UNIVERSEH

European Space University for Earth and Humanity

20th of May, 2021

General Presentation for Stakeholders

Emmanuel Zenou

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01 | Background and Context

An ambitious project…

Conclusions of the 2017 Social Summit in Gothenburg

Education and Culture

*Education and culture are key to building **inclusive** and **cohesive societies**, and to sustaining our **competitiveness**. In Gothenburg we expressed a willingness to do more in these areas, in which the EU plays an important supplementing and supporting role. As a result, the European Council calls on Member States, the Council and the Commission, in line with their respective competences, to take work forward with a view to:*

(…)

*« **Strengthening strategic partnerships** across the EU between higher education institutions and encouraging the emergence by 2024 of some twenty 'European Universities', consisting in **bottom-up networks of universities** across the EU which will enable students to obtain a degree by **combining studies in several EU countries** and **contribute to the international competitiveness of European universities** »*

Our ambitious project…

Main concept

Creation of a **comprehensive** European University

focusing on the **Space sector**

and considering **social, societal** and **environmental challenges**.

European Space University for Earth and Humanity

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Space sector: a field of the future

But already very present today...

- **Space** sector: a field of the **Future**, with a very long **cultural** and **scientific** history
- A **multicultural sharing**: all civilisations are concerned
- Very present **today**: communication, navigation, Earth monitoring… At a world scale
- Many **discoveries** are a **direct result** of space technology in all domains: ITs, materials, medicine, textile, food & nutrition, water & air purification, sport… The space sector has many **other sectors** behind it
- The space sector is an **application field** for many academic disciplines
- Rapidly **changing** industry, with many **new actors**
- A highly **dynamic sector** for research, innovation & entrepreneurship
- A source of **new jobs** and **new skills** in all disciplines
- Considerable **economic**, **(geo)political** and **(geo)strategic** issues
- …
- A sector that continues to make young and old **dream**

Adressing the Space sector

A 4-segment approach

Vision & Objectives

An open and comprehensive university

- To built the **world first comprehensive university** on the **space sector**
- To develop **multi & interdisciplinary** courses & programmes
- To prepare students and professional to **future jobs** and **future market needs**
- To prepare future citizens with a **comprehensive approach** of today's and tomorrow's **challenges**
- To promote **European Values**, **inclusive education, multilingualism** and **mobility** for **students** and **staff**
- To offer **innovative approaches** for Education & Research
- To support **innovation** and **entrepreneurship** among **students** and **staff**
- To strengthen UNIVERSEH partners as **European leaders** of the Space sector
- To strengthen **European Union** as a global **Leader** in the Space sector
- To **break** the –supposed or not- barriers between academics and other societal actors
- To **contribute** to **raising awareness** of the space sector among the general public

02 | The consortium

A pan-European alliance…

5 partners

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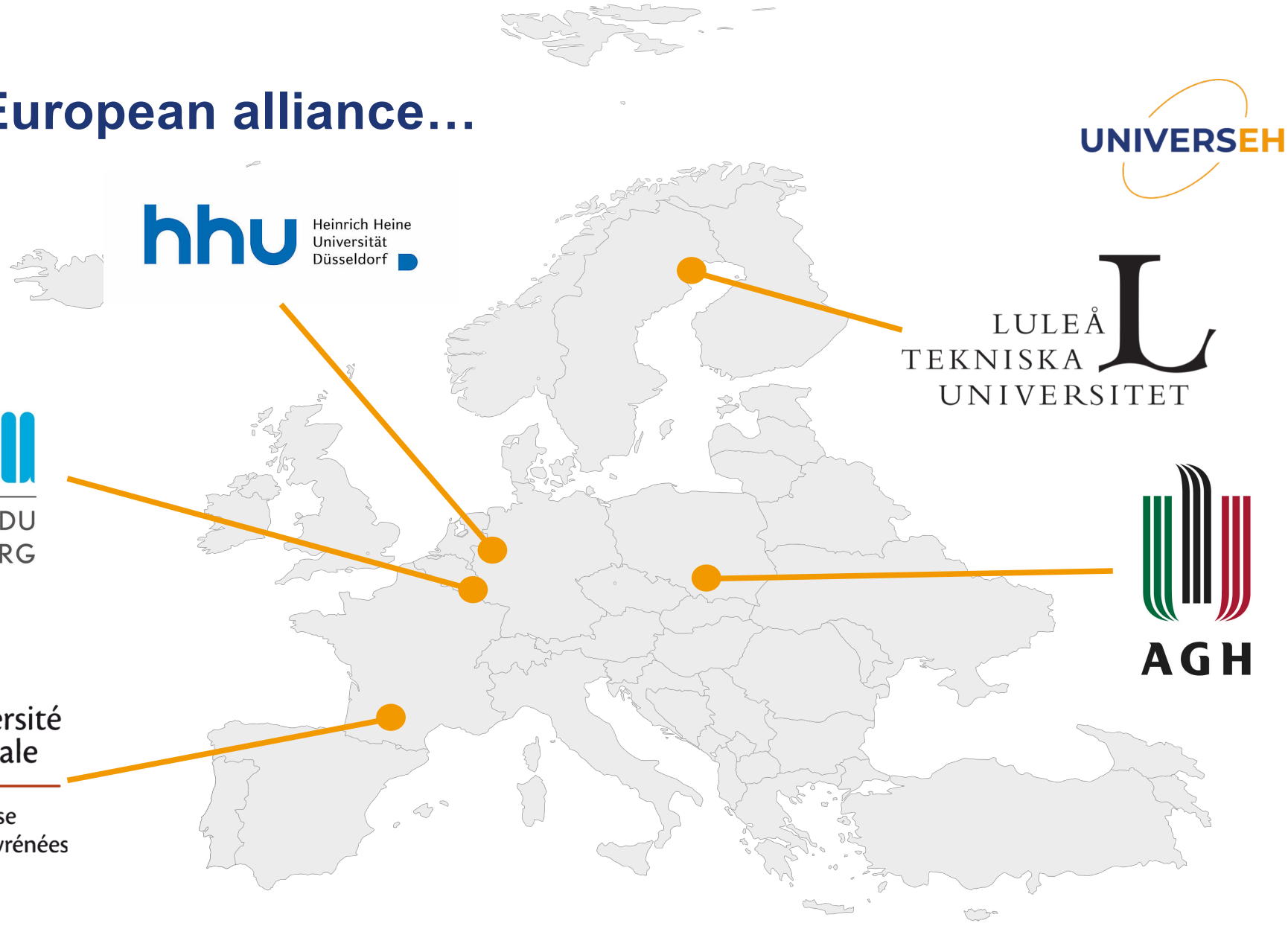

A pan-European alliance…

Université Fédérale de Toulouse Midi-Pyrénées

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23 HEI
1 Univ. Hospital
7 Research Institutions

143 laboratories

+9000 Teaching
& Research staff

100,000 students

City #1 in France for Student Life!

Université Fédérale
Toulouse Midi-Pyrénées

UNIVERSITÉ TOULOUSE Jean Jaurès

UNIVERSITÉ TOULOUSE III PAUL SABATIER

INP TOULOUSE

isae Institut Supérieur de l'Aéronautique et de l'Espace SUPAERO

tbs Business School

A pan-European alliance…

Université du Luxembourg

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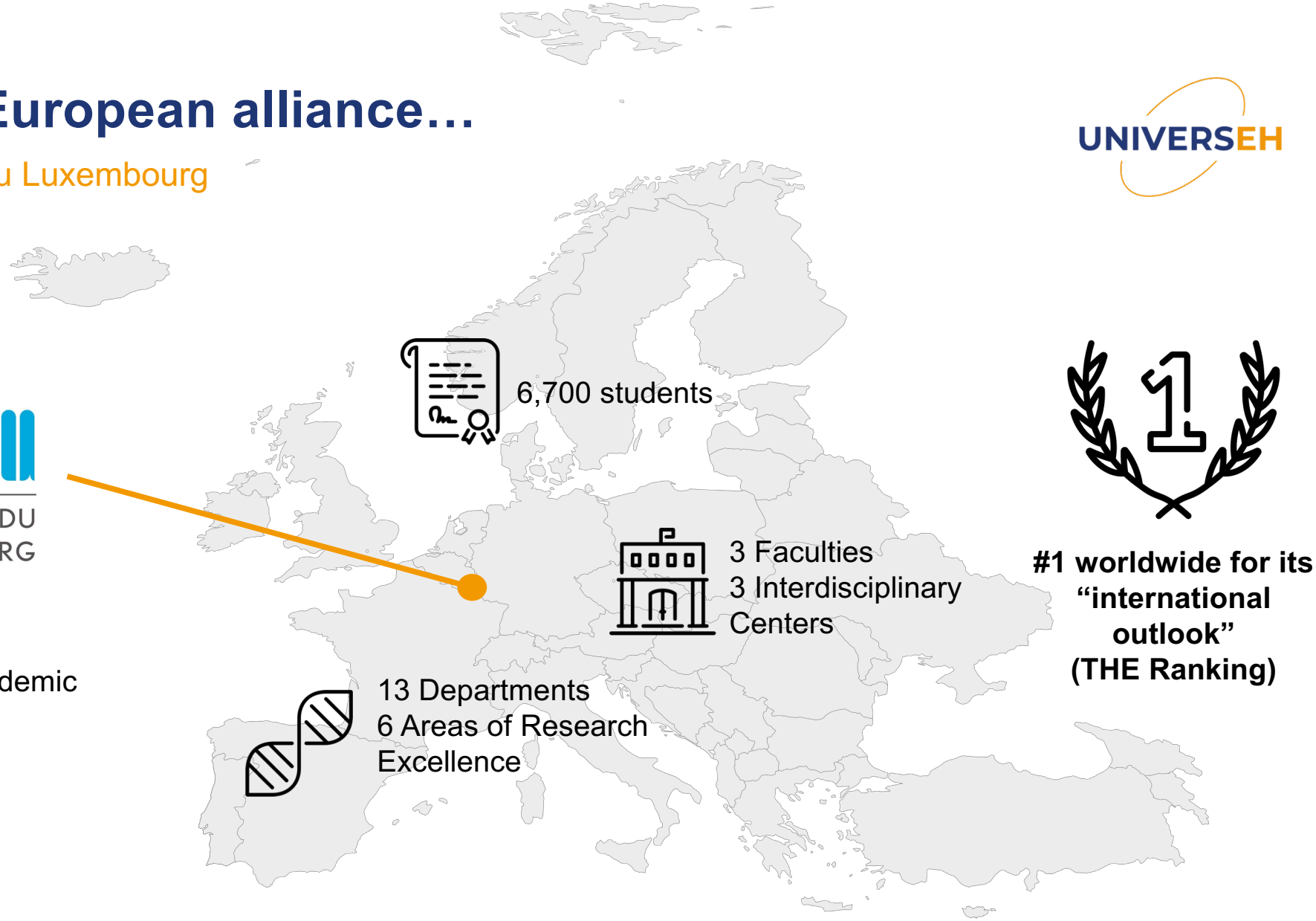

6,700 students

3 Faculties
3 Interdisciplinary Centers

13 Departments
6 Areas of Research Excellence

1329 Academic Staff

#1 worldwide for its "international outlook" (THE Ranking)

A pan-European alliance…

Heinrich Heine Universität Düsseldorf

hhu Heinrich Heine Universität Düsseldorf

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+36,000 students

275 Professors,
19 Junior
Professors

#1 Citizen University
Night of Science Event

1 Cluster of Excellence
4 Collaborative Research Centers
2 Research Units
5 Research Training Groups

5 Faculties
1 University Hospital

A pan-European alliance…

Luleå Tekniska Universitet

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LULEÅ TEKNISKA UNIVERSITET

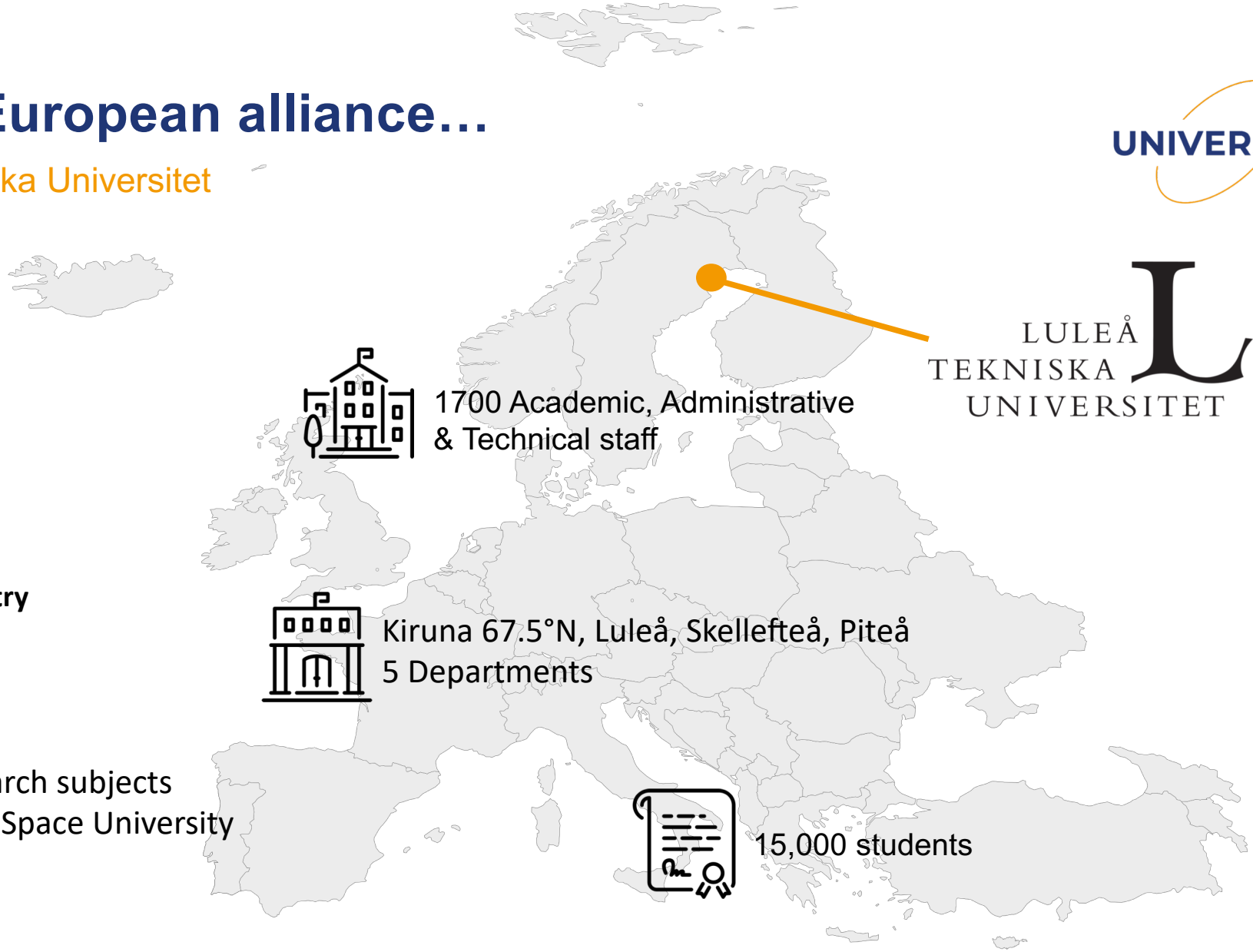
#1 Commissioned Research with Industry

1700 Academic, Administrative & Technical staff

Kiruna 67.5°N, Luleå, Skellefteå, Piteå
5 Departments

69 Research subjects
Swedish Space University

15,000 students



A pan-European alliance…

Akademia Górniczo-Hutnicza im. Stanisława Staszica w Krakowie

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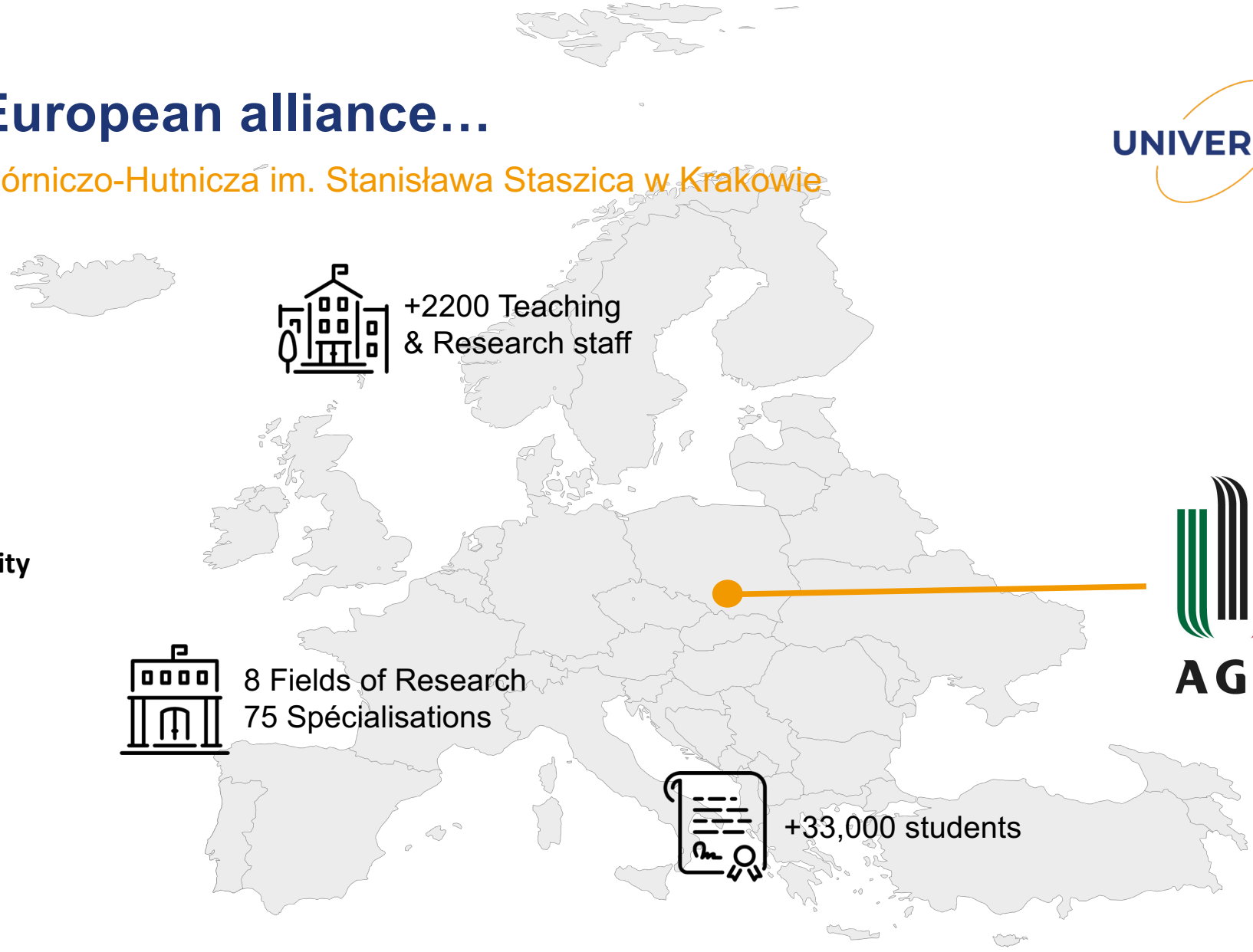
#1 Technical University in Poland

+2200 Teaching & Research staff

8 Fields of Research
75 Spécialisations

700 Research Laboratories

+33,000 students



AGH

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03 | The project

A comprehensive University

6 disciplines

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Science & Engineering

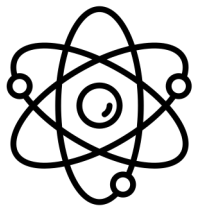
Economy, Business & Finance

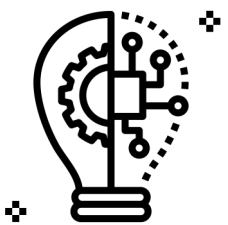
Medicine & Health

Human & Social Sciences

Art & Cultural Studies

Innovation & Entrepreneurship





The Space sector

4 segments

Our Earth: Social, Societal & Environmental Challenges

Sustainable Space

Space Settlement & Resources

Space Exploration & Deep Space

The Space sector

Our Earth

Our Earth: Social, Societal & Environmental Challenges

Sustainable Space

Space Settlement & Resources

Space Exploration & Deep Space

Geo Data & AI

Social Geography

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Navigation & Mobility

Agriculture

Earth Sciences

Climate Change

Geopolitics

○○○

And much more...

The Space sector

Sustainable space

Our Earth: Social, Societal & Environmental Challenges

Sustainable Space

Space Settlement & Resources

Space Exploration & Deep Space

Access to Space

Space Debris

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Military Issues

Satellite constellations

Space Law

Earth Observation

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And much more…

The Space sector

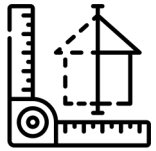
4 sections

Our Earth: Social, Societal & Environmental Challenges

Sustainable Space

Space Settlement & Resources

Space Exploration & Deep Space



Architecture

Robotics @ AI

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ISRU

Telemedicine

Water Mgmt

Confinement

And much more…

The Space sector

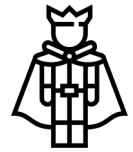
4 sections

Our Earth: Social, Societal & Environmental Challenges

Space Sustainability

Space Settlement & Resources

Space Exploration & Deep Space



Litterature

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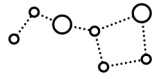
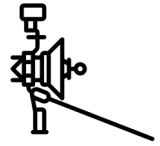
Sci-Fi



Cultural Studies

Deep Space



Space Probes

And much more...

A comprehensive University on the Space Sector

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	Our Earth	Space Sustainability	Space Settlement & Resources	Space Exploration & Deep Space
Science & Engineering				
Economy, Business & Finance				
Medicine & Health				
Human & Social Sciences				
Art & Cultural Studies				
Innovation & Entrepreneurship				

24

Courses / options / programmes

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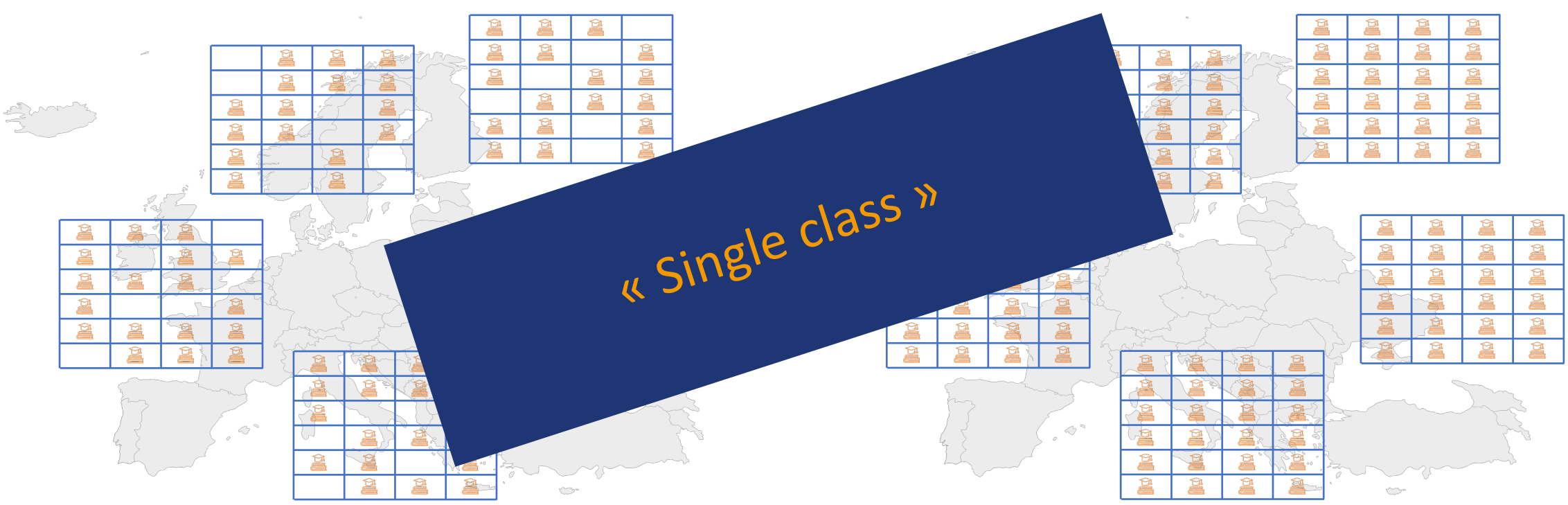
A long-term vision

A 3-year project…

A 7-year vision!



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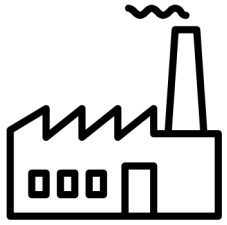
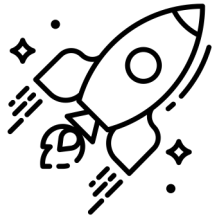
04 | Partners & Support

A wide range of partners…

In 5 countries, and more !

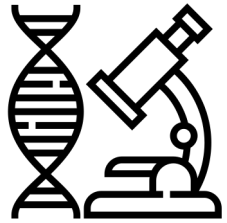


Industrials



Space Agencies

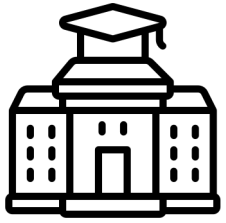
Public Authorities



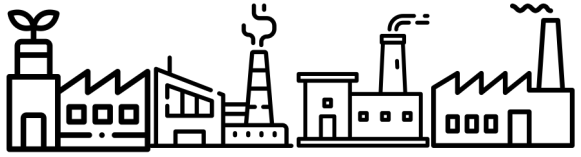
Labs

Students

Associations



Academics



SMEs

toulouse métropole
creo TECH Instruments S.A.
La Région Occitanie Pyrénées · Méditerranée
technoport® technology business incubator
INSTITUTET FÖR RYMDFYSIK IRF Swedish Institute of Space Physics
UNIVERSEH
Fonds National de la Recherche Luxembourg
CAMPUS FRANCE
MEDES
Together ahead. RUAG
SATREVOLUTION
OHB SWEDEN
CLS COLLECTE LOCALISATION SATELLITES
LSA LUXEMBOURG SPACE AGENCY
deimos elecnor group
cnes CENTRE NATIONAL D'ÉTUDES SPATIALES
CERFACS
POLISH SPACE AGENCY
esa
EDISOFT DEFENCE & AEROSPACE TECHNOLOGIES
A THALES Group Company
Luxembourg-City Incubator
GLAE
CHAIRE JEAN MONNET Grenoble Relations franco-allemandes, intégration européenne et mondialisation
SSC
TÉCNICO LISBOA
TOULOUSE TECH TRANSFER
Center for Near Space
IRT SAINT EXUPERY
PASQ SPACE QUALIFICATION
SES
aerospace valley
nereus network of european regions using space technologies
Omnidea AEROSPACE TECHNOLOGY AND ENERGY SYSTEMS
EISCAT SCIENTIFIC ASSOCIATION
gmv INNOVATING SOLUTIONS
Cité de l'espace TOULOUSE
WIA
ONERA THE FRENCH AEROSPACE LAB
arp Industrial Development Agency JSC
spire
PORTUGAL SPACE
AIRBUS
GKN AEROSPACE
TÉCNICO LISBOA
ThalesAlenia Space a Thales / Leonardo company
DLR Deutsches Zentrum für Luft- und Raumfahrt German Aerospace Center
ESN Erasmus Student Network Toulouse
GALAXIE
OMNISYS INSTRUMENTS

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04 | Education & Research

UNIVERSEH & Beyond UNIVERSEH

Education & Research

UNIVERSEH

- WP1: General Management & Coordination
- WP2: Mobility & Multilingiualism
- WP3: Interdisciplinary & Cross-Sectorial Curricula
- WP4: Innovative Pedagogical Models
- WP5: Entrepreneurship & Innovation
- WP6: Equity, Inclusion & Diversity
- WP7: Sustainability & Dissemination

Beyond UNIVERSEH

- WP1: General Management & Coordination
- WP2: Research roadmap for 2035 & vision for 2050
- WP3: Towards a UNIVERSEH single lab & research community
- WP4: UNIVERSEH knowledge transfer and innovation strategy
- WP5: Outside the Lab
- WP6: Dissemination and collaboration with policy makers and other European Universities

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05 | Agenda

UNIVERSEH & Beyond UNIVERSEH

Education & Research

Nov. 2020	Start of the UNIVERSEH project
Dec. 14th & 15th 2020	Kick-Off Meeting of UNIVERSEH
Oct. 4th, 2021	Kick-Off Meeting of Beyond UNIVERSEH
2020 – 2023	Activation of the UNIVERSEH Programmes in partnership with all academic, institutional, associative, political, social, cultural, economic and industrial stakeholders
2027	A comprehensive University in Teaching & Learning, Research & Innovation

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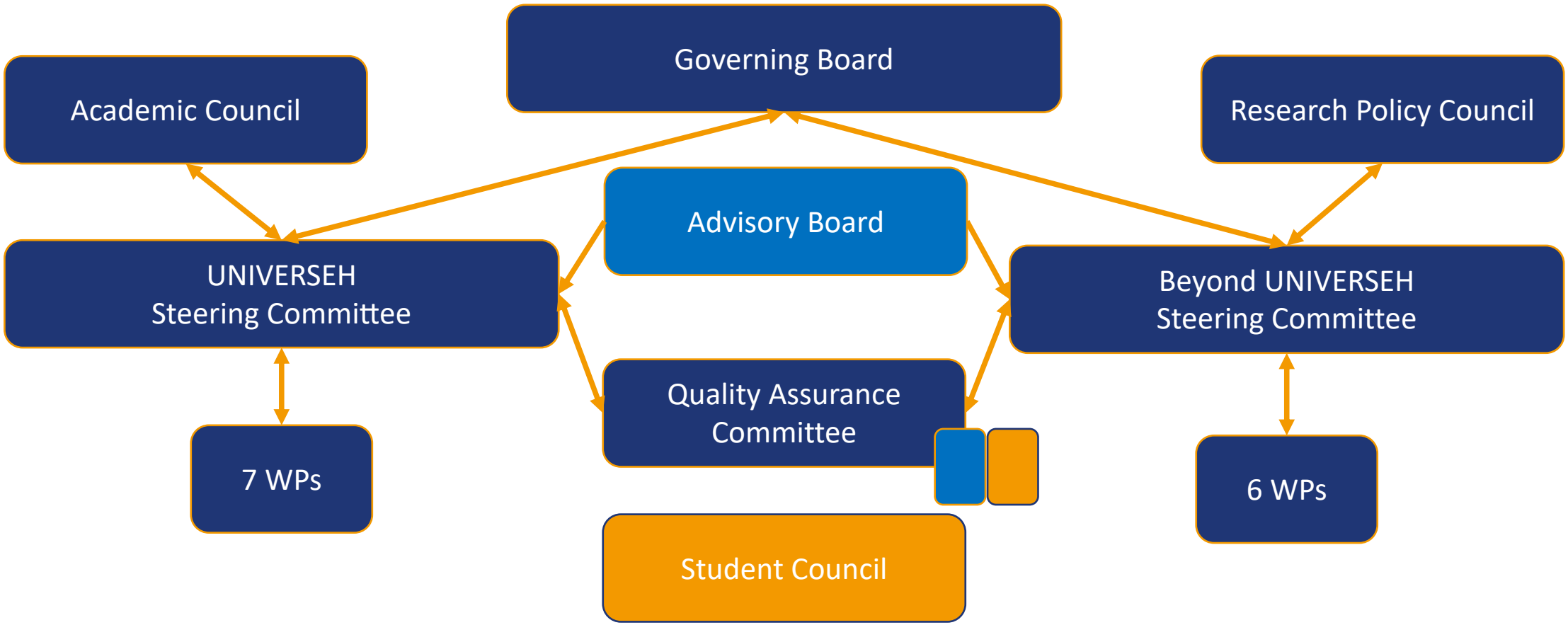
06 | Stakeholders

The governance



Members

Advisory Board & Advisory Committee

" In addition of the governing bodies, an ***Advisory Board*** is established to **coordinate stakeholders' involvement** in the project ":

The ***Advisory Committee*** regroups **all interested stakeholders** in the UNIVERSEH project at **local**, **regional**, **national** and **European scales**. All societal sectors are concerned: economic, industrial, social, cultural, political, associative, educational sectors… UNIVERSEH aims to be in the heart of all these sectors in the space domain.

The ***Advisory Board*** is a **representative subgroup** of the advisory committee. It reflects, as much as possible, a good geographical distribution and a distribution of different types of stakeholders.

OFFICIAL

Objectives

of the Advisory Board

- **Support** the UNIVERSEH projects through **proposals** and **inputs** originating from the Advisory Committee;
- **Facilitate** the **implementation** of the project's activities;
- **Maximise** the **impact** of its results, **liaise** with relevant stakeholders and **actively engage** them in specific project activities;
- **Catalyse** the **sustainability** of the UNIVERSEH project.

Committments

of the Advisory Board

- Back UNIVERSEH teams through **supporting actions** in all working groups activities, especially by **sharing data** and **inputs** and by facilitating their tasks fulfilments;
- **Participate** in the project activities, notably related to Entrepreneurship and Innovation;
- **Share** and **identify opportunities** (traineeship, internship);
- Nominates a **representative** to the Quality Assurance Committee.

WPs overview

UNIVERSEH WP2

Call for contribution / participation!

- Supporting student mobility
- Supporting summer / winter schools
- Participation to Language Cafés / Seminar on multilingualism
- Create the world biggest repository of illustrated space concepts

Mobility & Multilingualism

T2.0	Preamble
T2.1	Development and implementation of Student and staff mobility indicators
T2.2	Preparation of students for mobility
T2.3	Supporting students during periods abroad
T2.4	Summer/Winter School
T2.5	Staff mobility
T2.6	Multilingualism for all
T2.7	UNIVERSEH going digital
T2.8	Space Dictionary

WPs overview

UNIVERSEH WP3

Interdisciplinary & Cross-Sectorial Curricula

T3.0	Preamble
T3.1	Mapping and sharing of partner competences
T3.2	Today and tomorrow's needs for student competences
T3.3	Completing the catalogue of courses
T3.4	Toward a common UNIVERSEH Diploma
T3.5	Short programmes and space awareness
T3.6	Semester Exchange
T3.7	Joint Bachelor programs
T3.8	Joint Master programs
T3.9	Joint Doctoral Programs and Joint Doctorates

« Today's and tomorrow's needs for student competences »

=> Survey on futur competences for the space sector

WPs overview

UNIVERSEH WP3

KEY TASK – NEEDED RAPIDLY

Identify the person(s) to contact in your organisation to fill in a questionnaire. Provide a name and email address

BACKGROUND

Time scale – 10 years or more

Disciplinary competences as well as transferrable skills.

In particular we are interested in (**interdisciplinary) comptence areas that you see as most useful in the future**. We want to concentrate in particular on the disciplinary areas **outside of science and engineering**, for example in economy-business- finance, Medicine and Health, Social and Human sciences, Art and cultural studies, Innovation patents and entrepreneurship.

The idea is to imagine **employment linked to novel near future space activities**. For example for establishing bases in the solar system, using space much more widely for the benefit of humanity, having journalists with excellent knowledge of space activities, linking art and space etc etc.

WPs overview

UNIVERSEH WP3

Stakeholders interested in participating in WP3 activities and meetings ? (Special sessions, permanent representative, revolving representative?)

Active participation in the design of new courses.

Active participation in creating / sharing media for new courses ?

Active participation in defining new WP3 programs ?

WPs overview

UNIVERSEH WP4

Personal Learning Network (PLN) to build a network of students, teachers and experts
[link]

Digital lab experiments, e.g.
IREAL @ISAE-SUPAERO
[link]

ADN Factory: building the world biggest repository of illustrated space concepts
=> Call for contribution / participation!
[link] [link for participation]

Innovative Pedagogical Models

T4.1	Preamble
T4.2	Training program for teaching staff and educational developers/teaching advisors
T4.3	Personal Learning Network
T4.4	From Student to Teacher
T4.5	Hybrid learning and Virtual classroom
T4.6	Accreditation process: Learn abroad and validate at home
T4.7	Digital experiment-based learning
T4.8	Microlearning platform
T4.9	ADN Factory

WPs overview

UNIVERSEH WP5

Entrepreneurship & Innovation

T5.1	Map existing courses and programs at the consortium level
T5.2	Develop new common course/entrepreneurship module adapted to the European space sector
T5.3	Stimulate entrepreneurial mindset and creativity for all members of the universities' communities
T5.4	Call for project with stakeholders such as industry/NGOs (e.g. ActInSpace)
T5.5	Raising awareness about intellectual property and financing opportunities
T5.6	Networking and mentoring program
T5.7	Practical experience in research and innovation
T5.8	Support to student projects

Hackthons

Mentoring

WPs overview

UNIVERSEH WP5

Entrepreneurship & Innovation

Partnerships

Expand strategic partnerships that go beyond the traditional co-funding of discrete research projects

Look farther ahead, with a time scale of 5-7 years or more

Incorporate interdisciplinary approaches, from natural sciences to business and arts, including professional diversity

Hone the competitiveness of companies, universities from European countries and regions

Anchor UNIVERSEH partnership program as a vital centre of competence to help tackle social challenges and drive economic growth within the European Space sector

WPs overview

UNIVERSEH WP5

Entrepreneurship & Innovation

Knowledge & Technology Transfer: INDUSTRY-UNIVERSEH Cooperative Teaching & Learning and Research Program

Industry-university collaboration works best with big framework agreements based on broad principles: catalyse!

Establish the broad principles of cooperation and as situations crop up, decide how to deal with them: make it simple!

Negotiating IP, be practical and pragmatic – and not getting hung up on rules: simply reward all!

Expose faculty and students to how R&D is planned and managed in the private Space sector: share knowledge!

Entrepreneurs-in-residence make technology transfer more effective: accelerate the application of new discoveries in the economy!

WPs overview

UNIVERSEH WP6

Women in Space

Supporting students with specific needs

Equity, Inclusion & Diversity

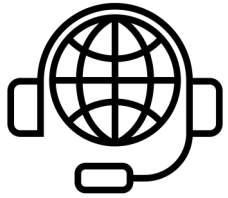
T6.0	Preamble
T6.1	Support mobility for students with specific needs
T6.2	Integration of students from a disadvantaged socio-economic background
T6.3	Promotion of women participation in the space sector
T6.4	Support for migrants and refugees

WPs overview

UNIVERSEH WP7

Sustainability & Dissemination

T7.0	Preamble
T7.1	Dissemination and communication plan and Visual identity
T7.2	Outreach activities
T7.3	Impact assessment
T7.4	Internal actions to sustain the long-term vision of UNIVERSEH
T7.5	Programme for administration and services to sustain UNIVERSEH
T7.6	Programme with public and industrial partners to sustain UNIVERSEH
T7.7	Model of good practices to attract new partners in Europe and Beyond



Communication

Sustainability of the UNIVERSEH project

WPs overview

UNIVERSEH WP7

EXPECTED

Closed contact with communication offices needed

Call for testimonies from SH VIPs on “why supporting UNIVERSEH”

Developing interactions with students and staff

Etc.

WPs overview

Beyond UNIVERSEH WP2

Vision 2050

Roadmap 2035

UNIVERSEH research roadmap for 2035 & vision for 2050

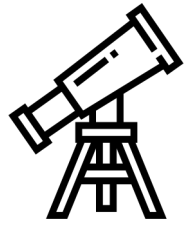
T21	Harmonization and synchronization activities with parallel road mapping of European and Global Initiatives in the Space Sector
T22	Specification and execution of the UNIVERSEH data collection via strategic intelligence, interviews and workshops
T23	Identify relevant application use cases and/or pilots in the space sector including end-users needs for defining a strategic research agenda
T24	2035 Road mapping with long-term goals, impact and space technology opportunities
T25	Vision 2050 for Space Sector

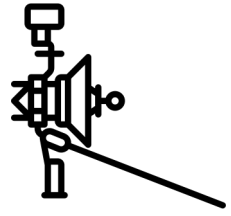
WPs overview

Beyond UNIVERSEH WP3

Towards a UNIVERSEH single lab & research community

T31	Inventory & Selection (only facilities)
T32	Business plan & Fund raising
T33	Toward a common virtual lab
T34	Identification of futures programmes of common interests
T35	Identification of a Major programme
T36	Researchers mobility
T37	Inclusion & Diversity





WPs overview

Beyond UNIVERSEH WP4

UNIVERSEH knowledge transfer and innovation strategy

T41	Strategies to induce or upscale cooperation between academia and the private sector: The Virtual Centre for Space Technologies
T42	Analysis and proposal for a strategic approach to support spin-offs and investments in medium/high-risk entrepreneurial endeavours within the space sector
T43	Strategic drafting of legally sound, competitive, model cooperation agreements focusing on specific collaboration in space sector, with potential extensions to other sectors
T44	Human capital in research and innovation and brain circulation

WPs overview

Beyond UNIVERSEH WP5 & WP6

UNIVERSEH outside the lab

T51	Drafting of and best practice report
T52	Training/coaching of students/researchers in the field of science communication
T53	Developing a platform for student-researcher-citizen exchange
T54	Piloting first citizen science projects

Dissemination and collaboration with policy makers and other European Universities

T61	Achieve impact by sharing knowledge from the Alliance to other higher education institutions in Europe and beyond
T62	Reduce the gap in communication and knowledge between policy sectors and higher education institutional partners of European Universities Alliances
T63	Disseminate knowledge and educational research findings effectively with relevant stakeholders such as governmental and public decision makers
T64	Structure collaboration at the European level, among pilot Alliances

Stakeholders Working Groups

In phase with WPs

Organisation

To be defined and implemented

- Local groups and European groups
- 1 SH representative in each local WGs
- Local WGs PoC

Contact email:

hello@universeh.eu

Survey

Survey Link

UNIVERSEH

07 | Discussion

Working together

Expectations and Interests

A **close relationships** with stakeholders particularly for the long-term **sustainability** of the project

A **‘win-win’ relationship** with stakeholders

Express your interest and your wishes in the framework of UNIVERSEH

Next event

Call for participation!

- VIPs for talk & round tables
- Financial support
- Rewards, grants & others (visits…) for competitions & challenges
- Other support

THANK YOU

UNIVERSEH

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