
FRAUNHOFER IWU and AiF invite you

CORNET Monitoring Meeting
Partnering Event

Monday, November 28, 2011
Tuesday, November 29, 2011



OUTLINE

1. Introduction and Overview
2. Fraunhofer IWU as a part of the Fraunhofer Gesellschaft
3. Leading projects of Fraunhofer IWU meets the Fraunhofer Strategy „Resource Efficient Production“

innovation for SME

transnational funding opportunities for European SME

1 Monitoring Meeting, November 28, 2011

AGENDA

12:30 *Registration of participants*

13:30 Welcome Torsten Münch, Fraunhofer IWU

13:45 Introduction CORNET Almut Miebach, AiF F-T-K GmbH

Presentation of CORNET projects - Progress, Collaboration Aspects,
Lessons learned

14:00 AIP-Competence Platform Kajetan Müller, Fraunhofer IVV

14:30 CrabLacs Manuel Schiel, TU Braunschweig

15:00 *Coffee Break*

15:20 CureColour Wolfgang Danzl, Fraunhofer IVV

15:50 PrintIP Irene Pollex, PTS

16:20 Hybritex Anja Schuman, STFI

16:45 Guided Tour Experimental Plants Fraunhofer IWU Dresden

18:30 *Mulled Wine Reception*
Restaurant Barococo, Altmarkt 10, 01067 Dresden

20:30 *Dinner*
Watzke Brauereiausshank, Hauptstraße 1, 01097 Dresden

1 Partnering Event, November 29, 2011

Present your project ideas – find partners!

AGENDA

- 9:00 *Registration of participants*
- 10:00 Welcome Torsten Münch, Fraunhofer IWU
- 10:05 CORNET and EraSME calls for proposals – principles and conditions Almut Miebach AiF F-T-K GmbH
- 10:20 Best Practice example CORNET project Jean-Yves Escabasse, PTS
- 10:30 FP 7 Research for the benefit of SME - Introduction Bernd Meyer, ZENIT
- 10:40 Elevator Pitch All participants
5 minutes presentations of project ideas or cooperation offers
- 12:15 *Networking Lunch*
- 13:00 Continuation Elevator Pitch All participants
- 14:30 Partnering session - Work out project ideas and draft projects All participants in working groups
- 16:00 Closure

1 The Fraunhofer-Gesellschaft



The Fraunhofer-Gesellschaft undertakes applied research of direct utility to private and public enterprise and of wide benefit to society.

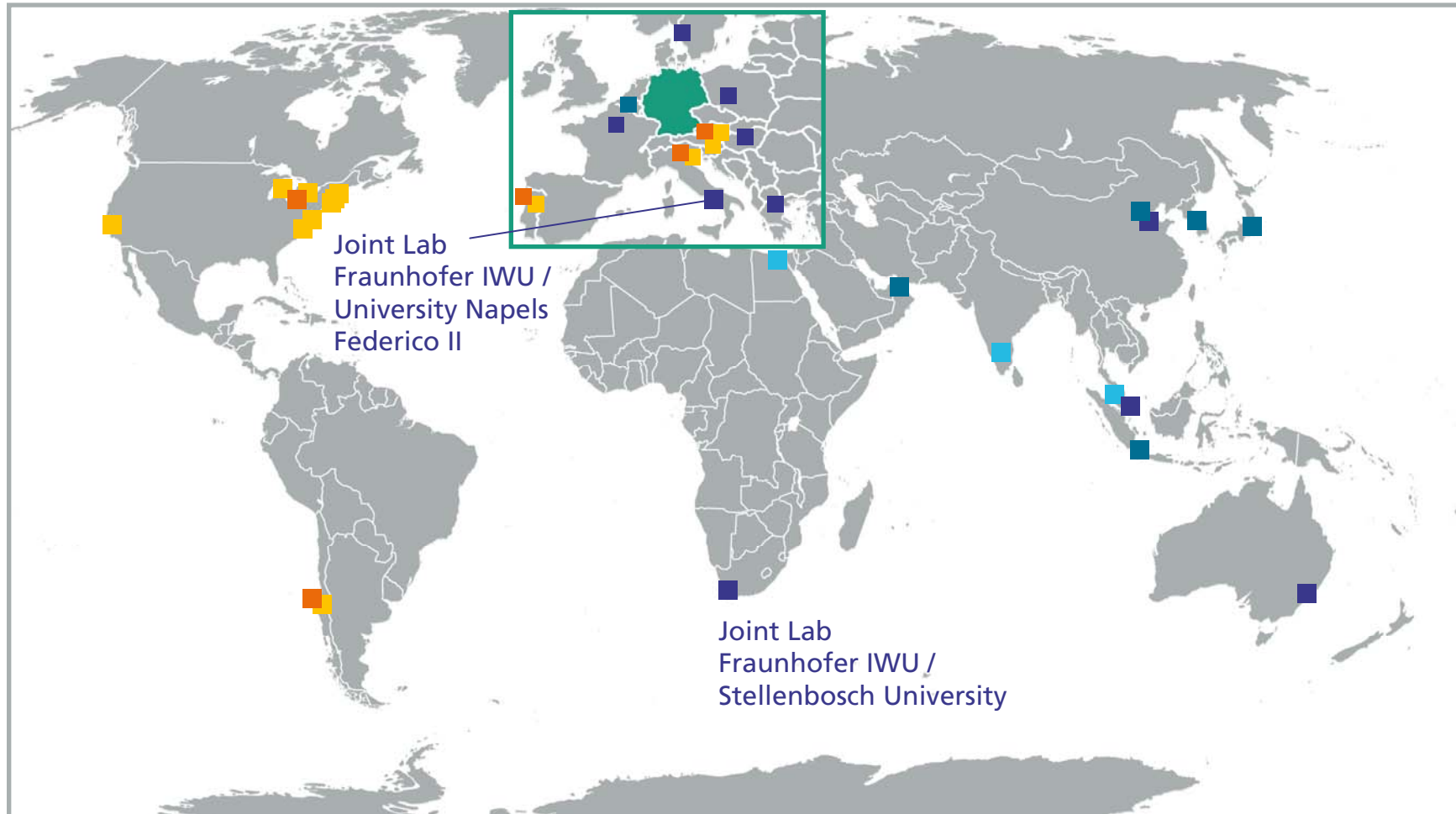
Our Customers:

- Industry
- Service sector
- Public administration

1 Fraunhofer is the largest organization for applied research in Europe

- More than 80 research institutions, including 60 Fraunhofer institutes
- More than 18,000 employees, the majority educated in the natural sciences or engineering
- An annual research volume of 1.66 billion euros, of which 1.4 billion euros is generated through contract research.
 - 2/3 of this research revenue derives from contracts with industry and from publicly financed research projects.
 - 1/3 is contributed by the German federal government and the *Länder* governments in the form of institutional financing.
- International collaboration through representative offices in Europe, the US, Asia and the Middle East

1 Fraunhofer worldwide



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- Fraunhofer subsidiary
- Fraunhofer Center
- Fraunhofer Project Center / strategic cooperation
- Fraunhofer Representative Office
- Fraunhofer Senior Advisor

2 The Fraunhofer IWU Locations in Germany

Facts and figures:

- founded on July 1st, 1991
- about 450 employees
- 28,5 million euro budget
- Project group in Augsburg since January 2009
- Project group in Zittau since October 2011



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2 The Fraunhofer IWU Industry in Saxony



A lot of world-famous technical and industrial inventions are initially based in Saxony: in the mining, in textile or machine tool industry as well as in manufacturing of cars.

Due to the leading role, in the past Chemnitz was also named as the "Saxon Manchester".

Fraunhofer IWU

CHEMNITZ UNIVERSITY OF TECHNOLOGY

High technology research cluster in Chemnitz / Saxony

2 Saxony – Fields of High Technology

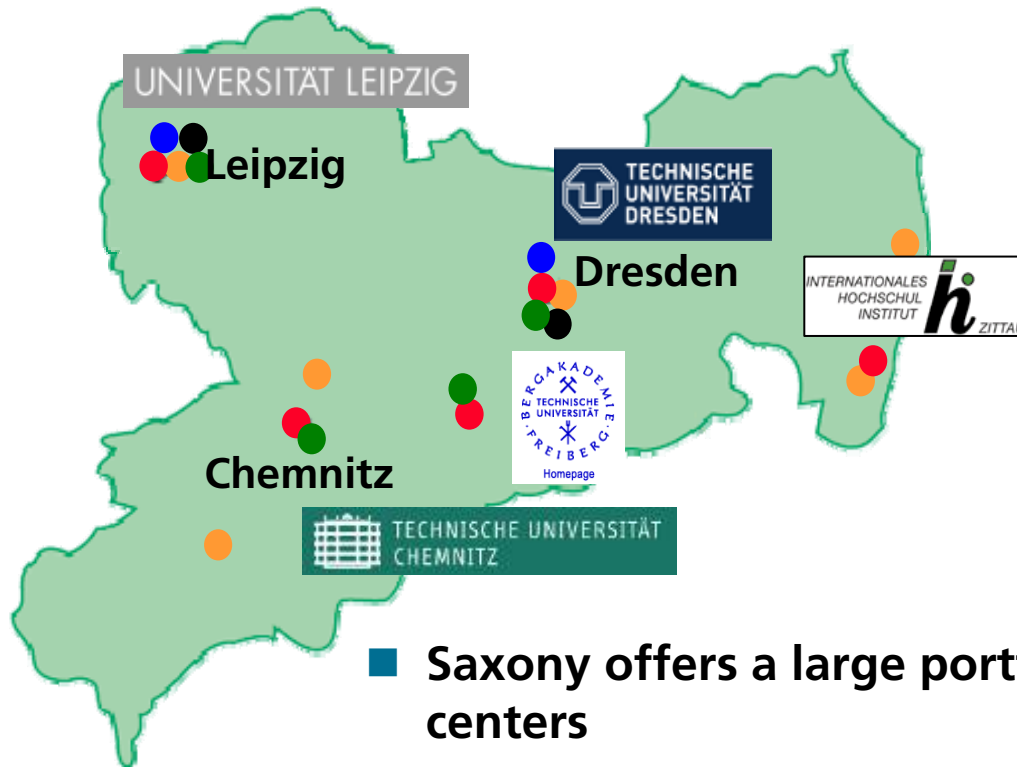
Main fields of High Technology

- Automotive industry
- Machine Tools & production engineering
- Microelectronics
- LifeSciences
- Environmental and energy technology



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2 Research & Development in Saxony



- **5 Universities**
- **5 technical universities for Technology & Industry**
- **15 Fraunhofer-Institutes**
- **6 Max-Planck-Institutes**
- **7 Leibniz-Institutes**

- **Saxony offers a large portfolio of universities and research centers**
- **numerous independent research institutes in collaboration with universities**
- **closed co-operation related to the industrial R&D**

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2 Saxony – Research and Industry in closed co-operation



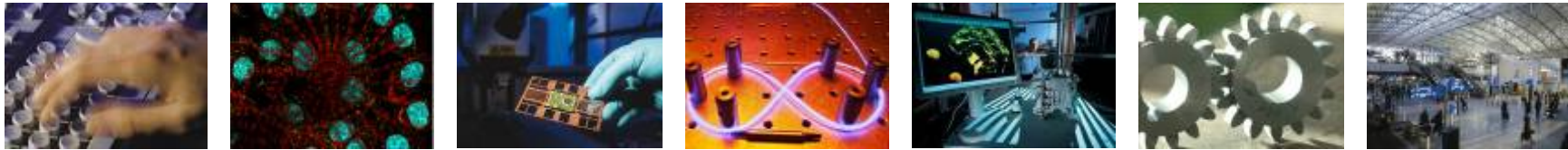
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2 Saxony – Research and Industry in closed co-operation



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2 IWU as part of the Fraunhofer-Gesellschaft



7 Groups:

- Information and Communication Technology
- Life Sciences
- Microelectronics
- Light & Surfaces
- **Production**
- Materials and Components – MATERIALS
- Defense and Security



Group Production (founded 1998)

- IFF Magdeburg
- IML Dortmund
- IPA Stuttgart
- IPK Berlin
- IPT Aachen
- **IWU Chemnitz / Dresden / Augsburg / Zittau**
- UMSICHT Oberhausen

2 The Fraunhofer IWU in Profile



Fields of expertise

- Machine Tools
- Mechatronics
- Cutting Technologies
- Forming Technologies
- System Technology

in close cooperation with

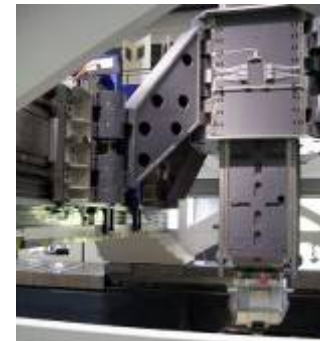
- Chemnitz University of Technology
- Fraunhofer-Gesellschaft
- Machine tool industry
- German and international automobile industry
- Ancillary industry (forming, cutting, tool and die making)

2 Core Competencies of Fraunhofer IWU (1)

Machine Tools

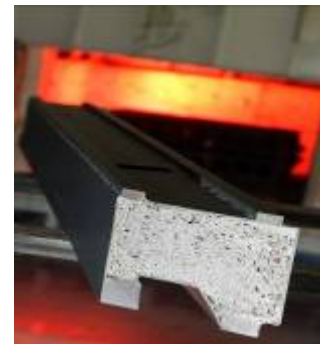
Machine tool and component design (forming and cutting)

- Concepts, function design, accuracy determined components
- Development of handling equipment, e.g. parallel kinematic applications
- Determination of properties, FEM calculation, Optimization of thermal behavior



Lightweight design

- Structure optimization, metal foam applications
- Generative manufacturing of lightweight structures



Hydraulic systems

- Equipment and drives planning
- Hydraulic simulation, Experimental testing

2 Core Competencies of Fraunhofer IWU (2)

Mechatronics

Machine tool control

- Mechatronic design, calibration methods
- Control of parallel kinematic machines, redundant machine tool axes
- Development and control of feed drive components



Data processing

- Video imaging, Classification algorithms

Adaptronics

- Application and optimization of active materials
- Design of sensor-actuator components
- Intelligent components
- Determination and optimization of acoustic behavior
- Medical applications
- Generative manufacturing of adaptronic components and implants



2 Core Competencies of Fraunhofer IWU (4)

Forming Technologies

Sheet metal forming

- Controlled deep drawing process
- Hydroforming
- Forming at high velocities
- Fine blanking
- Technology development / tool concepts
- Generative technologies

Bulk metal forming

- Forging, Prototype forging die
- Cross rolling, Spin extrusion
- High gear rolling

“interdisciplinary”

- Forming of alternative materials (highstrength steels and aluminum alloys, titanium, magnesium, patches...)
- Identification of specific forming parameters

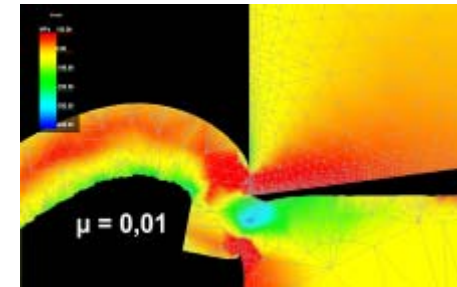


2 Core Competencies of Fraunhofer IWU (3)

Cutting Technologies

Process basis

- Modeling and simulation of cutting processes / optimization of cutting tools
- Design of modular tool systems
- Optimization of coating-substrate-systems
- Clamping of thinwalled workpieces



Experimental process and machine tool investigation

- Process monitoring
- Machine tool behavior

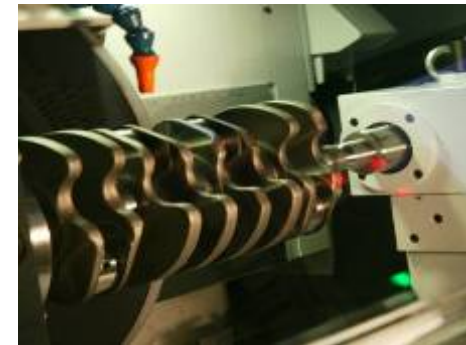


2 Core Competencies of Fraunhofer IWU (3)

Cutting Technologies

Process development

- Ultrasonic-assisted deep hole drilling
- Dry cutting (MQL)
- 5-axis milling, hard machining
- Optimization of process chains
- Process combinations / integration



Micro and precision processing

- Development of components and technologies
- Tools for microforming
- Microstructuring of surfaces
- Medical, optical and special automotive applications



2 Core Competencies of Fraunhofer IWU (5)

System Technology

Facility and component design

- Concepts for joining and assembling systems
- Development and optimization of function determined components as well as handling systems

Joining technologies

- Thermal joining technologies
- Joining by forming (development, modification and integration of technologies)
- Process monitoring

Assembling technique

- Weak point analysis, Process optimization, Databasis

E-Services

- Production data management
- Teleservice, Data mining



3 Fraunhofer Strategy „Resource Efficient Production“

Leading Projects



Fraunhofer-Future
**Green Powertrain
 Technologies**



Innovation
 Alliance
**Green Carbody
 Technologies**



Cluster of Excellence
eniPROD



Excellence Center
**Automobile
 Production**



Fraunhofer IWU
 Research Plant
**Resource Efficient
 Production**

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3 LEADING PROJECTS (2)

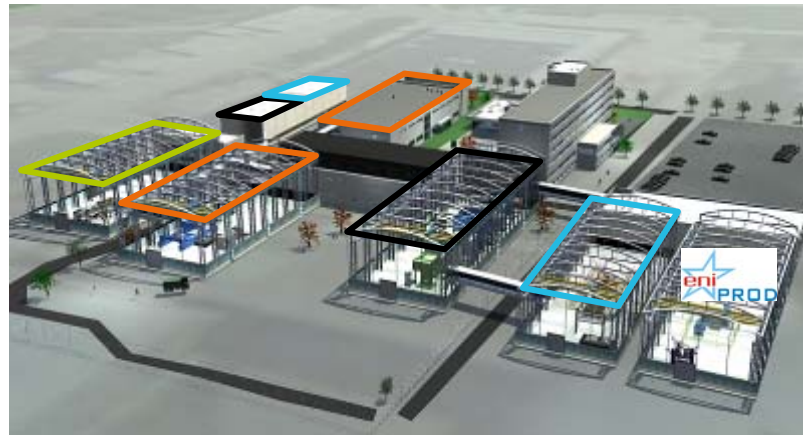
Innovation alliance „Green Carbody Technologies“



- Objective: resource efficient optimization of the process chain “Lacquered Car Body”
 - Reduction of energy
 - Saving of resources
- Partners:
 - Volkswagen (leading OEM), AUDI, Daimler
 - 60 companies (automotive supplier of OEM and steel industry)
 - 3 Fraunhofer Institutes
- Duration: 3 years (2009 – 2012)
- Total project budget ~ 30 M€
- General Management by Fraunhofer IWU

3 LEADING PROJECTS (5)

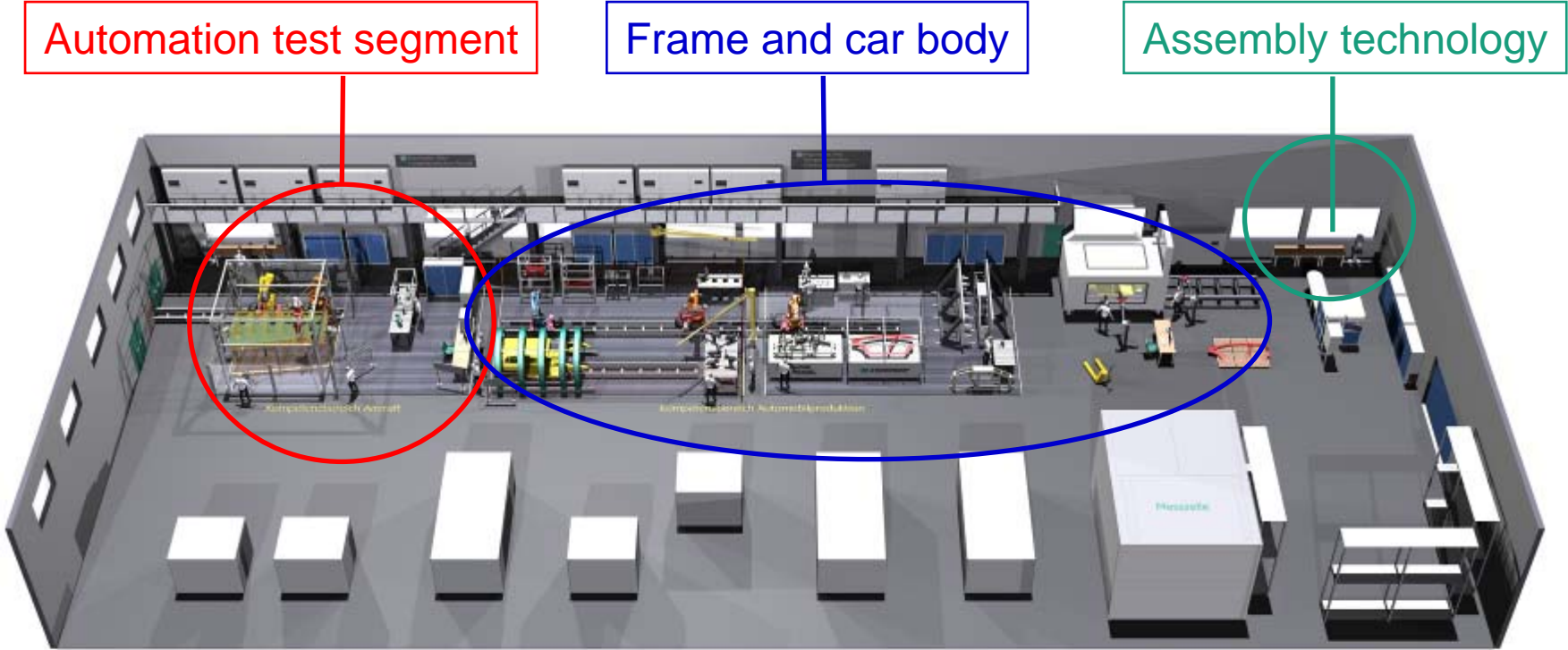
“Research Plant Resource Efficient Production”



- Objective: development of efficient technologies and systems
- Consisting of
 - Forming Technology Lab
 - Machine Tool Lab
 - Carbody Lab
 - Powertrain Lab
- Fraunhofer IWU Strategy
 1. Efficient production
 2. Total energy management
 3. Utilization of alternative energy sources

3 LEADING PROJECTS (5)

“Research Plant Resource Efficient Production”



Concept layout ideas for the research plant

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Activities in Nov 2011:

The future has been started !



**Thank You for your attention
and a successful meeting !**