



AUSTRIAN ADVANCED
LIGHTWEIGHT TECHNOLOGY

A2LT – Austrian Advanced Lightweight Technology

A joint initiative of the Automotive-, Mechatronic-, Plastics-Cluster and the industry division of the Upper Austrian Chamber of Commerce and the ACStyria



innovation is our business.



wk/occe
sparte.industrie

Global Megatrends

AND THEIR IMPACT ON FUTURE TECHNOLOGY DEVELOPMENT



GROWTH OF POPULATION

By 2050 the world population will grow by 25 %. The main focus of growth is Asia which will also grow economically. So more and more people have to share the scant resources of the planet.

Fact: Importance of circularity and sustainability will grow



URBANIZATION

In 2050, 68% of the world's population will live in urban areas.

Requirement: This demands new mobility and infrastructure concepts.



NEW MOBILITY

Known and future mobility will connect people on short and long haul traveling. Mobility is and will be diversified.

Reality: New markets are emerging and demand new solutions, on the ground and in the air.



CLIMATE CHANGE

Reduction of CO2 emissions to almost zero. Target achievement will only function with innovation and technology development increasingly important for the mobility industry.

Assessment: Sustainability is becoming a defining issue in the industry.

Why Lightweight Construction

A KEY ENABLER FOR SUSTAINABLE GROWTH

WHY

Vision and
Mission



Sustainable Growth from Innovation

Global developments create framework conditions that open up opportunities. We are committed to drive innovation to develop lightweight technology across the value chain.

HOW

Strategic
Driver



Innovation

- Technology Front Runner
- Trend Setting
- Sustainable

Horizontal / Vertical Network

- Universities
- Industry
- Government

Diversification & Value Stream

- Material
- Process
- Automation
- Industrialization

Education

- Education of future talent
- Setting up technology hubs (LIT)

WHAT

Concrete
realization



Materials

- High Performing Steel & Aluminum
- Powder Materials
- Composite Materials

Process

- 3D Printing
- Forming Technology
- Hybrid Assembly
- Material Circularity

Automation

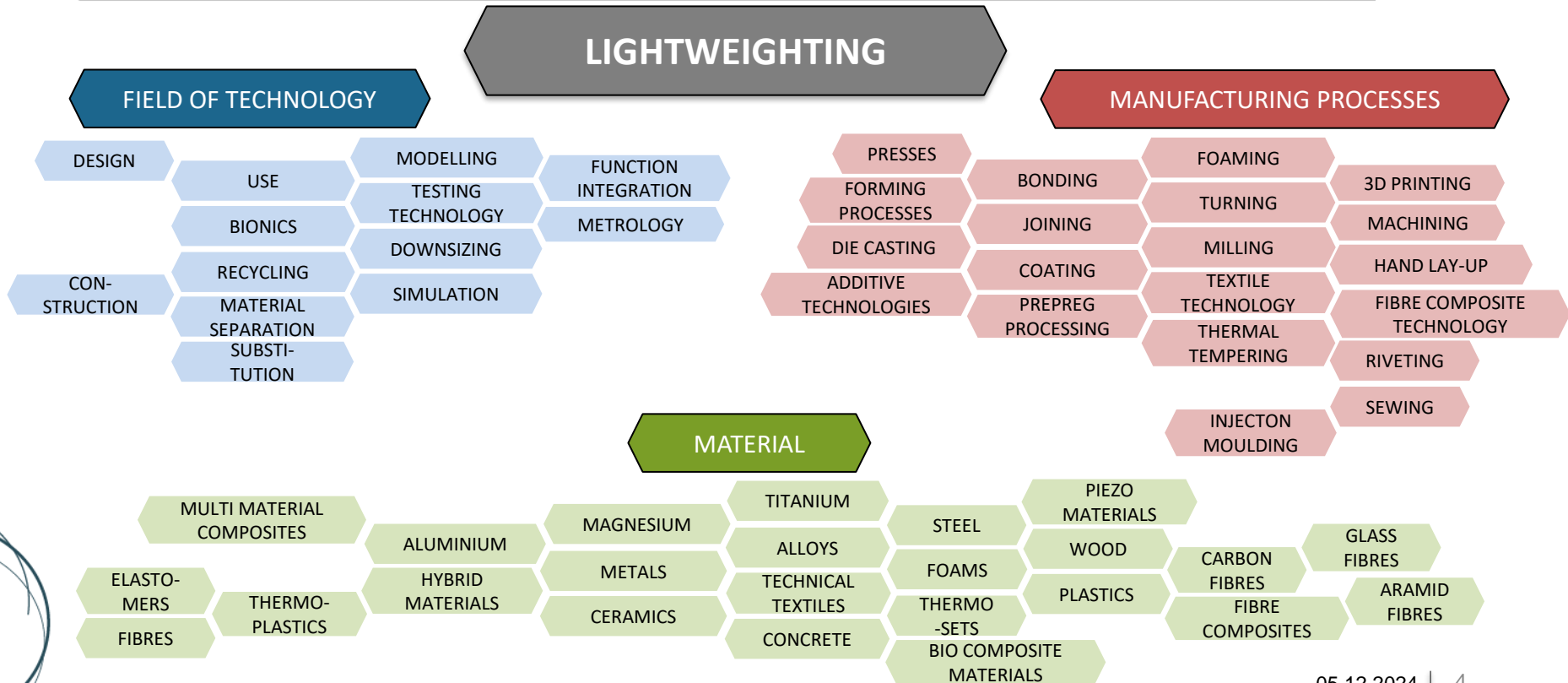
- Industry 4.0
- Digitalization
- Robotics
- Cycle Time & Cost Reduction

Products

- Rail
- Trucks
- Automotive
- Aircraft & Space
- Future Mobility

Lightweighting Disciplines

TECHNOLOGIES – MATERIALS – PROCESSES



Who we are

THE A2LT-MEMBERS

A network of **companies & institutes** focused on the development of **lightweight technology** and manufacturing processes.



21 companies & research institutes



38,000 employees



EUR 16 billion turnover /
EUR 600 million R&D budget

Science & Research



CEERDSTERRSCH



Institute of
Structural
Lightweight Design



Technische Universität
Koblenz



MONTAN
UNIVERSITÄT
LEOBEN



Polymer Competence Center Leoben



Graz
University of Technology

Lightweighting
Materials &
Simulation



ONE STEP AHEAD.



LEICHTBAUWERK



MANUFACTURING



AUSTRIAN INSTITUTE
OF TECHNOLOGY



Innovationszentrum
W.E.I.Z.
Der Standort für Forschung, Bildung & Wirtschaft

Processing &
Manufacturing
Technology



RUBIG
DRIVING SUCCESS



SOLUTIONS FERRING



be the first



Applications &
Products



panki
RACING SYSTEMS



TECHNOLOGY



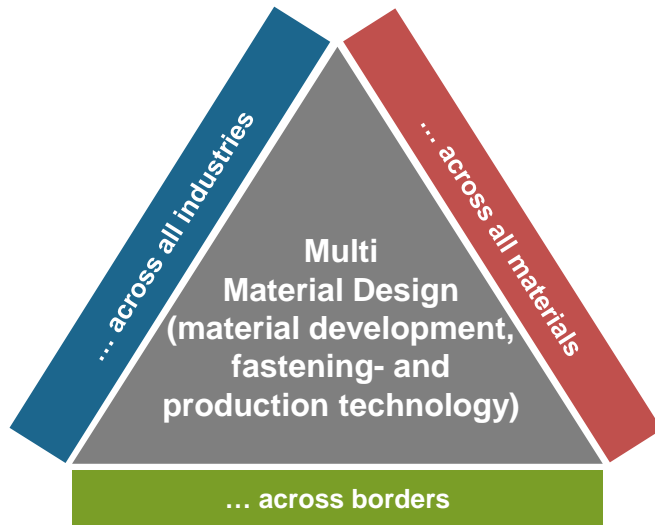
MARK



EUROPE
ULTIMATE
sustainable solutions for mobility

Our Mission

AFFORDABLE, SUSTAINABLE AND SMART LIGHTWEIGHTING



... affordable lightweighting



... sustainable lightweighting

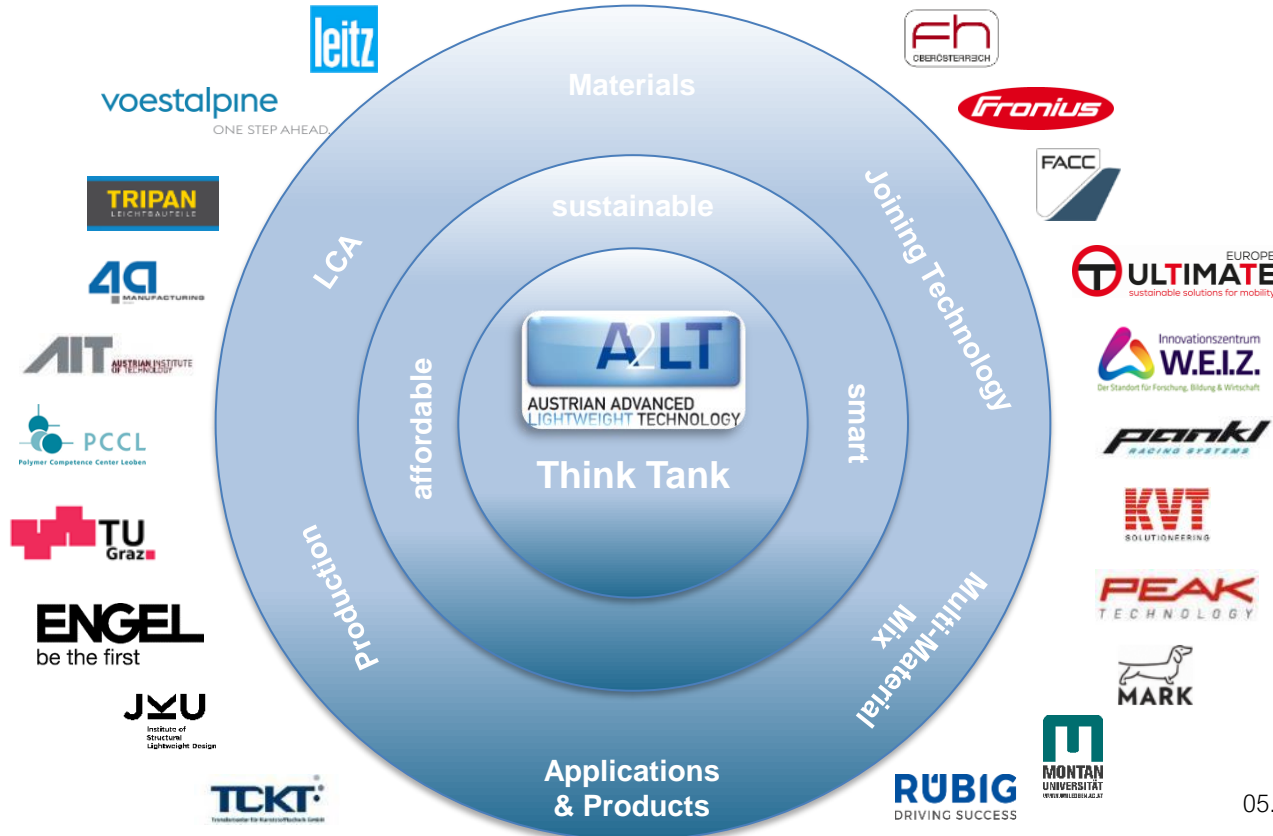


... smart lightweighting



Our Vision

think tank and single entry point to lightweight construction ecosystem Austria



A2LT - Positions

expanding lightweight construction excellence – secure Austrian technological leadership

6 positions of the A2LT, aiming at:

- measures to **secure and expand Austria's leading role** as a lightweight technology region
- establishing a **strong market position** in the long term
- sustaining **high-quality industrial jobs**
- **ensuring and accelerating connectivity** to top international research and technology through all available means
- ensuring **joint action** with the public sector and the **responsible ministries**
- first point of contact – **single entry point** – for the lightweight construction ecosystem in Austria

	<p>Promoting technological pre-eminence in lightweight construction: Securing a competitive advantage, facilitating the achievement of climate goals</p> <p>Effect/aim: Establishing Austria and Europe as resilient production hubs</p>
	<p>Accelerating technology transfers from research to industrial applications</p> <p>Effect/aim: Implementation in concrete innovations</p>
	<p>Optimising funding programmes and general conditions for industry and research</p> <p>Effect/aim: Funding instruments for lightweight construction across technologies and industries</p>
	<p>Defining specific R&D priorities for sustainable, affordable and smart lightweight construction</p> <p>Effect/aim: Ensuring technological pre-eminence</p>
	<p>Strengthening international networking in lightweight construction and intensifying public relations</p> <p>Effect/aim: Alliance of strongest lightweight construction regions</p>
	<p>Establishing design for repair/reuse/recycling as equally important as functionality and production efficiency</p> <p>Effect/aim: Exploiting economic and environmental potential of recyclable lightweight construction technology</p>

A2LT Activities

INITIATING – NETWORKING – SUPPORTING

Initiate collaborative Projects



Joint approach on R&D activities by means of:

- local
- national
- international

funding programs

Networking & Know How Exchange



A2LT Meetings:

- Frequent meeting of the cross-industry ecosystem within A2LT
- Sharing know how on cutting edge technology developments
- visibility for best practice solutions

R&D Mentoring & Support



Mentoring & financial support for R&D institutions and young talents:

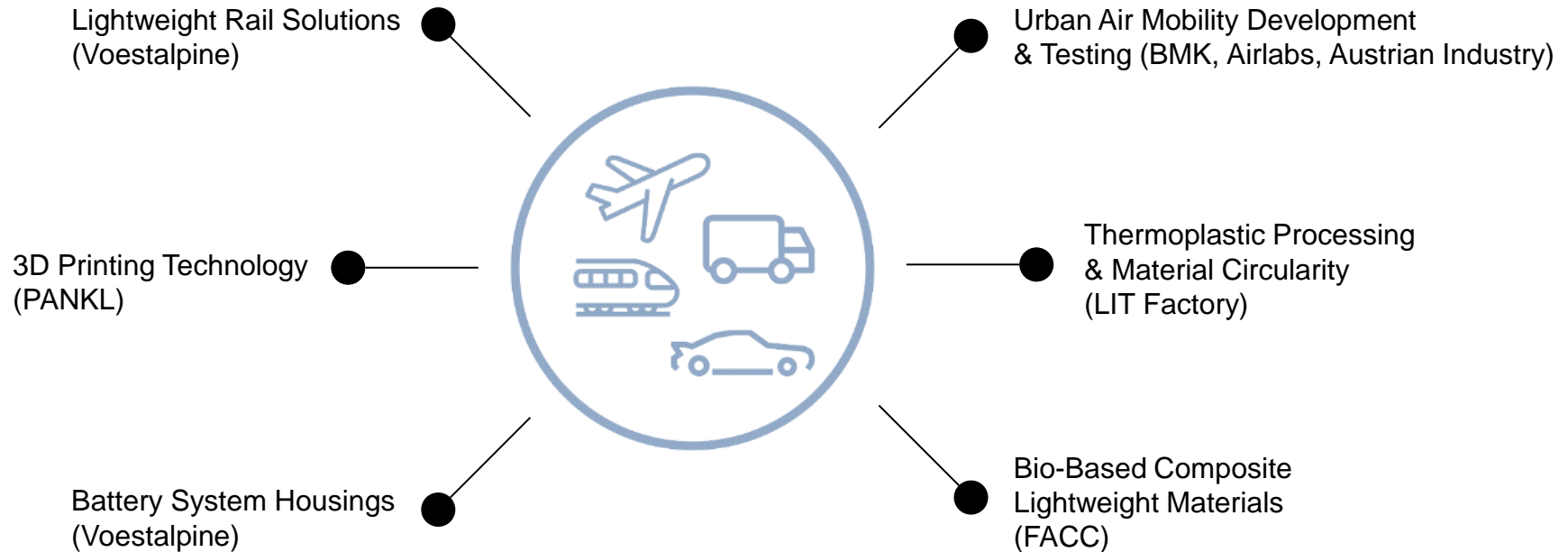
- frequent call for projects
- Ensuring expert mentoring from A2LT members
- Generating new know how for the entire A2LT ecosystem

A2LT Lightweighting Eco-System



Innovation & Technology

OVERVIEW OF LIGHTWEIGHT PROJECTS



A2LT Best Practice

HIGHLIGHTS



R&D Mentoring & Support for novel drone concept:

- 40% weight-saving goals
- air-control approval
- development of approved materials and manufacturing processes



Successful Horizon2020 submission:

DT-NMBP-19-2019 “Advanced materials for additive manufacturing”

- Project: Multi FUN
- Lead: AIT
- Budget: 7.9 Mio Euros
- Partners: 8 out of 21 from Austria



Collaborative product development:

- Hydraulic cylinder with up to 70% weight saving compared to conventional cylinders
- optimization of production process
- improvement of the CFK-filament winding
- improvement of the metal-liner



A2LT Best Practice

HIGHLIGHTS

A2LT meetings / ACstyria Lightweight Day:



- Co-operative meetings
- Expert input and exchange
- Company tours
- 2020: ACstyria Lightweight Day in cooperation with A2LT



Co-Creation and financial support of scientific papers:



- Master thesis on additive manufacturing



- Bachelor thesis on joining technologies



International co-operation and projects:



- Group stands at int. trade fairs (JEC, IAA, ...)
- Visibility of A2LT at int. congresses (LMD Ranshofen, ...)
- International networking (European Lightweight Association – ELA)



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