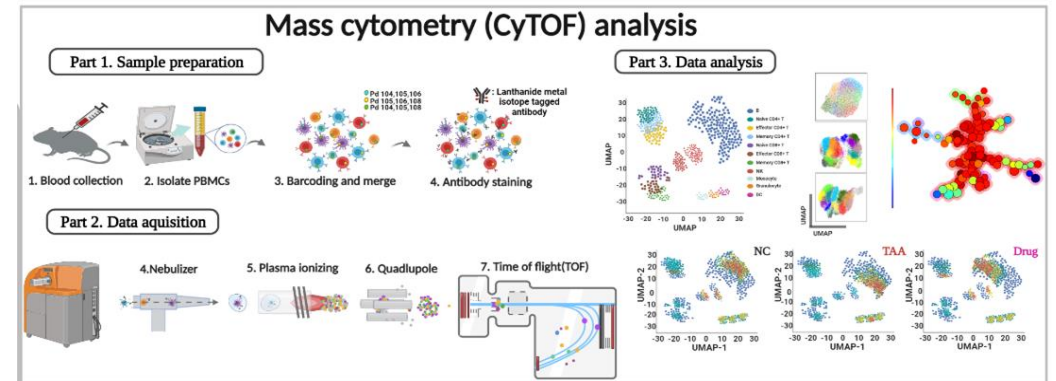
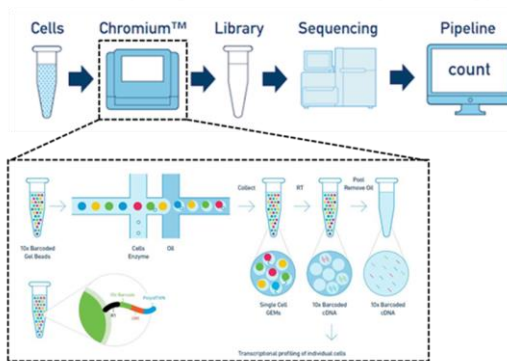
- **Nano-pesticides** (Nano-Si/Nano-ZnO/Nano-CuO/ Nano-Ag/Nano-Fe₂O₃)
- **2D Materials for Energy Applications**
- **Nano-sized chemicals** : silver nano, gold nano, etc.

CHIASMA Consortium's Implementation : HYU

Establish a Work Pipeline to produce and analyze single-cell proteomic (Mass cytometry) and transcriptomic (scRNAseq) data

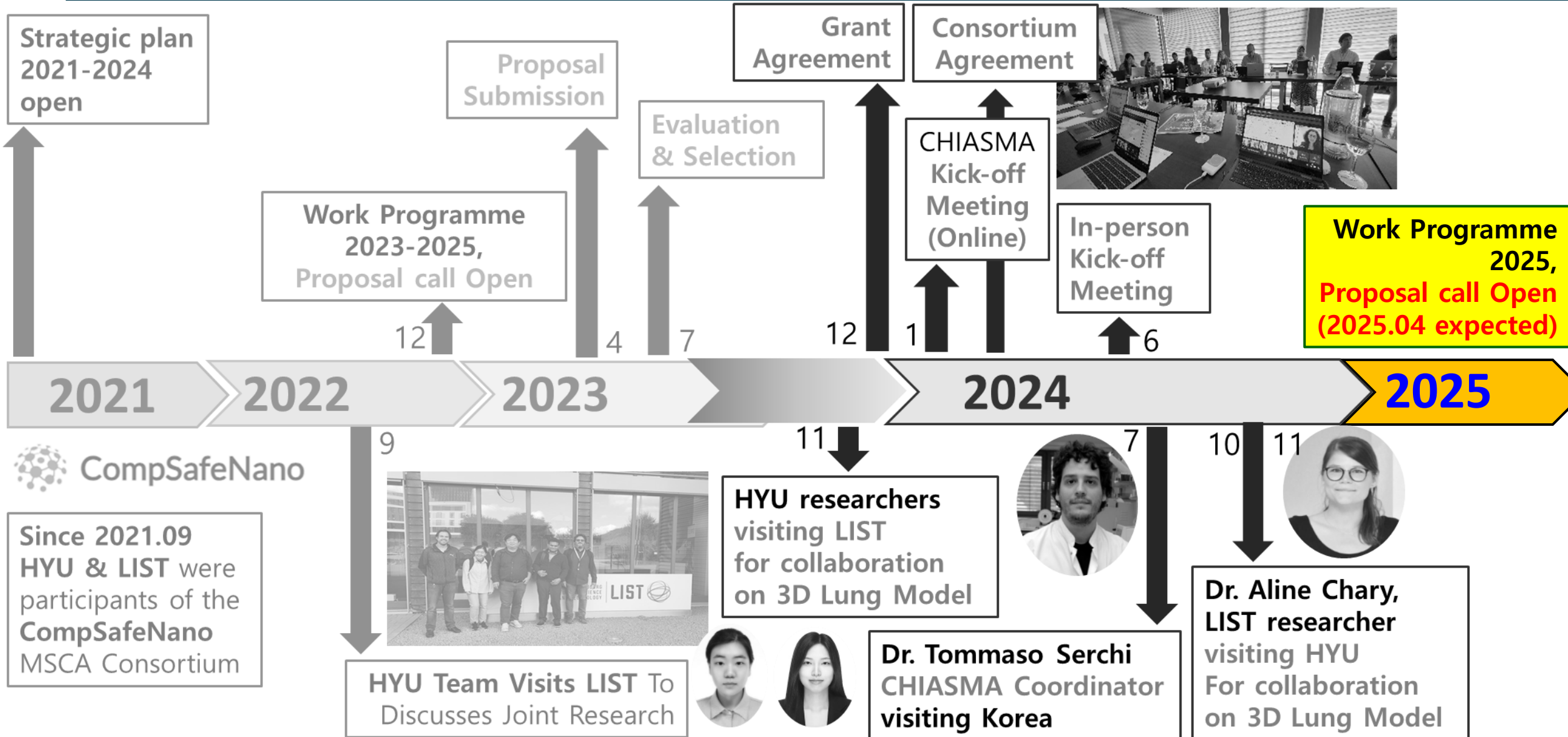


transcriptOmics Cytometry (Single-cell RNA sequencing)



→ Complementary use of single-cell transcriptome data and proteome data

Follow-up of CHIASMA Consortium



Horizon Europe Strategic Plan 2025-2027

HORIZON EUROPE

Strategic Plan
2021 - 2024

Strategic
Plan
Analysis

Strategic Plan
2025 - 2027

Work Programme
2021 - 2022

Work Programme
2023 - 2024

Work Programme

PROJECT

PROJECT

PROJECT

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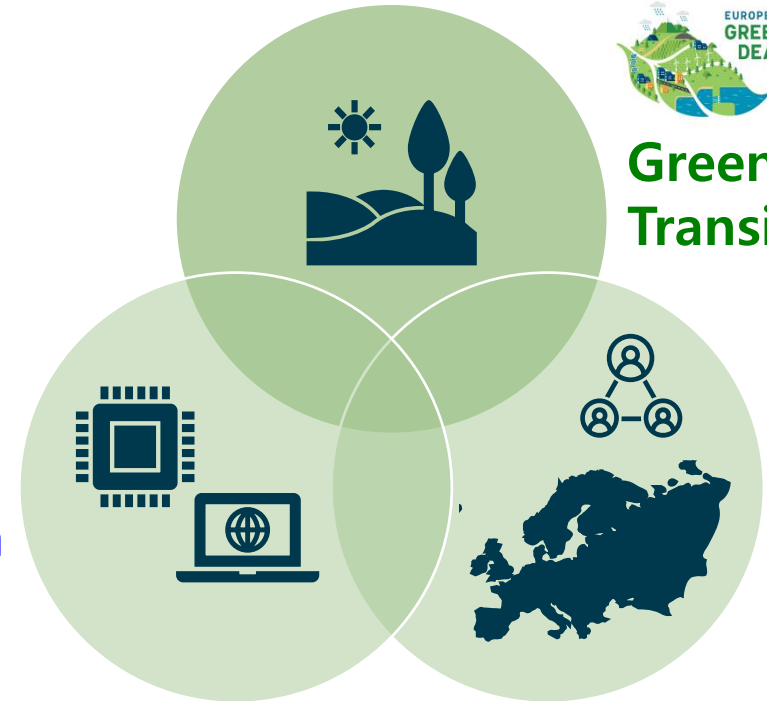
PROJECT

➤ 3 key strategic orientations

Digital
Transition



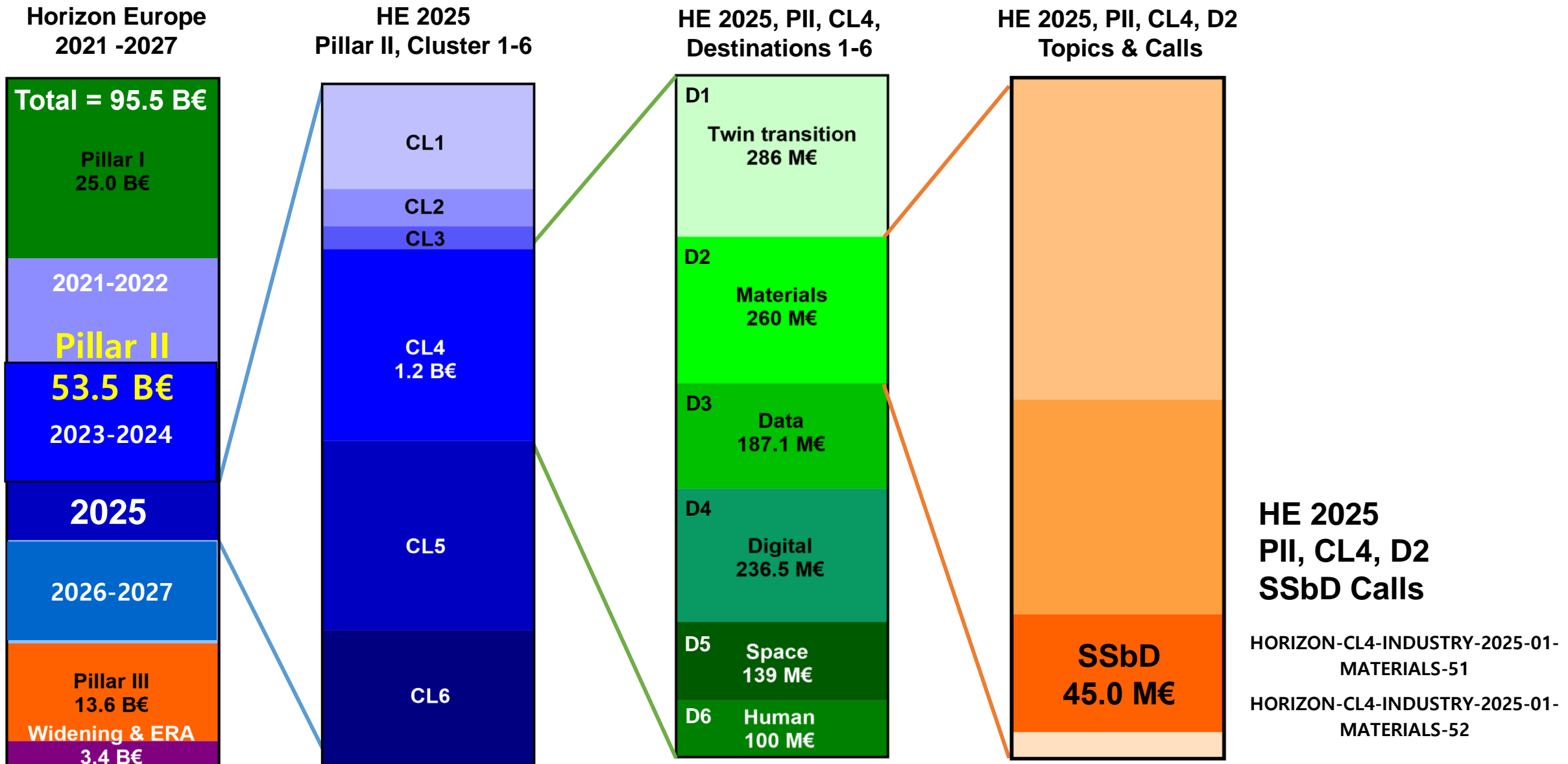
Green
Transition



A more resilient,
competitive, inclusive &
Democratic Europe



Horizon Europe Work Programme 2025(draft)



Horizon Europe Participation

As a partner or coordinator ?

As a partner

Define your expertise

Promote yourself

Join a consortium

Define your activity

Contribute to proposal

As a coordinator

Define your idea

Find funding opportunity

Find partners

Write the proposal

Submit

Horizon Europe Training & Consulting



정책연구-2023-00

EU 호라이즌 유럽(Horizon Europe)과 국가연구개발사업 관련 규정·절차 비교분석 연구

A Comparative Study on the Regulations and Procedure of EU Horizon Europe with Korean National R&D Projects

(주)윤아이디어랩
윤 태 현
2023. 11. 14.

← 1st report & EU-Kor comparison guidebook QR code



국가연구개발혁신법과 EU 호라이즌 유럽 규정 비교분석 가이드북

호라이즌 유럽 : EU 연구혁신프로그램(2021-2027) For a Green, Healthy, Digital and Inclusive Europe



정책연구-2023-43

National Research Foundation of Korea

EU 호라이즌 유럽(Horizon Europe) 준회원국 가입 관련 연구자 및 연구기관 참여 활성화를 위한 지원방안 연구

Strategic Research to Enhance Participations of Researchers and Research Institutions in the EU Horizon Europe Program in Light of South Korea's Joining as an Associate Member Country

(주)윤아이디어랩
윤 태 현
2024. 7. 25.

2nd report → QR code



- Horizon Europe Seminar for beginner
- Training for researcher
- Training for administrator
- Partner search
- Proposal writing
- Project management

Thanks for your attention !!!

Any Questions & Comments ?