

# COMET CENTRE (K1)

## PRO<sup>2</sup>FUTURE GMBH

### PRO<sup>2</sup>FUTURE II – COGNITIVE AND SUSTAINABLE PRODUCTS AND PRODUCTION SYSTEMS OF THE FUTURE

**Main location:** Johannes Kepler University Linz (Upper Austria)

**Other locations:** Graz Technical University (Styria)

**Thematic area:** Material & Production



#### Thematic focuses

- Cognification: Post Digital Transformation in Industry
- Cognitive, Sustainable, and Human-Centered Products and Production Systems
- Energy Efficiency
- Circular Economy
- Technological Sovereignty
- Resilience

#### Planned realisation and outcomes

The **post-digital-transformation era** in **industry** is evidently transforming into **cognification** (embedding AI methods and mechanisms into literally every industrial entity), **sustainability** (setting product design and manufacturing operations on “sustainable” grounds) and **human-centeredness of technology**. **Pro<sup>2</sup>Future** aims for **cognitive and sustainable products and production systems**, building on **foundational principles** of computational **perception**, **orchestrated** device and process control, and explanatory predictive **analytics**. **Sustainability** is addressed with contributions to **circular economy**, **energy efficiency**, **resilience**, and **technological sovereignty**.

Pro<sup>2</sup>Future aims to create and provide an **industrially motivated AI alternative** to the current **foundation models** in **generative AI** that is (i) **not holistic** and **cloud-based**, but **on-device**, **embedded** and **federated**, (ii) **not pretrained**, but **streaming** and **learning incrementally** via **reinforcement**, and (iii) **not resource aggressive**, but **human brain inspired** and **environment friendly**. It will unleash the **innovation potentials** of **AI** by **close interaction** of scientific excellence coming from **renowned international scientific** and **world-leading company partners**, thus paving and driving the **post-digitalization roadmap** towards **cognitive industries**.

#### History of establishment

As a now established research center with a focus on cognitive production, Pro<sup>2</sup>Future was founded in 2017 on Austria's strongest industrial and research axis Upper Austria-Styria. The approved research program of the first epoch (2017-2025), which in the first funding period (2017-2021) was based on cooperation between the areas of **Perception and Aware Systems** (Area 1), **Cognitive Robotics and Shopfloors** (Area 2), **Cognitive Decision Making** (Area 3), **Cognitive Products** (Area 4.1) and **Cognitive Production Systems** (Area 4.2), was expanded in the second funding period (2021-2025) to include the following cross-area topics: **Pervasive AI**, **Causality**, **Explainable AI**, **Edge Analytics**, **Engineering for Distributed AI**, **Analytical User Interfaces**, **Failsafe & Robust AI** and **AI for Sustainable Production**. In the second epoch (2025-2033), the center will focus, in addition to the thematic priorities mentioned above, on the areas of **Perception** (Area P), **Orchestration** (Area O), **Analytics** (Area A), **Cognitive and Sustainable Products** (Area Prod), and **Cognitive and Sustainable Production Systems** (Area Syst).

## COMET FACTSHEET

### **Selected company partners** (max. 10):

1. Fronius International GmbH
2. AVL List GmbH
3. voestalpine Stahl
4. Zell-Metall
5. SIEMENS
6. Primetals Technologies Austria GmbH
7. Palfinger Europe
8. NXP Semiconductors
9. Dynatrace Austria
10. ENGEL Austria

### **Selected scientific partners** (max. 5):

1. Johannes Kepler University Linz
2. Graz University of Technology
3. TU Munich
4. DFKI Kaiserslautern
5. University of Graz

### **Selected international<sup>1</sup> partners** (max. 5):

1. Elektrobit Germany
2. Leistritz Germany
3. SONY Europe
4. UNICOR Germany
5. Infineon Germany

**Duration:** 01.04.2025 – 31.03.2029 (8 years)

**Staff employed at the Centre:** 42 FTE, thereof 33 scientists

**Management:** Univ.-Prof. Dr. Alois Ferscha, Scientific Director  
DI Gerd Hribernig, CEO

**Contact:** Pro2Future GmbH  
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[www.ffg.at/comet](http://www.ffg.at/comet)

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<sup>1</sup> Partners with headquarters outside Austria