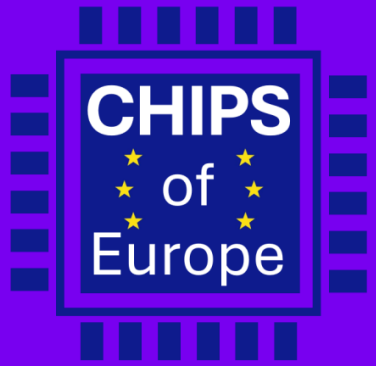
University of
South-Eastern Norway

CHIPS of Europe



Kristin Imenes
Associate Professor
Department of Microsystems



CHIPS of Europe

Creating Higher Education - Industry Programmes for the Semiconductor Industry of Europe

Goal: Increase the attractiveness of semiconductor-related study programmes and careers

Funding: Digital Europe Programme (DIGITAL), Advanced digital skills – Reinforcing skills in semiconductors*

- Semiconductors core of technologies enabling key policy objectives of Europe
- Limited human resources and lack of sufficient qualified staff threatens these achievements
- Reinforcing skills in semiconductors is thus a priority action

*(DIGITAL-2023-SKILLS-04-SEMICONDUCTORS — Reinforcing skills in semiconductors)



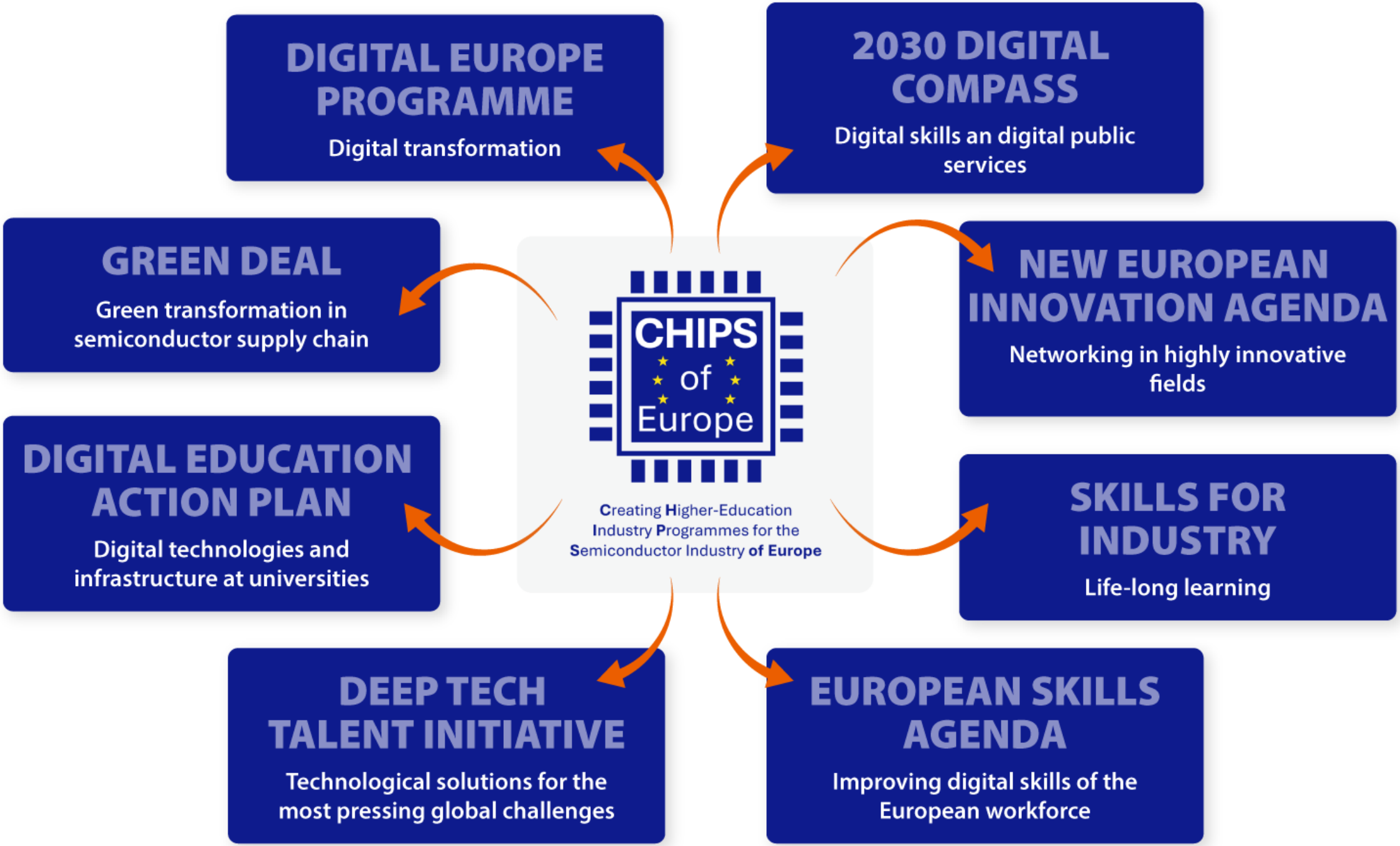
Background

- Too low share of students choosing semiconductors disciplines to satisfy the demand required by the labour market
- Shortage of employees with specific knowledge in semiconductors
- Low awareness of the impact of semiconductors in the society and citizens' daily life
- Too low expectations in terms of prospective career and employment conditions
- **Acute problem**: Large gap between labour market demands and the unavailability of both technicians and high-level graduates. Strong gender imbalance.



Project Objectives

- Addressing semiconductor industry's needs for enhanced skills
- Raising the awareness of the social importance of semiconductors
- Changing the students' perception - Engineering students are the enablers of future innovation
- Updating academic curricula and courses
- Targeting the engineering students of tomorrow and increasing their digital skills
- Addressing gender imbalance and fostering inclusiveness
- Addressing the entire semiconductor supply chain
- Sustainability – long lasting collaboration

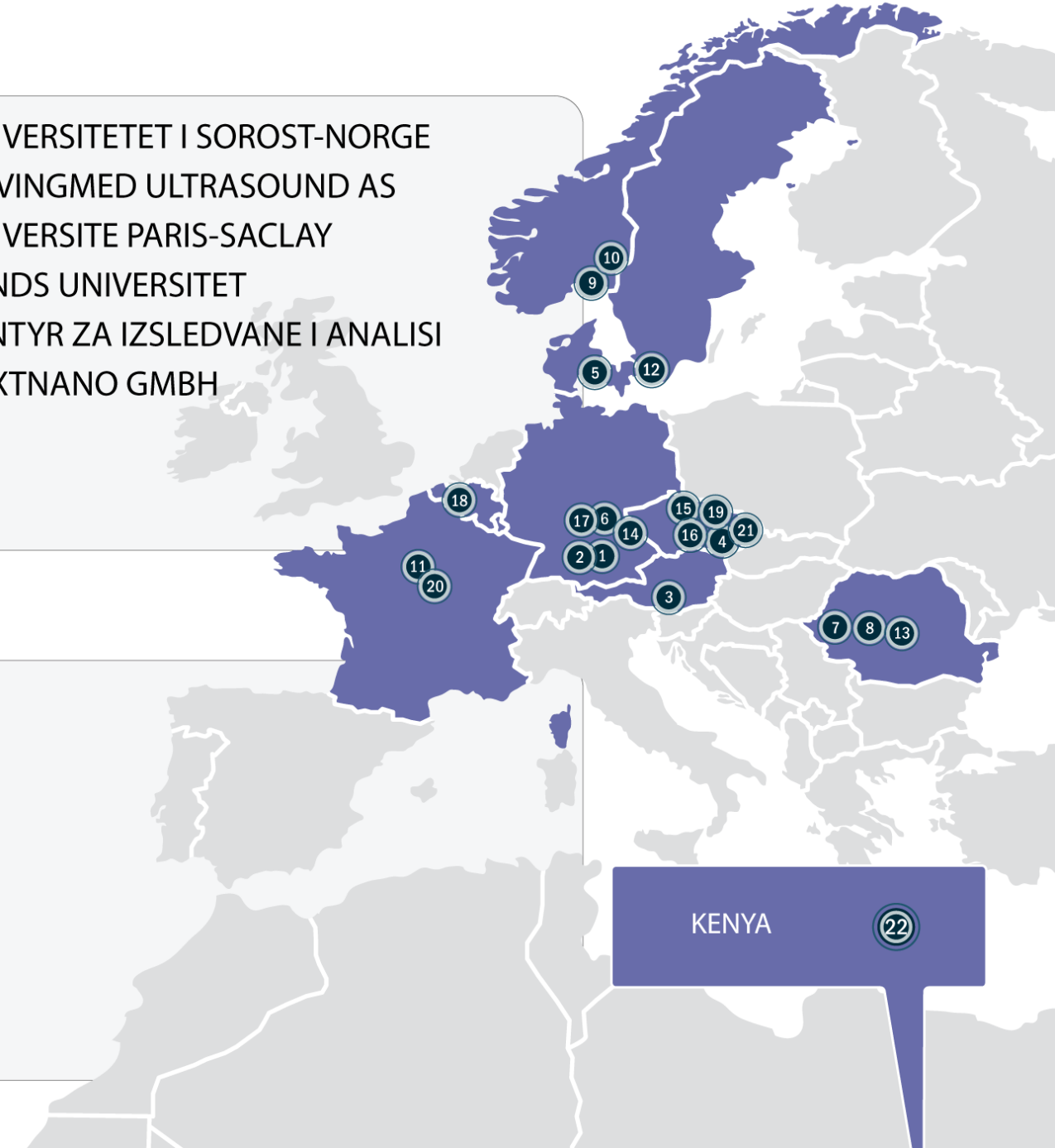

DIGITAL EUROPE PROGRAMME
Digital transformation
2030 DIGITAL COMPASS
Digital skills an digital public services
GREEN DEAL
Green transformation in semiconductor supply chain
NEW EUROPEAN INNOVATION AGENDA
Networking in highly innovative fields
CHIPS of Europe
Creating Higher-Education Industry Programmes for the Semiconductor Industry of Europe
DIGITAL EDUCATION ACTION PLAN
Digital technologies and infrastructure at universities
SKILLS FOR INDUSTRY
Life-long learning
DEEP TECH TALENT INITIATIVE
Technological solutions for the most pressing global challenges
EUROPEAN SKILLS AGENDA
Improving digital skills of the European workforce

PARTNER

1. **HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN** (Coordinator)
2. INFINEON TECHNOLOGIES AG
3. INFINEON TECHNOLOGIES AUSTRIA AG
4. VYSOKE UCENI TECHNICKE V BRNE
5. SYDDANSK UNIVERSITET
6. ECPE EUROPEAN CENTER FOR POWER ELECTRONICS E.V.
7. TECHNICAL UNIVERSITY OF SOFIA
8. ENDUROSAT AD
9. UNIVERSITETET I SOROST-NORGE
10. GE VINGMED ULTRASOUND AS
11. UNIVERSITE PARIS-SACLAY
12. LUNDS UNIVERSITET
13. ZENTYR ZA IZSLEDVANE I ANALISI
14. NEXTNANO GMBH

ASSOCIATED PARTNER

15. ON SEMICONDUCTOR CZECH REPUBLIC, s.r.o.
16. CODASIP S R O
17. CADENCE DESIGN SYSTEMS GMBH
18. INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM
19. TESCAN BRNO SRO
20. X-FAB FRANCE
21. THERMO FISHER SCIENTIFIC BRNO SRO
22. MULTIMEDIA UNIVERSITY OF KENYA



























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Work Packages

WP 1 Project and risk management

- Follows guidelines developed in projects as Digital Education Action Plan.
- Forms the basis for close cooperation that extends beyond the time of project funding

WP2 Development and Adoption of Study Courses

- Develop a semiconductor education ecosystem based on data collection and analysis of the present status
- Alignment of courses and curricula is the prerequisite of an ecosystem targeting on the needs of the industry

WP 3 Virtual Labs

- Develop virtual labs to allow easy and cost-effective education and training on semiconductor related equipment and machines
- Virtual labs are key technology to meet the challenges of lifelong learning, upskilling within the industry, and retraining from other technology fields to the semiconductor technology industry

Work Packages

WP4 Activities targeting secondary schools

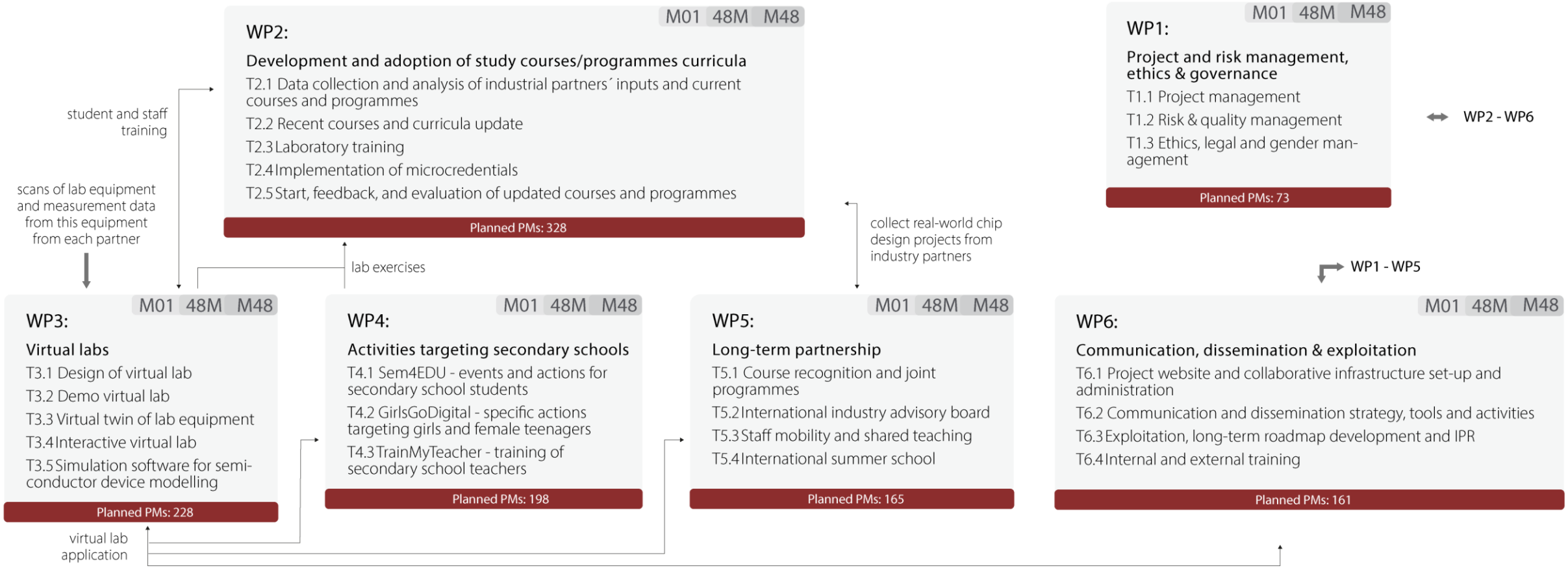
- Foster diverse and skilled workforce capable of driving innovation and growth in the semiconductor industry
- Increase the pool of potential employees
- Target individuals before they choose a specific field of study
- Highlight the importance of semiconductor technology
- Highlight the potential benefits of engaging with semiconductor technology
- Attract girls' and women's interest in technology

WP5 Long-term partnership

- Extending project from setup phase into a permanent state
- Develop strong collaboration within the project
- Mobility of students and instructors, shared teaching, potential joint degrees and summer schools
- Industrial Advisory Board – long-term work and formulating industry requirements and technology trends.
- Secure additional support for recognized talents, offering prizes, scholarships, and collaborative opportunities

WP6 Communication, Dissemination, Exploitation

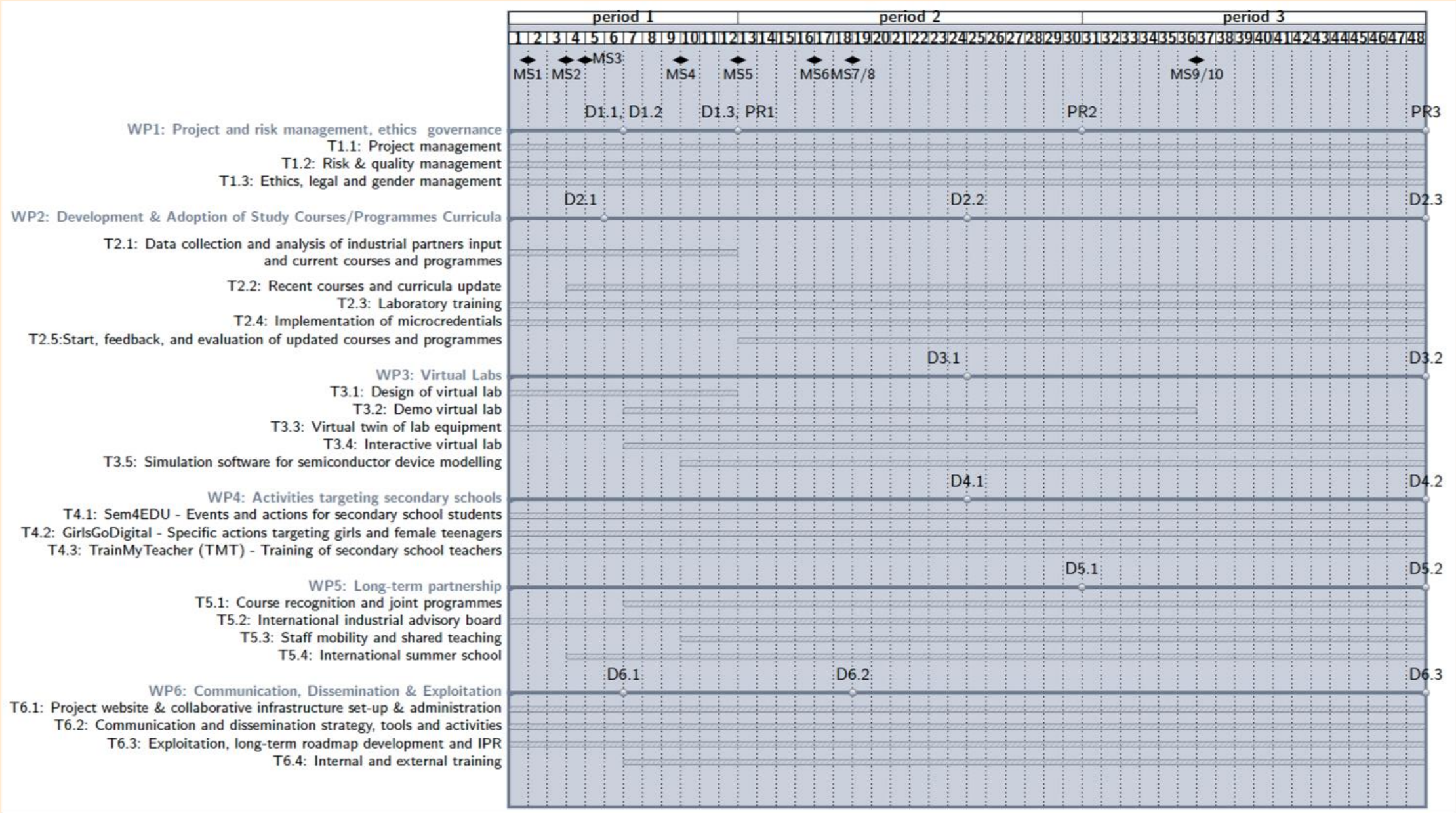
- Establish website and social media channels to make the project visible to the public
- Expand outreach to students beyond the consortium's immediate reach and entice international students to join the European labor market
- Create and provide communication material
- Share and generate exploitation ideas to maximally utilize the results.


M01 48M M48
WP2:
Development and adoption of study courses/programmes curricula
T2.1 Data collection and analysis of industrial partners´ inputs and current courses and programmes
T2.2 Recent courses and curricula update
T2.3 Laboratory training
T2.4 Implementation of microcredentials
T2.5 Start, feedback, and evaluation of updated courses and programmes
Planned PMs: 328
M01 48M M48
WP1:
Project and risk management, ethics & governance
T1.1 Project management
T1.2 Risk & quality management
T1.3 Ethics, legal and gender management
Planned PMs: 73
WP2 - WP6
student and staff training
scans of lab equipment and measurement data from this equipment from each partner
lab exercises
collect real-world chip design projects from industry partners
WP1 - WP5
M01 48M M48
WP3:
Virtual labs
T3.1 Design of virtual lab
T3.2 Demo virtual lab
T3.3 Virtual twin of lab equipment
T3.4 Interactive virtual lab
T3.5 Simulation software for semiconductor device modelling
Planned PMs: 228
M01 48M M48
WP4:
Activities targeting secondary schools
T4.1 Sem4EDU - events and actions for secondary school students
T4.2 GirlsGoDigital - specific actions targeting girls and female teenagers
T4.3 TrainMyTeacher - training of secondary school teachers
Planned PMs: 198
M01 48M M48
WP5:
Long-term partnership
T5.1 Course recognition and joint programmes
T5.2 International industry advisory board
T5.3 Staff mobility and shared teaching
T5.4 International summer school
Planned PMs: 165
M01 48M M48
WP6:
Communication, dissemination & exploitation
T6.1 Project website and collaborative infrastructure set-up and administration
T6.2 Communication and dissemination strategy, tools and activities
T6.3 Exploitation, long-term roadmap development and IPR
T6.4 Internal and external training
Planned PMs: 161
virtual lab application



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- Project start June 2024 – 4 years duration
- Website: **chipsofeurope.eu** (will be launched soon)
- Kick-off meeting 24-26 June
  Regular physical project meetings for all partners
- Advisory Board
- Local and international events and summer schools
- How to connect?


period 1
period 2
period 3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
MS1
MS2
MS3
MS4
MS5
MS6
MS7/8
MS9/10
D1.1, D1.2
D1.3, PR1
PR2
PR3
WP1: Project and risk management, ethics governance
T1.1: Project management
T1.2: Risk & quality management
T1.3: Ethics, legal and gender management
D2.1
D2.2
D2.3
WP2: Development & Adoption of Study Courses/Programmes Curricula
T2.1: Data collection and analysis of industrial partners input and current courses and programmes
T2.2: Recent courses and curricula update
T2.3: Laboratory training
T2.4: Implementation of microcredentials
T2.5:Start, feedback, and evaluation of updated courses and programmes
D3.1
D3.2
WP3: Virtual Labs
T3.1: Design of virtual lab
T3.2: Demo virtual lab
T3.3: Virtual twin of lab equipment
T3.4: Interactive virtual lab
T3.5: Simulation software for semiconductor device modelling
D4.1
D4.2
WP4: Activities targeting secondary schools
T4.1: Sem4EDU - Events and actions for secondary school students
T4.2: GirlsGoDigital - Specific actions targeting girls and female teenagers
T4.3: TrainMyTeacher (TMT) - Training of secondary school teachers
D5.1
D5.2
WP5: Long-term partnership
T5.1: Course recognition and joint programmes
T5.2: International industrial advisory board
T5.3: Staff mobility and shared teaching
T5.4: International summer school
D6.1
D6.2
D6.3
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T6.4: Internal and external training



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