



Baden-Württemberg
Ministry of Economic Affairs

Drive Technology

A cluster of drive technology players – key partners for engineering and automotive companies

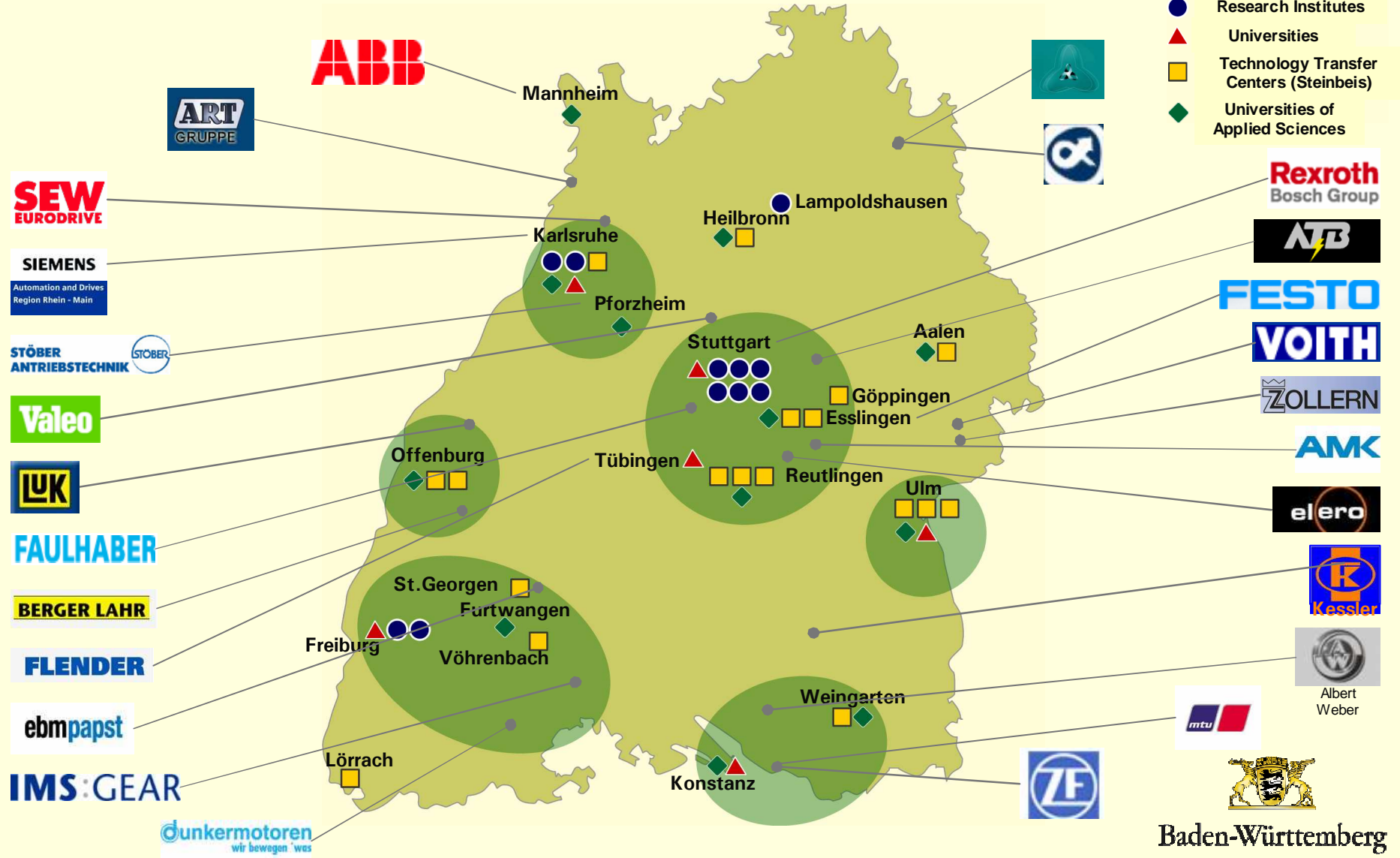
- The sales of companies specializing in mechanical and electrical drive technology have been growing at remarkable rates during the last years.
- Drive technology firms are important partners for the automotive and engineering industries. For example, in recent years, engineering companies have become increasingly interested in small motors - a topic which has greatly interested the automotive industry for quite some time.
- Baden-Württemberg is a prime location for drive technology:
 - Leading international players, such as ZF Friedrichshafen AG, SEW Eurodrive GmbH & Co.KG, and Voith Turbo GmbH & Co. KG, are situated in Baden-Württemberg.
 - Major non-German firms, such as Valeo, are also headquartered here.
- Baden-Württemberg is the ideal environment for companies operating in the drive-technology space: not only is there a high number of university faculties with a focus on mechatronics, mechanical and electrical engineering, there is also a wide range of specialized research institutes. What's more, the automotive and engineering industries in the region offer excellent market opportunities.



Regional Centers in Cluster Drive Technology

(Relevant research institutes, universities and examples of important enterprises)

- Research Institutes
- ▲ Universities
- Technology Transfer Centers (Steinbeis)
- ◆ Universities of Applied Sciences



Drive Technology – Selected Companies



Voith AG, Heidenheim an der Brenz; Voith Turbo GmbH & Co. KG, Heidenheim, Crailsheim
<http://www.voith.de>



MTU Friedrichshafen GmbH, Friedrichshafen
<http://www.mtu-friedrichshafen.com>



ZF Friedrichshafen AG, Friedrichshafen; ZF Bahntechnik GmbH, Friedrichshafen
<http://www.zf.com>



Drive Technology – Selected Companies



Bosch Rexroth AG, Stuttgart

<http://www.boschrexroth.com>



ABB AG, Mannheim

<http://www.abb.de>



FESTO AG, Esslingen

<http://www.festo.com>



SEW-EURODRIVE GmbH & Co. KG, Bruchsal

<http://www.sew.de>



Drive Technology – Selected Companies



LuK GmbH & Co. oHG, Bühl

<http://www.luk.de>



IMS Gear GmbH, Donaueschingen

<http://www.imsgear.de>



WITTENSTEIN AG, Igersheim

<http://www.wittenstein.de>

SIEMENS

Automation and Drives
Region Rhein - Main

Siemens AG Automation and Drives – Niederlassung Karlsruhe

<http://www.khe.siemens.com>



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Drive Technology – Selected Companies



Valeo Motoren- und Aktuatoren GmbH, Bietigheim-Bissingen

<http://www.valeo.de>



Zollern Vertriebs-GmbH & Co. KG, Herbertingen

<http://www.zollern.de>



Albert Weber GmbH, Markdorf

<http://www.weber-a.com>



Stöber Antriebstechnik GmbH & Co. KG, Pforzheim

<http://www.stoeber.de>



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Drive Technology – Selected Companies



ART Antriebs- und Regeltechnik GmbH, Hockenheim

<http://www.art-gmbh.de>



ebm-papst St. Georgen GmbH & Co. KG, St. Georgen

<http://www.ebmpapst.com>



elero GmbH, Beuren

<http://www.elero.de>



Alpha-Getriebetechnik GmbH, Igersheim

<http://www.alphagetriebe.de>



Drive Technology – Selected Companies

The logo for Flender, featuring the word "FLENDER" in bold, blue, uppercase letters on a white background.

Flender Tübingen GmbH, Tübingen

<http://www.flender.com>

The logo for Faulhaber, featuring the word "FAULHABER" in bold, blue, uppercase letters on a white background.

Dr. Fritz Faulhaber GmbH & Co. KG., Schönaich

<http://www.faulhaber-group.com>

The logo for Berger Lahr, featuring the words "BERGER LAHR" in bold, black, uppercase letters on a yellow background.

Berger Lahr GmbH & Co. KG, Lahr

<http://www.berger-lahr.de>

The logo for AMK, featuring the letters "AMK" in bold, blue, uppercase letters on a white background.

Arnold Müller GmbH & Co. KG, Kirchheim unter Teck#

<http://www.amk-antriebe.de>



Drive Technology – Selected Companies



ATB Antriebstechnik AG, Welzheim

<http://www.atb.de>



Alcatel SEL AG Dunkermotoren, Bonndorf

<http://www.dunkermotoren.de>

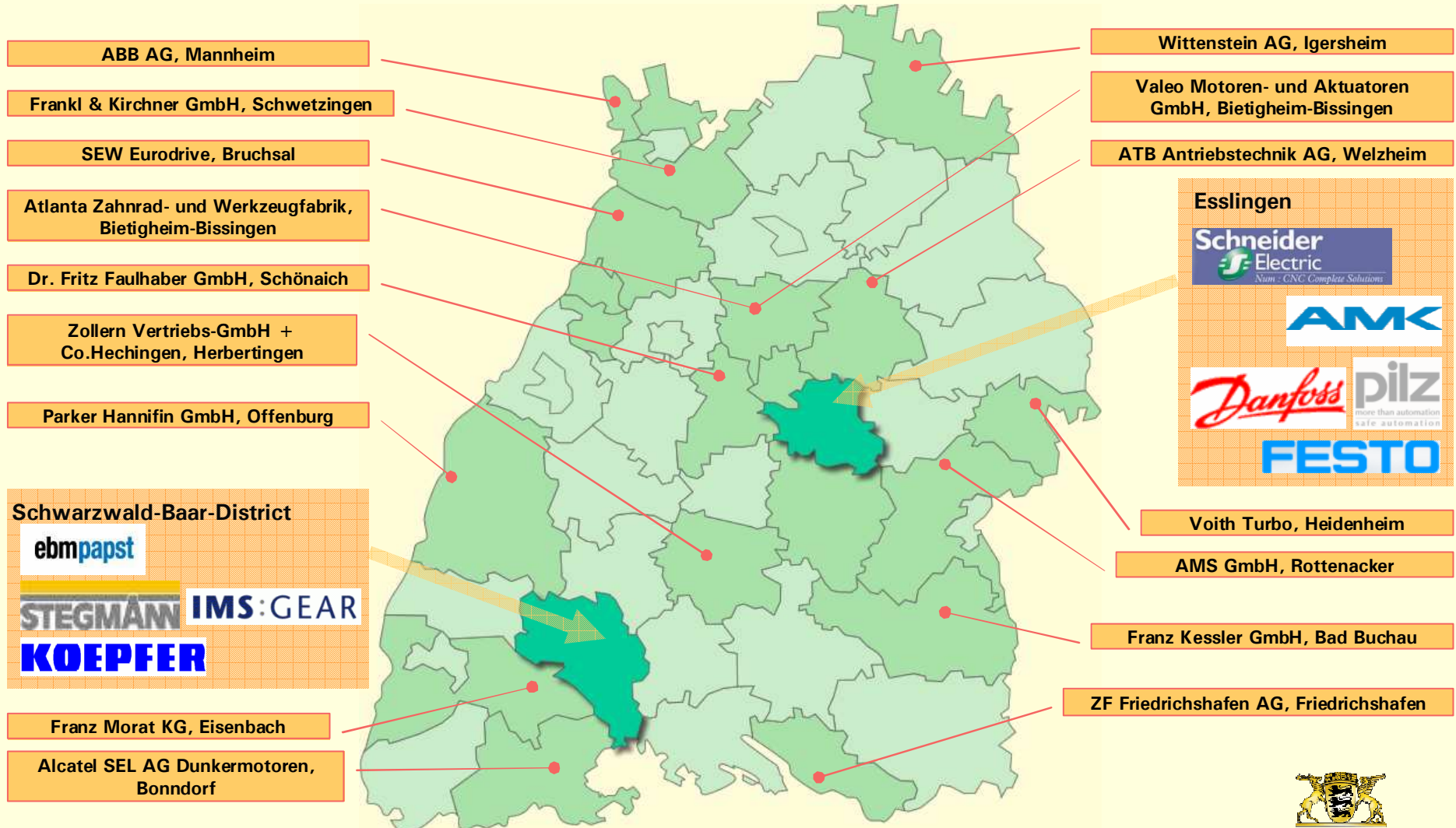


Franz Kessler GmbH, Bad Buchau

<http://www.franz-kessler.de>

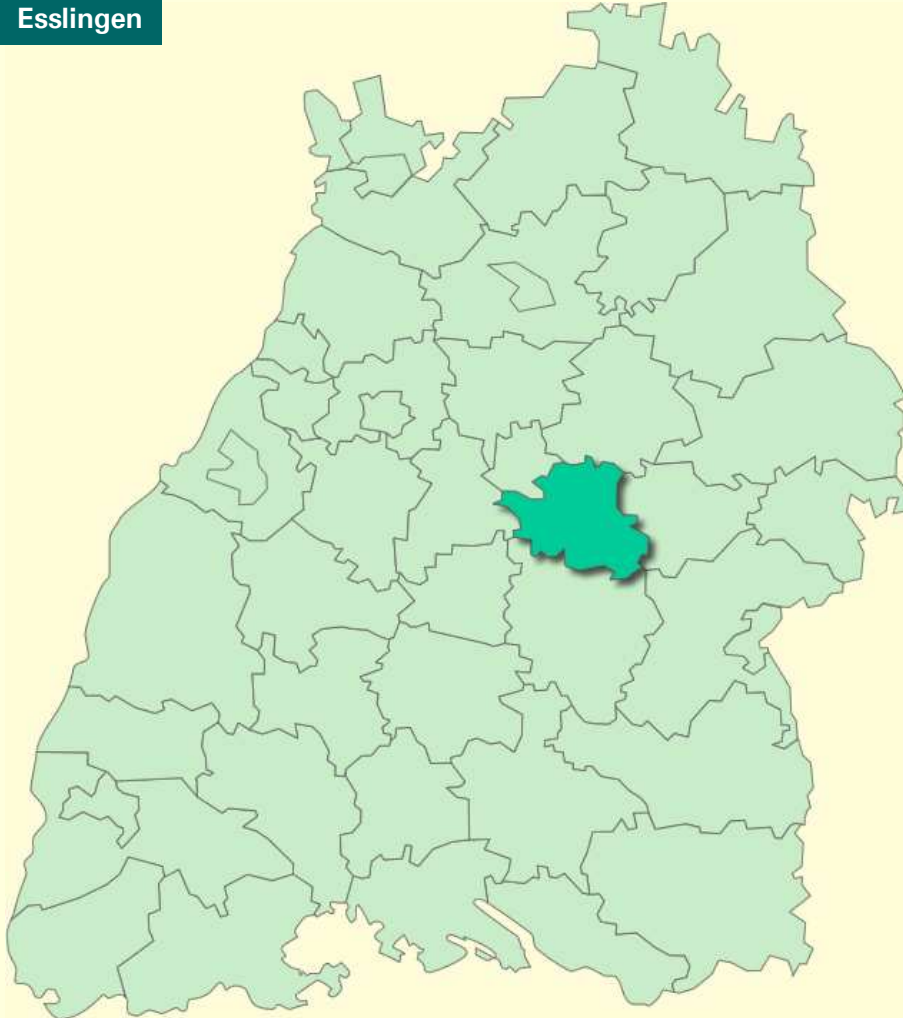


Drive Technology – Regional Centers – Selected Companies



Drive Technology – Regional Centers

Esslingen



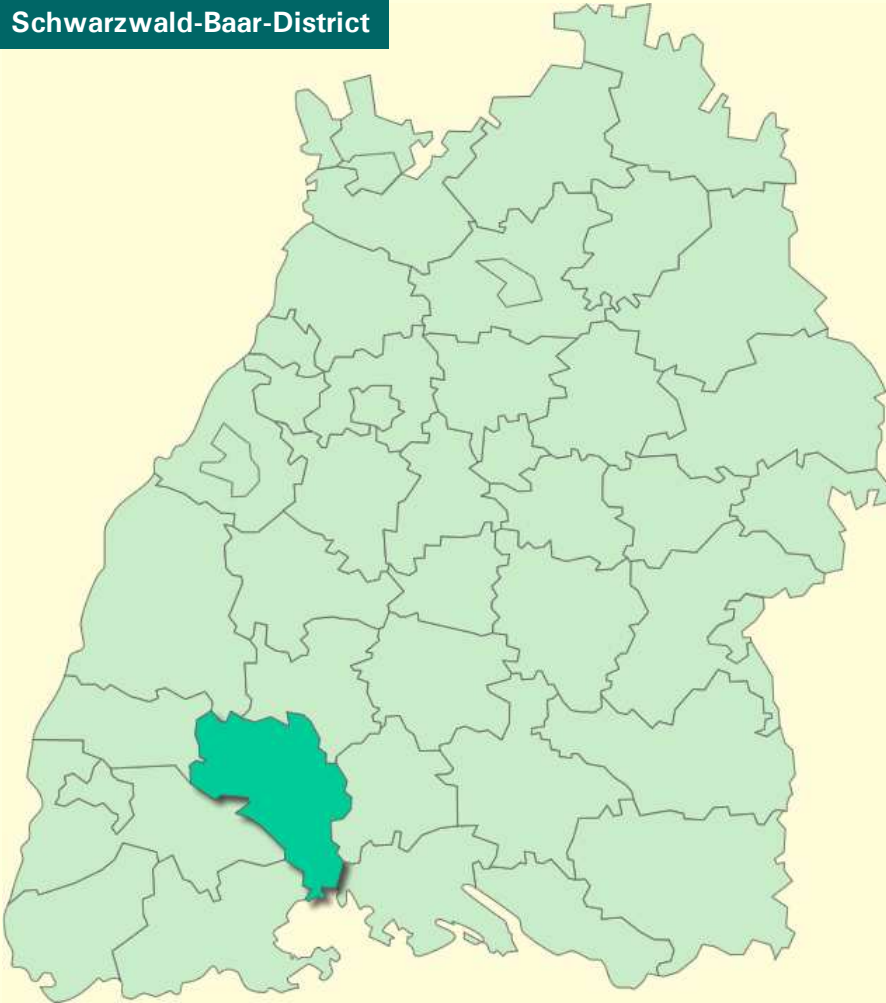
Esslingen:

- PILZ GmbH & Co. (Ostfildern)
- Ballard Power Systems AG (Kirchheim unter Teck)
- elero GmbH (Beuren)
- Arnold Müller GmbH & Co. KG (Kirchheim)
- Danfoss Bauer GmbH (Esslingen)
- Wilhelm Vogel GmbH Antriebstechnik (Oberboihingen)
- Spahr GmbH & Co. KG (Filderstadt)
- J. Stehle + Söhne AG (Aichwald)
- K. & A. Knödler GmbH Maschinenbau (Ostfildern)
- Dietz-electronic GmbH (Neuffen)
- NUM Güttinger GmbH (Ostfildern)
- Hans Bühler & Co. Inh. Kurt Giesler-Stiftung (Wernau)
- Behrend Paul (Leinfelden-Echterdingen)
- Ketten Fuchs GmbH (Neckartenzlingen)
- ATM Antriebstechnik Maroldt (Wernau)
- FESTO AG (Esslingen)
- elektrotechnik + automation Ulrich Brodbeck GmbH (Aichtal)



Drive Technology – Regional Centers

Schwarzwald-Baar-District

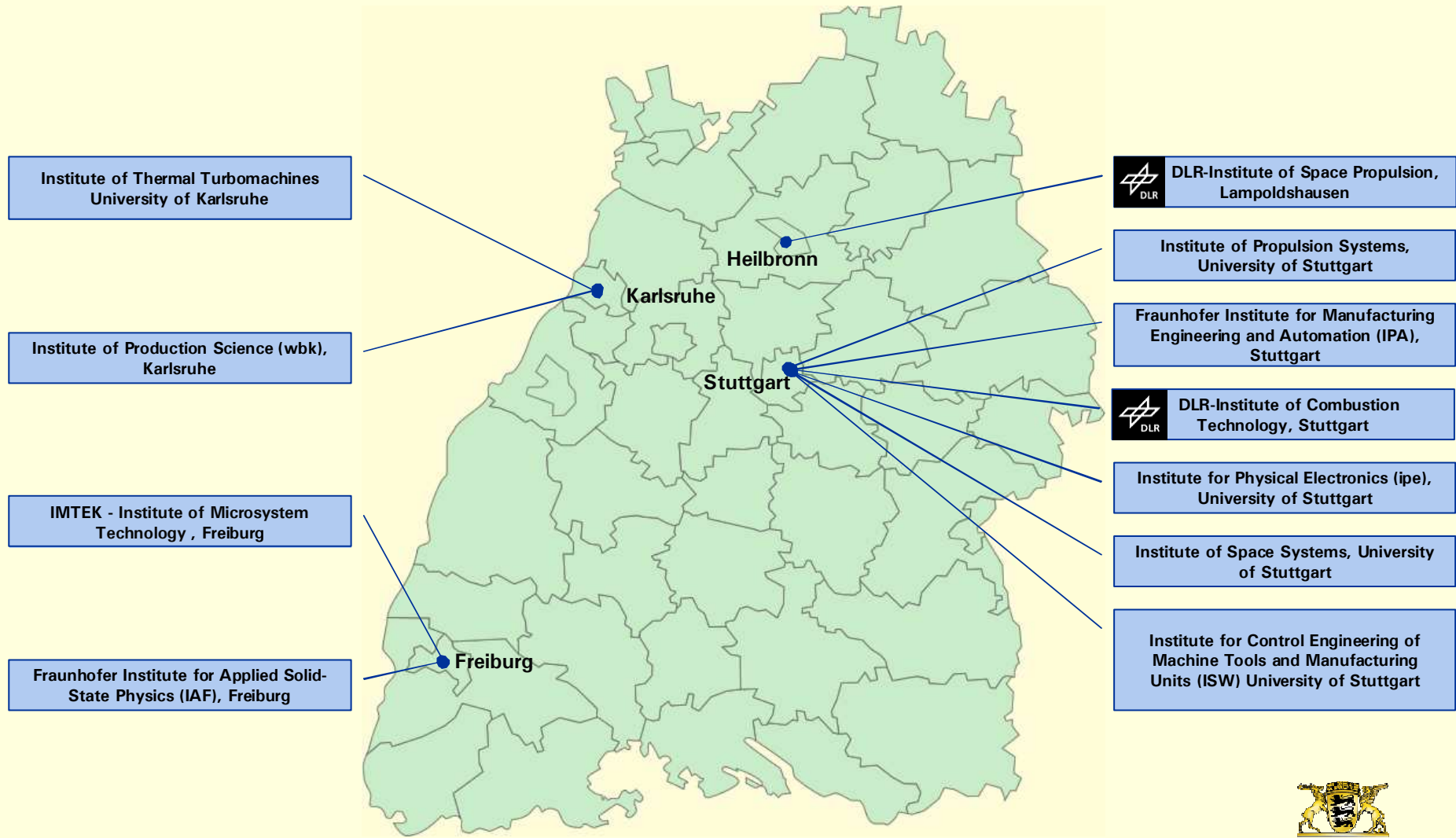


Schwarzwald-Baar-Kreis:

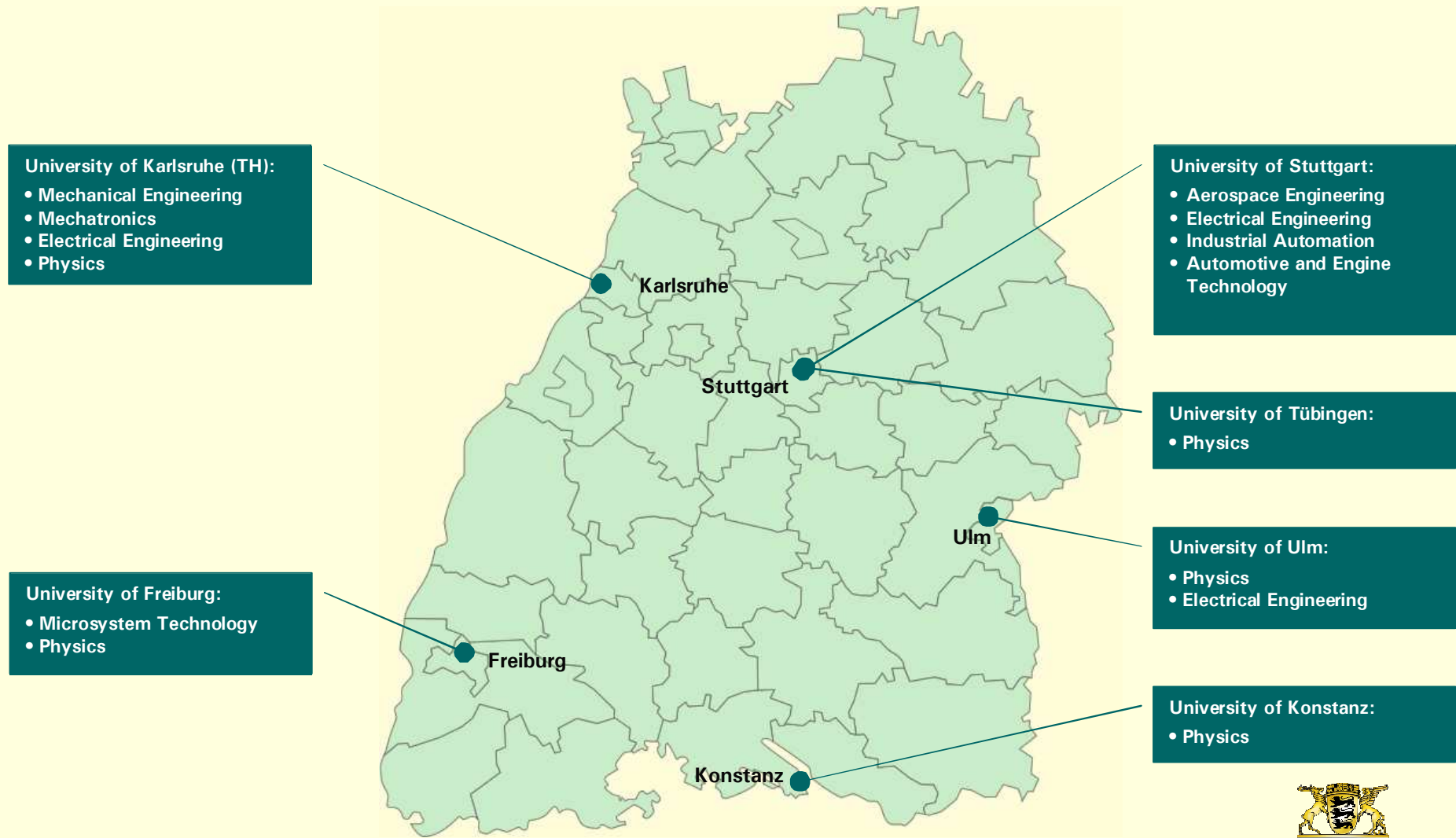
- ebm-papst St. Georgen GmbH & Co. KG (St Georgen)
- Max Stegmann GmbH (Donaueschingen)
- E. Dold & Söhne KG (Furtwangen)
- Maico Elektroapparate-Fabrik (Villingen-Schwenningen)
- Jos. Koepfer & Söhne GmbH (Furtwangen)
- Weißer und Griebhaber GmbH (Mönchweiler)
- G.A.S. Gesellschaft für Antriebs- und Steuerungstechnik mbH (St. Georgen)
- Nottebohm e.K. (Donaueschingen)
- Acus Drive System GmbH (Donaueschingen)
- ABP-Antriebstechnik (St. Georgen)
- IMS Gear GmbH (Donaueschingen)
- Gefeg (Gosheim)



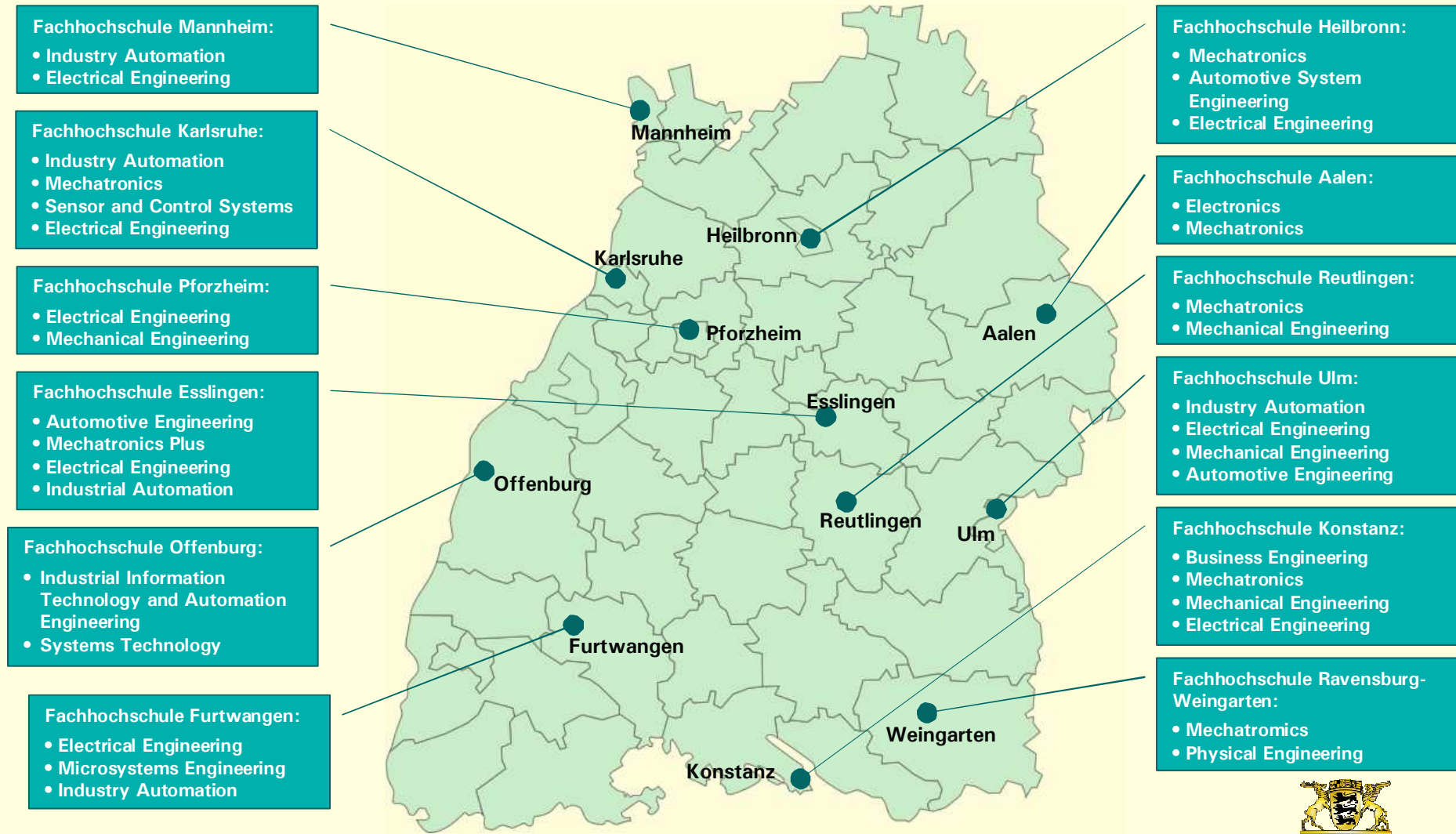
Drive Technology – Research Institutes



Drive Technology - Relevant Study Courses (Universities)



Drive Technology - Relevant Study Courses (Universities of Applied Sciences/Fachhochschulen)



Drive Technology – Steinbeis Technology Transfercenters (STZ)



Drive Technology - Research



Fraunhofer Institute for Applied Solid-State Physics (IAF), Freiburg

<http://www.iaf.fraunhofer.de>

The IAF is a leading research center in the field of III-V compound semiconductors and their applications in nano-, micro- and optoelectronics. The IAF has the complete process technology from epitaxy to mounting and packaging, from the semiconductor wafer to integrated circuits and modules.



Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), Stuttgart

<http://www.ipa.fhg.de>

Solutions for organizational and technological functions in the production sector of industrial companies form the main areas of research and development work at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA. The Fraunhofer IPA achieves this objective by developing, testing and piloting methods, components and equipment, through to the implementation of complete manufacturing systems and plant. This majority of this work is carried out under contract to industry. The institute also works on projects funded under public-sector research programs.



DLR Institute of Space Propulsion, Lampoldshausen

<http://www.la.dlr.de/ra>

The Institute of Space Propulsion is separated into three departments: technology, engineering and testing. Research is conducted into structural and fluid mechanics, rocket boosters, ramjets, testing equipment, control and instrumentation. The institute also provides research and technology support.



Drive Technology - Research



DLR Institute of Combustion Technology, Stuttgart

<http://www.dlr.de/vt>

The Institute of Combustion Technology develops design principles for industrial combustion processes. Particular emphasis is placed on reducing harmful substances such as soot, nitrogen oxides and unburned hydrocarbons. The institute also conducts research into unsteady combustion, increasing the reliability of the combustion process, and fuels. Its main areas of expertise are: (1) combustion test facilities, (2) laser measurement technology and analytics, (3) modeling and simulation.



Institute for Physical Electronics (ipe), University of Stuttgart

<http://www.ipe.uni-stuttgart.de>

The Institute for Physical Electronics (ipe) conducts research and offers courses in micro and optoelectronics, thin-film technology and semiconductor physics. Currently, the center is developing new concepts and identifying new applications for photovoltaics and large-area electronics (macro electronics).



IMTEK - Institute of Microsystem Technology , Freiburg

<http://www.imtek.de>

The Institute of Microsystem Technology (IMTEK) at the University of Freiburg is unique in Europe. The scientific scope of the institute encompasses nearly all technical fields relevant to the highly interdisciplinary world of microsystem technology. Through the depth and range of our activities, the IMTEK is one of the internationally leading academic research departments in this dynamic and innovative field.



Drive Technology - Research

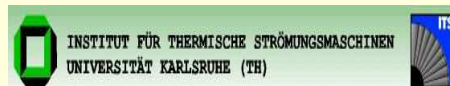


Institute of Production Science (wbk), Karlsruhe

<http://www.wbk-ka.de>

With almost 80 employees the Institute of Production Science is one of the largest institutes at the University of Karlsruhe (TH) and an established part of the mechanical engineering faculty. Its main activities are centered on education and application oriented research of manufacturing engineering, machine tools, handling technology and production systems.

The broad range of modern equipment provides the science staff and students with the perfect environment to accomplish their theoretical and experimental research projects. Beyond the technology region of Karlsruhe the wbk also work together with industrial partners finding solutions for diverse problems within production technology and developing new methods and processes for tomorrow's production procedures.



Institute of Thermal Turbomachines, University of Karlsruhe

<http://www.its.uni-karlsruhe.de>

The Institute of Thermal Turbomachines deals with the variety of issues arising from the thermodynamic process of gas turbines with its high pressures and temperatures. The key aspects of research activities are strongly associated with gas turbine components such as combustion chamber, turbine, rotor and bearing chamber. Thus, in a broader sense, they are concerned with flows in complex geometries taking especially into account the phenomena of two phase flow, chemical reaction, turbulent mixing, wall cooling methods and heat transfer as well as the interaction of flow and structure. In this regard new numerical and theoretical approaches are developed and sophisticated experimental investigations are carried out. The results obtained enter directly into new designs.



Drive Technology - Research



Institute for Control Engineering of Machine Tools and Manufacturing Units (ISW) University of Stuttgart

<http://www.isw.uni-stuttgart.de>

The Institute for Control Engineering of Machine Tools and Manufacturing Units was established in 1965. The number and variety of research and development fields of the institute has steadily increased. The main fields are centred around the development and application of control technology and other computer supported methods for automation. The division of the institute in 4 departments and 9 groups reflects the variety of activities. The Institute caters for both basic research as well as for the application-orientated development activities, which has led to successful cooperation with both public and industrial project partners.



Institute of Propulsion Systems, University of Stuttgart

<http://www.ila.uni-stuttgart.de>

As well as purely technical questions, the institute also handles key cross-industry challenges in the aircraft engine and turbomachines industry (for example, technical and commercial aspects of development, production and operation). Drawing on these comprehensive skills, the institute develops customer-oriented solutions.



Institute of Space Systems (IRS), University of Stuttgart

<http://www.irs.uni-stuttgart.de>

The IRS conducts research into space systems, space propulsion, and space applications. Particular attention is given to the development of small satellites and electric space propulsion systems, instrument payloads, and space-station design. What's more, the institute examines the behavior of spaceships entering the earth's atmosphere (or the atmosphere of other planets) through theoretical/numerical simulations and by performing experiments. The IRS also specializes in the development of re-entry sensors, the optimization of space missions and flight paths, multispectral remote sensing of the atmosphere and of the earth's surface, as well as infrared astronomy.

