SMC (Sheet Molding Compound) has been a proven and first choice solution for several applications for many years, the most important markets are:

- Automotive
- Electronics
- Building and Construction

The drive to further weight savings and significant reduction in CO2- emissions requires a next generation of High-Performance SMC (HP-SMC) that features:

- Short and continuous fiber reinforcements
- Both carbon and glass fibers
- Customized resin compounds

This study provides in-depth knowledge on SMC applications and technologies, key challenges and technological solutions for establishing High-Performance SMC and serves as basis for the elaboration of design guidelines, a target-orientated development and to open up new business opportunities.

The project has been inspired by an international network of innovative companies shaping the future of HP-SMC.

### POTENTIAL OF SMC
- Proven technology for trucks and cars
- 25 % of EU market in GFRP
- Capable for mass production
- Capable of on-line painting, Class A
- Cost competitive to metals

### “HIGH-PERFORMANCE SMC” – WHAT IS NEW?
- New Fibers: Carbon, Glass (continuous)
- New Resins: UP, VE, EP
- Continuous reinforcements
- Local/ tailored reinforcements
- Combination of material systems

### THE MARKET AND TECHNOLOGY STUDY
- The state of the art of SMC and HP-SMC technologies and their readiness
- Use cases & value chains incl. best practice solutions for structural and Class A applications and other markets like electrical and building and infrastructure
- FMEA, key challenges and fields of action for development to establish HP-SMC
- Next-level solutions and new business opportunities
- Basis for development of design guidelines, simulation tools
- Specification of requirements and content with the help of OEMs such as BMW, General Motors, MAN Truck & Bus AG, Volkswagen AG and Toyota
Workgroup History

2016
- Initial workshop with 60 participants (OEMS involved)

2016
- Workgroup meetings
  - Definition of roadmap
    - Definition of most important subjects for R&D: material characterizations of various SMC types, methods for fast and reliable pre-design of components and processes, an improved bonding of reinforcing fibers to the resin matrix as well as the development of new resins

2016
- Discussion of workpackages
  - Presentation of draft proposal for the public funded project “ComMatBase” (program “KMU NetC” from BMBF), review results of applied SMC test methods, development of a design guideline for how to work with HP SMC and discussion on different requirements, presentation of framework of HP-SMC Business Platform

2017
- Study
  - Intermediate meeting with automotive OEMs: presentation of joint market and technology study on HP SMC, discussion of OEM requirements

2017
- Study
  - Open workgroup & information event involving companies outside the AZL Partner Network on the Joint Market and Technology Study: Proposal of use cases and parts of interest

2018
- Presentation of phase 1 of the SMC data base and proposal for phase 2 and 3

2019
- Overview on design and engineering in SMC, potentials of a SMC data base in form of workshop session

2019
- Presentation of status of data generation for data base program and proposal for the testing program for a data base for HP SMC

UPCOMING ACTIVITIES
visit www.lightweight-production.com/dates

- Proposal for establishing a database for SMC materials
- Suitable simulation tools
- Proposal for testing methods
- Joint partner projects for specific applications

More than 40 involved AZL Partner Companies

Business Platform “High-Performance SMC”

Visit us at www.high-performance-smc.com

AZL Business Platforms were built in addition to the r&d activities of AZL workgroups and provide you with details on lightweight technologies: Get focused information on highlight lightweight technologies, find a broad range of service and products along the entire value chain, explore use cases to learn on present realized applications and technology solutions, contact your business partners for your individual lightweight solution.

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