Innovation Network
FutureCar

»Mobility Transformation«
How to prepare solutions and organizations for change

Network Phase VII – 2023/2024
Fraunhofer Institute for Industrial Engineering IAO
Profile of the institute and its areas of research

Fraunhofer Institute IAO 1981
University of Stuttgart IAT 1991
Founded

Prof. Dr.-Ing. Prof. e.h. Wilhelm Bauer
Univ.-Prof. Dr. rer. oec. habil. Katharina Hölzle
Univ.-Prof. Dr.-Ing. Oliver Riedel
Apl. Prof. Dr.-Ing. habil. Anette Weisbecker
Dr.-Ing. Florian Herrmann
Management board

Numbers in 2021:
- 545 Research projects
- 178 Scientific publications
- 832 Scientific presentations
- 647 Employees
- 42.1 M€ finance volume
- 230 Project partners

Digital Business
Service and Human Resources Management Systems
Mobility and Innovation Systems
Cognitive Engineering and Production
Organisational Development and Work Design
Responsible Research and Innovation
Smart Energy and Mobility Solutions
Human-Technology-Interaction
Cognitive Service Systems
Urban Systems Engineering

FutureCar Slide 2 © Fraunhofer IAO
The Innovation Network FutureCar in a nutshell
A platform for joint and pre-competitive research on mobility related technologies and trends

- Support in understanding and solving the challenges of a transforming mobility sector
- Organisation and content by Fraunhofer and external experts
- Three conferences per year plus additional services

Industry pain points

Transformation of the mobility sector
- New vehicle technologies
- New market players
- Increasing complexity
- High uncertainty

Innovation in mobility pre-development
- Need of innovative idea generation
- Specific and unknown user needs
- Need of open mindset and external input

Solutions and benefits through FutureCar

Future technology and trend scouting
- Identification of new technologies and trends
- Validation of newly arising technologies
- Providing a knowledge lead

Strength through collaboration
- Bring together different players for new links and contacts
- Identification of new partnerships
- Exchange of opinions and collaborative learning

Gateway to Fraunhofer-Gesellschaft
- Gateway to the research world and scientific insights
- Conjoint writing of funding applications
- Support in research and development
Innovation Network FutureCar
A platform for joint research and pre-competitive dialogue

- Discussion of topics and ideas which are ahead of corporate R&D programs
- Open exchange of opinions leading to a common understanding of early stage technologies
- Meeting platform for like-minded innovators on a multidisciplinary and cross-company basis
Future vehicles are highly influenced by the »CAE« technological drivers
As known from previous FutureCar phases, technology trends form the core of activities

- The exit from fossil fuels will require sophisticated solutions for future vehicles with **environmentally friendly drive trains**
- **Connectivity and data-based services** will enable the transformation towards fully digitized vehicles of the future
- **Increasing automation** will change future vehicles as well as the entire mobility ecosystem
- Within this context, future mobility solutions will be implemented in **integrated, new hardware, software, and services architectures**
Topics in FutureCar Phase VII »Mobility Transformation«
Core automotive technologies in the changing mobility sector

**Component-Layer**
Innovative technology, new materials as well as components with smart functionality remain to be a major driver for future mobility solutions.

**Vehicle-Layer**
Vehicles are no longer understood as an assembly of parts but rather a complex technical system of hardware, software, and services with respective architectures.

**Ecosystem-Layer**
With vehicles being turned into smart mobility solutions, more attention must be paid to interdependencies within the ecosystems they are deployed in.

**Competencies**
Transformation is not possible without gaining new knowledge and preparing employees for changing fields of activity.

**Processes**
Interdisciplinary and agile development as well as production of integrated product-service systems require appropriate processes and methodologies.

**Value Creation**
New possibilities of mobility data monetization and higher service orientation lead to new ways of generating revenue both independently and with partners.
Transformation of Solutions
Future mobility solutions as innovative product service combinations and ecosystem constituents

Component-Layer
Innovative technology, new materials as well as components with smart functionality remain to be a major driver for future mobility solutions

Vehicle-Layer
Vehicles are no longer understood as an assembly of parts but rather a complex technical system of hardware, software, and services with respective architectures

Ecosystem-Layer
With vehicles being turned into smart mobility solutions, more attention must be paid to interdependencies within the ecosystems they are deployed in

Slide 7
© Fraunhofer IAO
Transformation of Organizations
Change can only happen if we adapt our ways of developing new mobility solutions

**Competencies**
Transformation requires gaining new knowledge, transforming the entire workforce and preparing employees for changing fields of activity

**Processes**
Interdisciplinary and agile development as well as production of integrated product-service systems require appropriate processes and methodologies

**Value Creation**
New possibilities of mobility data monetization and higher service orientation lead to new ways of generating revenue both independently and with partners
FutureCar Phase VII
Dedicated conferences on technologies and trends within mobility transformation

- A total of six two-day network conferences are core elements of the Innovation Network FutureCar Phase VII
- Each conference focuses on one main topic, additionally taking into account the respective aspects of the other transformation area
- Naturally, automotive core technologies will be the backbone of all FutureCar conferences
FutureCar Network Conferences
The core elements of FutureCar Innovation Network

- Two-day network conferences on versatile topics in changing locations
- The broad program provides insights in different company and research labs for a cross-company exchange.
- During the conferences there is time for in-depth discussions and networking.

Guided Tours
- We visit and experience R&D centers, labs, and creative workspaces.
  - Faurecia R&D Center, Hagenbach
  - Lotus Tech Innovation Centre, Raunheim
  - BMZ Battery Plant, Hanau
  - e.GO Prototype Factory, Aachen
  - Mobility Innovation Lab, Fraunhofer IAO

Examples from previous FutureCar phases

Presentations
- We present and discuss current and relevant network topics.
  - Fraunhofer IAO keynotes as impulses and discussion starters
  - State of the art research insights by other Fraunhofer Institutes
  - Presentation of innovative ideas and concepts from industry speakers
  - Start-up pitches by selected automotive entrepreneurs

Workshops
- We conjointly work in group and creativity workshops.
  - Brainstorming of new project ideas
  - Elaboration of project proposals
  - Discussion of current issues in automotive industry
  - Collaborative development of future network topics and fields of interest
Contact us!
We look forward to exchanging

Fraunhofer Institute for Industrial Engineering IAO
Mobility and Innovation Systems
Nobelstr. 12
70569 Stuttgart
Germany

www.muse.iao.fraunhofer.de
www.iao.fraunhofer.de

Sebastian Stegmüller
Director of Mobility and Innovation Systems
Sebastian.Stegmueller@iao.fraunhofer.de
+49 (0) 711 / 970 2320

Maximilian Werner
Project Manager FutureCar
Maximilian-Jakob.Werner@iao.fraunhofer.de
+49 (0) 711 / 970 2307