



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

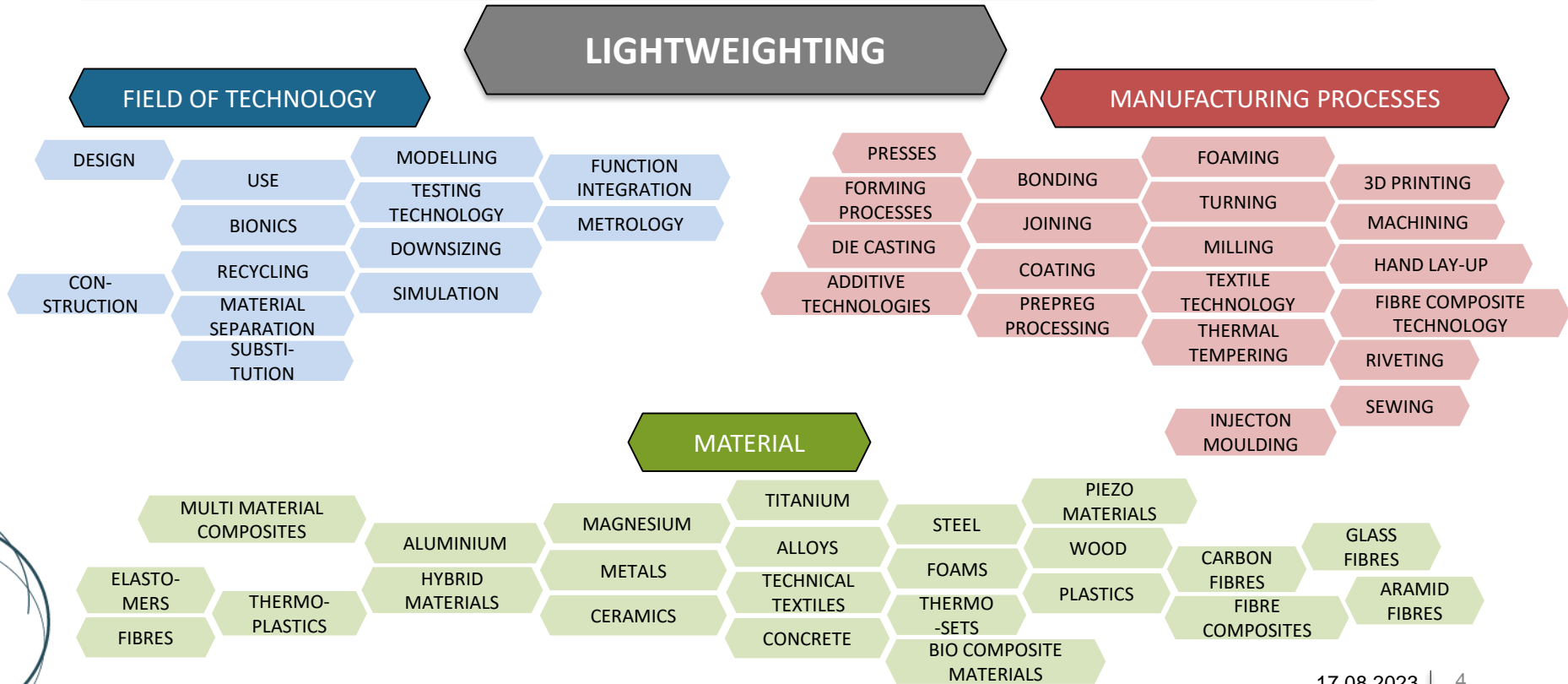
- Industry 4.0
- Digitalization
- Robotics
- Cycle Time & Cost Reduction

### 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



Lightweighting Materials & Simulation



Processing & Manufacturing Technology

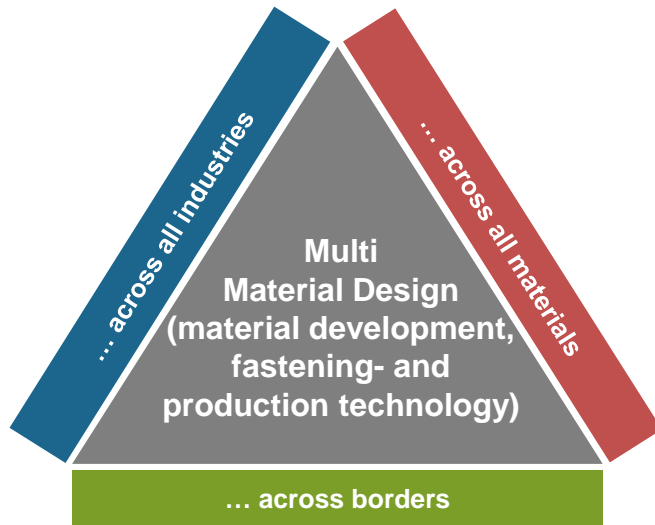


Applications & Products



# Our Mission

AFFORDABLE, SUSTAINABLE AND SMART LIGHTWEIGHTING



... affordable lightweighting



... sustainable lightweighting

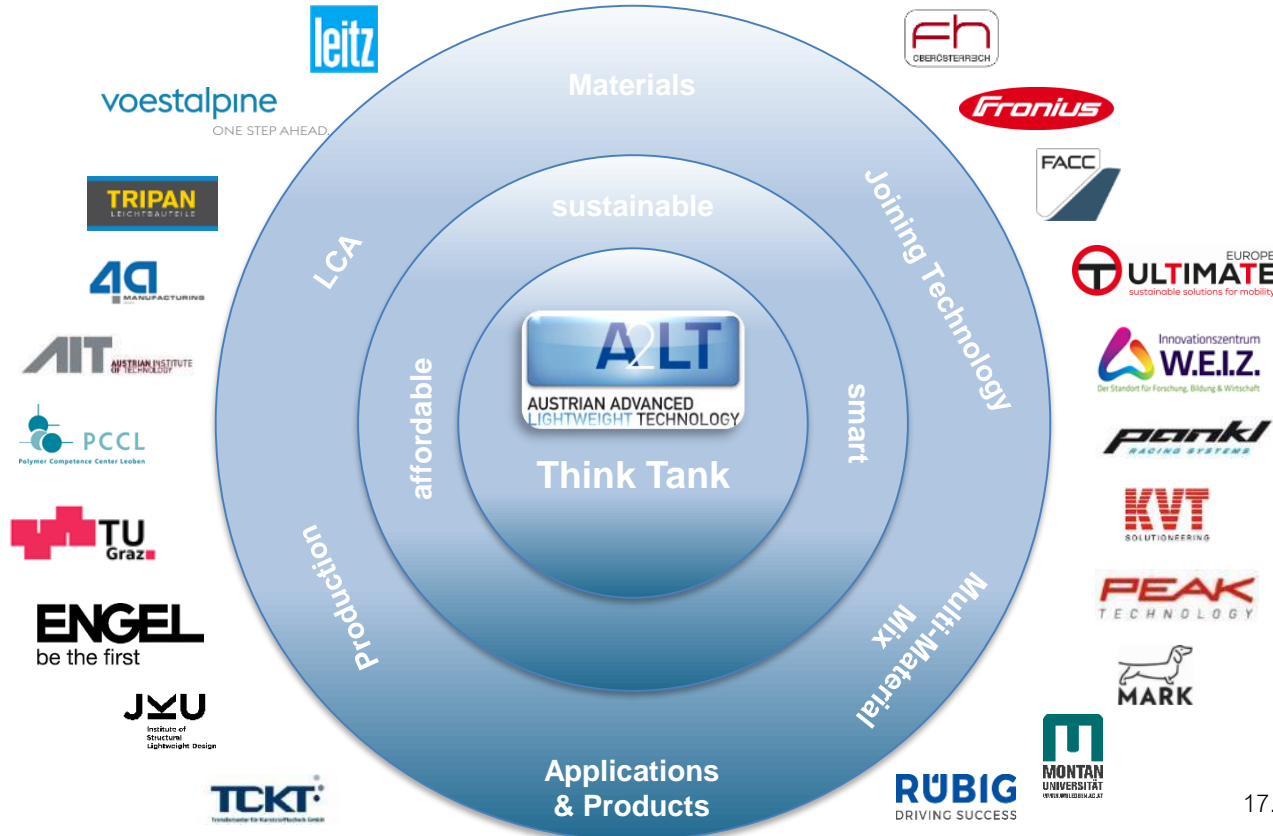


... smart lightweighting



# 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&amp;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:

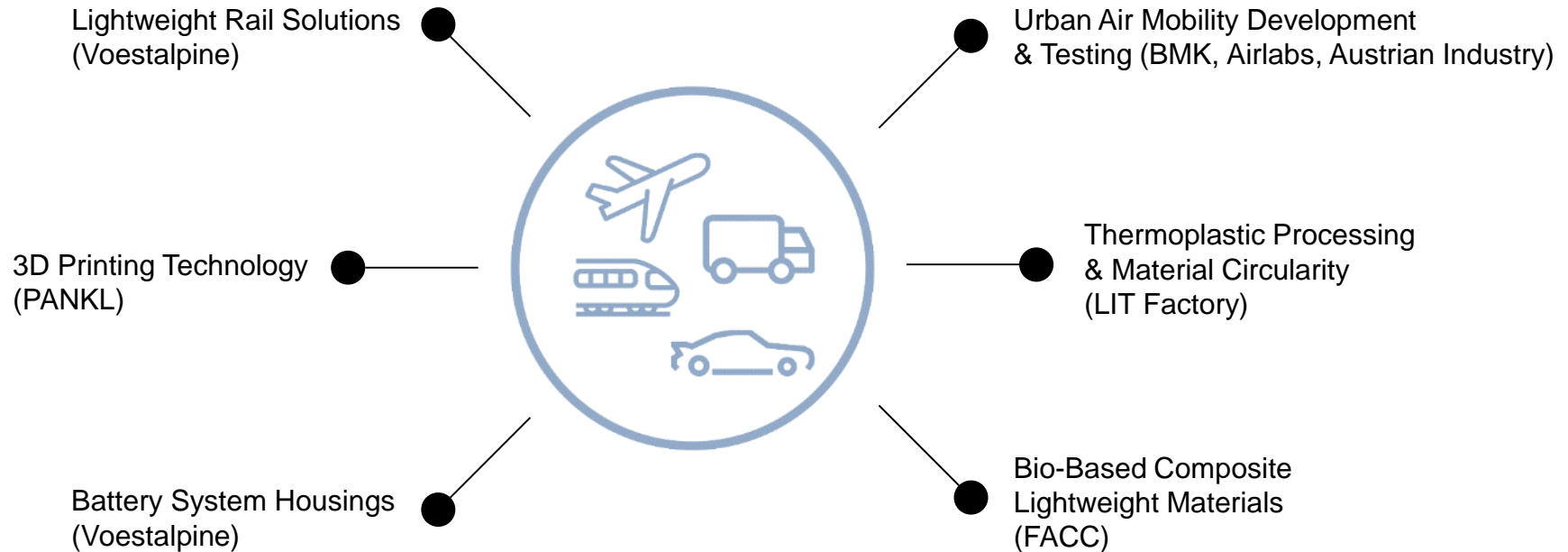
- frequent call for projects
- Ensuring expert mentoring from A2LT members
- Generating new know how for the entire A2LT ecosystem

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)



# Contact & Information

## Stefan Hopfer, BSc



Project Manager  
Automotive-Cluster

+43 664 848 12 92

[stefan.hopfer@biz-up.at](mailto:stefan.hopfer@biz-up.at)

## Martin Zottler, MSc



Project Manager  
Automotive-Cluster

+43 664 787 36 294

[martin.zottler@biz-up.at](mailto:martin.zottler@biz-up.at)

## DI Lisa Bayer



Project Manager  
Plastics-Cluster

+43 664 787 365 48

[lisa.bayer@biz-up.at](mailto:lisa.bayer@biz-up.at)

[www.a2lt.at](http://www.a2lt.at)