



Baden-Württemberg
Ministry of Economic Affairs

Automation

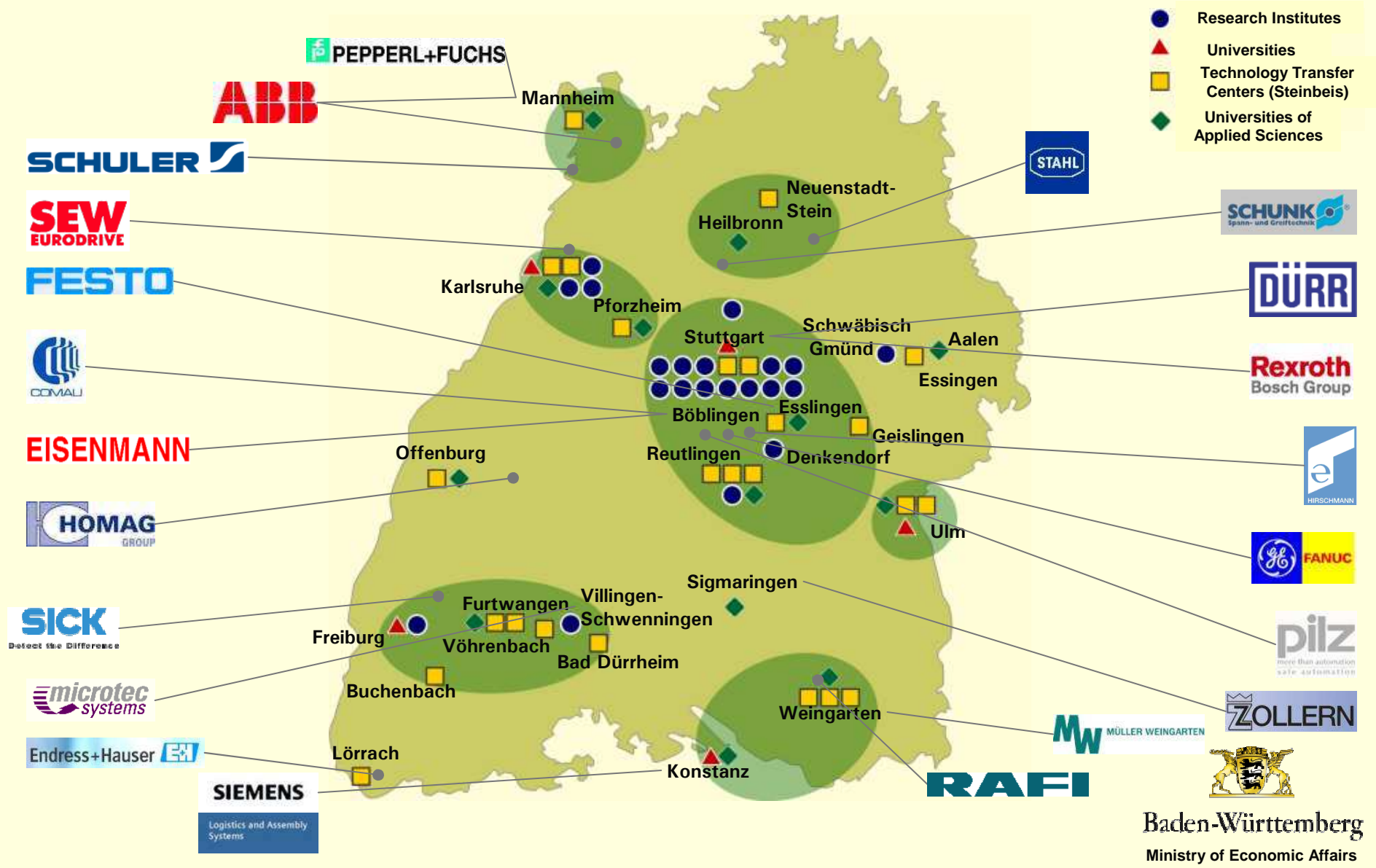
Baden-Württemberg – home to leaders in automation

- Thanks to advances in automation, businesses are able to master the challenges of changing markets. Zero-defect quality, and flexible and customer-specific configuration of high-volume products, are essential for companies who want to compete successfully in world markets.
- Sales generated by German companies specializing in robotics and automation have more than tripled since the mid-nineties. What's more, market segments for solutions such as industrial imaging or industrial software are enjoying double-digit annual growth across the world.
- Baden-Württemberg is a key center of automation technology:
 - Market leaders, such as Pepperl + Fuchs GmbH, FESTO AG, and Sick AG, are headquartered in Baden-Württemberg.
 - The state is also home to major non-German companies, such as FANUC and Comau.
- Baden-Württemberg is one of the world's most attractive locations for automation players: the large number of manufacturing companies in the region offers excellent market opportunities. In addition, there's a wide range of specialized university courses, and excellent research and technology-transfer facilities.



Regional Centers in Cluster Automation

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



Automation – Selected Companies



Siemens AG Postal Automation, Konstanz

<http://www.logistics-assembly.siemens.com>



SEW-EURODRIVE GmbH & Co. KG, Bruchsal

<http://www.sew.de>



Durr AG, Stuttgart

<http://www.durr.com>



Homag Group AG, Schopfloch

<http://www.homag.de>



Automation – Selected Companies



Bosch Rexroth AG, Stuttgart

<http://www.boschrexroth.com>



ABB AG, Mannheim; ABB Stotz-Kontakt GmbH, Heidelberg

<http://www.abb.de>



FESTO AG, Esslingen

<http://www.festo.com>



Pepperl + Fuchs GmbH, Mannheim

<http://www.pepperl-fuchs.de>



Automation – Selected Companies



R. Stahl AG, Waldenburg

<http://www.stahl.de>



Sick AG, Waldkirch

<http://www.sick.com>



Zollern Vertriebs-GmbH & Co. KG, Sigmaringen

<http://www.zollern.de>



Müller Weingarten AG, Weingarten

<http://www.mueller-weingarten.de>



Automation – Selected Companies



Comau Deutschland GmbH, Böblingen

<http://www.comau.com>



Schuler SMG GmbH & Co. KG, Waghäusel

<http://www.schuler.de>



Rafi GmbH & Co. KG, Berg

<http://www.rafi.de>



Microtec Systems GmbH, Villingen-Schwenningen

<http://www.microtec.de>



Baden-Württemberg
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Automation – Selected Companies



Hirschmann Electronics GmbH & Co. KG, Neckartenzlingen

<http://www.hirschmann.de>



Endress + Hauser Messtechnik GmbH + Co. KG, Weil am Rhein

<http://www.endress.com>

EISENMANN

Eisenmann Maschinenbau KG, Böblingen

<http://www.eisenmann.de>



FANUC Robotics Deutschland GmbH, Neuhausen Auf den Fildern

<http://www.fanuc.com>



Automation – Selected Companies



PILZ GmbH & Co., Ostfildern

<http://www.pilz.com>



MLog Logistics GmbH (früher MAN Logistics), Heilbronn

<http://www.man-logistics.de>

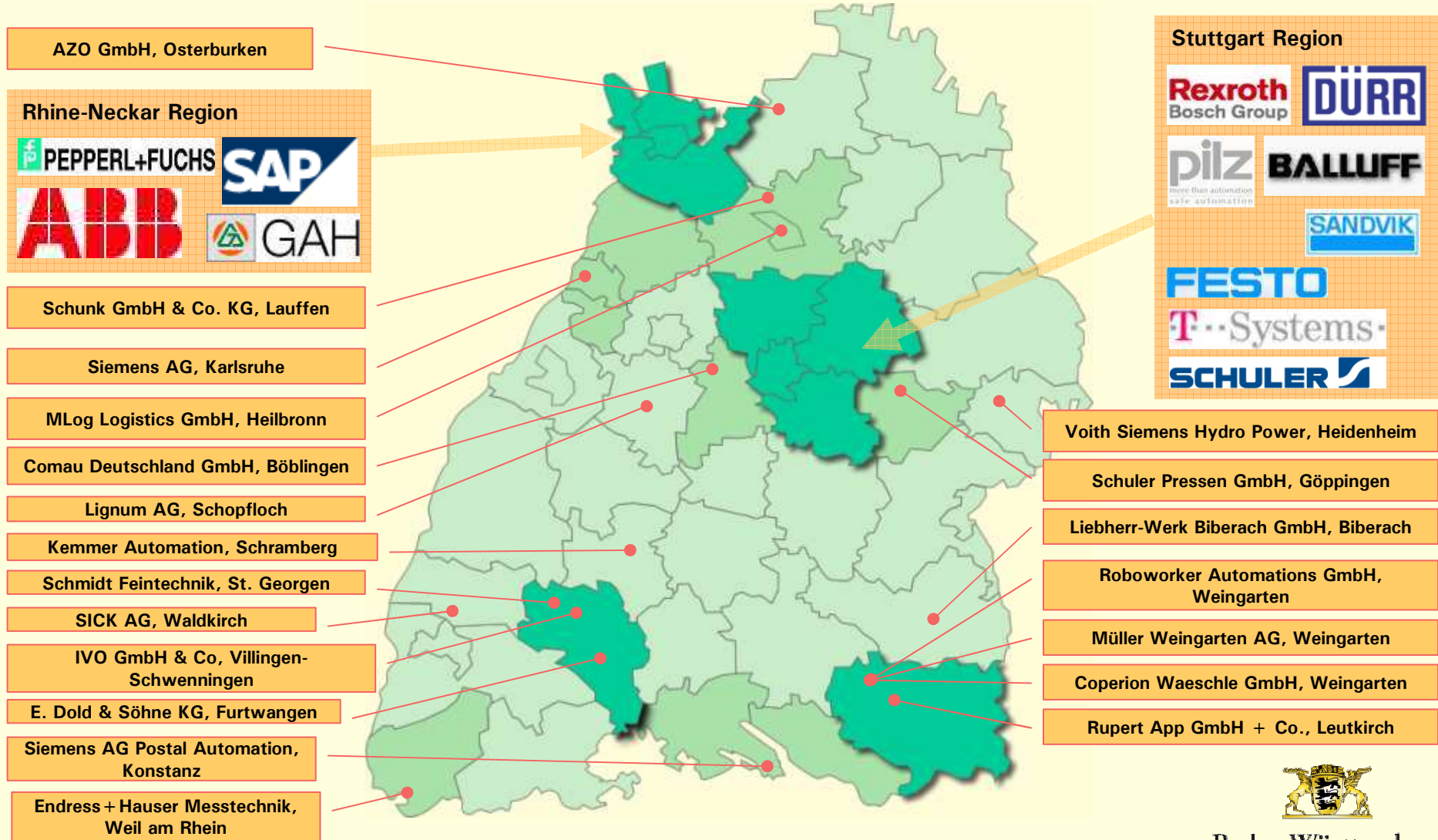


Schunk GmbH & Co. KG, Lauffen

<http://www.schunk.com>

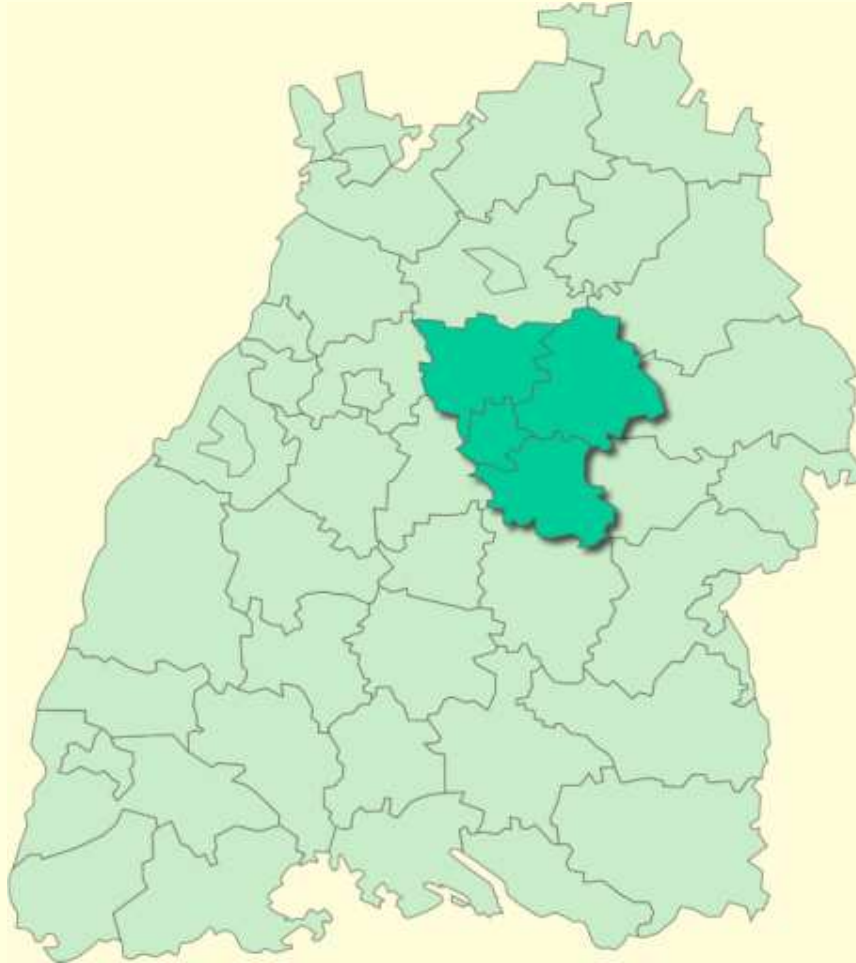


Automation – Regional Centers – Selected Companies



Automation – Regional Centers

Stuttgart, Esslingen, Ludwigsburg, Rems-Murr-Kreis



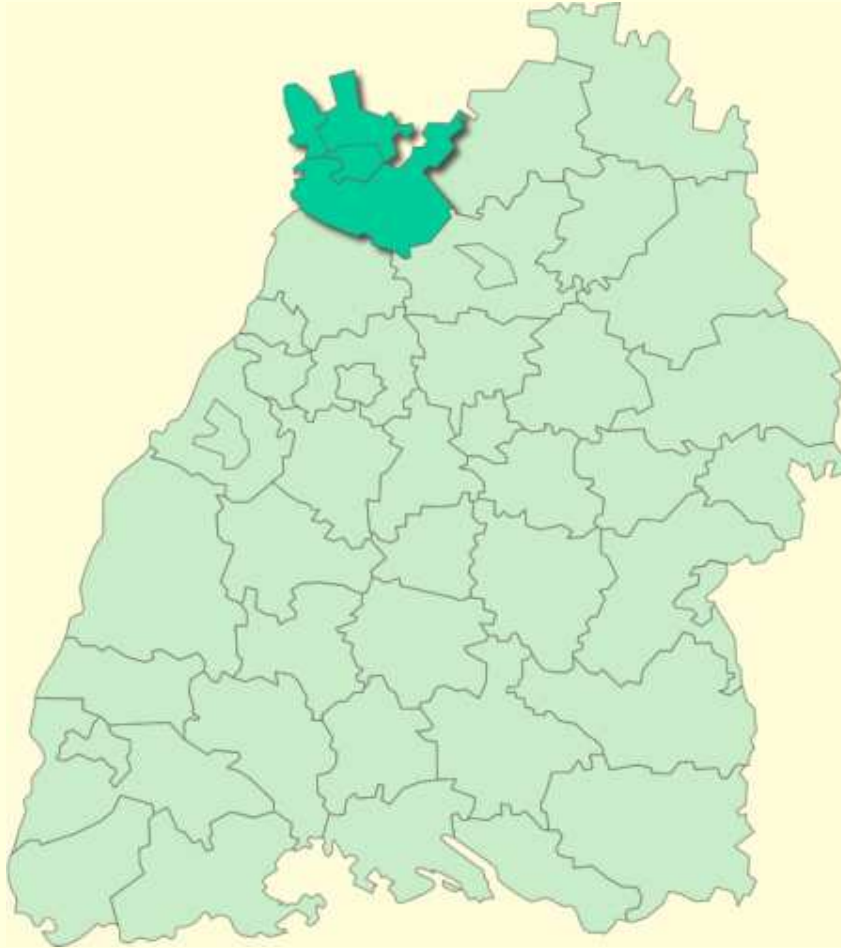
Stuttgart, Esslingen, Ludwigsburg, Rems-Murr-District:

- E-GITS GmbH (Stuttgart)
- Bosch Rexroth AG (Stuttgart)
- IBM Deutschland GmbH (Stuttgart)
- Dürr Automotion GmbH (Stuttgart)
- viastore systems GmbH (Stuttgart)
- LTG AG (Stuttgart)
- IMI Norgren-Herion Fluidtronic GmbH & Co. KG (Fellbach)
- sortimat Technology GmbH & Co. KG. (Winnenden)
- OKU - Automatik Otto Kurz GmbH (Winterbach)
- SANDVIK Process Systems ZN der Sandvik GmbH (Fellbach)
- Schuler Hydrap GmbH & Co. KG (Plüderhausen)
- Oskar Frech GmbH + Co. (Schorndorf)
- Mann + Hummel ProTec GmbH (Ludwigsburg)
- teamtechnik Maschinen und Anlagen GmbH (Freiberg)
- DANFOSS INDUSTRIEAUTOMATIK GmbH (Korntal-Münchingen)
- FESTO AG (Esslingen)
- Hirschmann Electronics GmbH & Co. KG (Neckartenzlingen)
- Putzmeister AG (Aichtal)
- T-Systems Enterprise Services GmbH (Leinfelden-Echterdingen)
- PILZ GmbH & Co. (Ostfildern)
- BALLUFF GmbH (Neuhausen a.d.F.)
- Leuze electronic GmbH + Co. (Owen)
- Hoerbiger-Origa GmbH (Filderstadt)
- FANUC Robotics Deutschland GmbH (Neuhausen a.d.F.)
- elrest Automationssysteme GmbH (Kirchheim)
- Murrelektronik GmbH (Oppenweiler)
- AIT-Applied Information Technologies AG (Fellbach)
- Contact GmbH (Stuttgart)
- Braun GmbH (Waiblingen)



Automation – Regional Centers

Mannheim, Heidelberg, Rhein-Neckar-Kreis



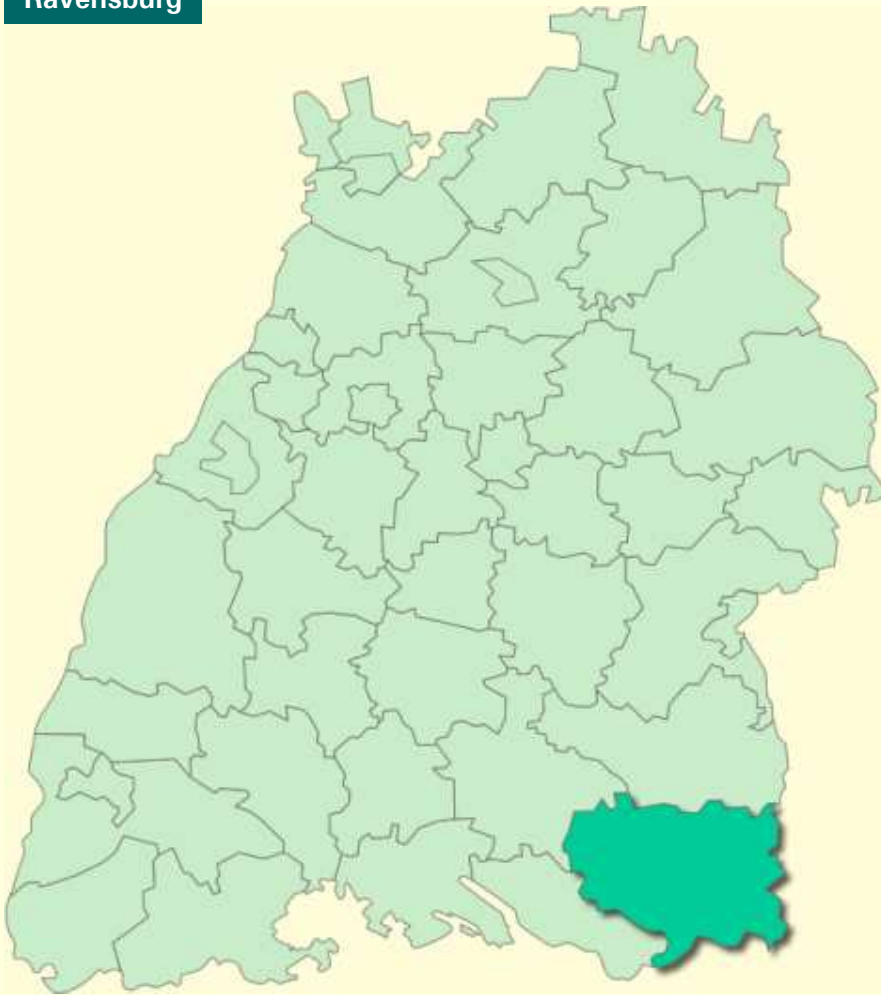
Mannheim, Heidelberg, Rhine-Neckar-District:

- GAH Beteiligungs AG (Heidelberg)
- PSA Ges. für Automatisierung und Integrationstechnik mbH (Heidelberg)
- ABB AG (Mannheim)
- Pepperl + Fuchs GmbH (Mannheim)
- Volz Elektrotechnik GmbH (Mannheim)
- Walter Perske GmbH (Mannheim)
- Emcon Engineering GmbH (Mannheim)
- Bihl & Wiedemann GmbH (Mannheim)
- Lippert Automationstechnik GmbH (Mannheim)
- GEBHARDT Fördertechnik AG (Sinsheim)
- SAP AG (Walldorf)
- HIMA Paul Hildebrandt GmbH & Co. KG (Brühl)
- Interroll Axmann Automation (Sinsheim)
- Conseers GmbH Consulting & Engineering (Weinheim)
- GOD Barcode Marketing mbH (Lobbach)
- HMR Automatisierung und Prozeßtechnik GmbH (Weinheim)
- König Transportanlagen GmbH (Heddesheim)
- Volz-Stopa Automatisierungs und Datensysteme GmbH (Ofersheim)
- MS-Automation GmbH (Sinsheim)
- Ebinger und Hofmann GmbH (Bammental)
- Lindqvist Automation GmbH (Reilingen)
- Weiss Dr. GmbH (Schriesheim)
- sab Burkhardt GmbH (St. Leon-Rot)
- Götz Automationstechnik GmbH (Aglasterhausen)
- Autmatec GmbH (Leimen)



Automation – Regional Centers

Ravensburg



Ravensburg:

- MT Handhabungstechnik- und Robotersysteme GmbH (Bad Wurzach)
- Müller Weingarten AG (Weingarten)
- Rafi GmbH & Co. KG (Berg)
- Hermann Waldner GmbH & Co. KG (Wangen)
- Coperion Waeschle GmbH & Co. KG (Weingarten)
- Rupert App GmbH + Co. (Leutkirch)
- Schuler Cartec GmbH & Co. KG (Weingarten)
- E.P. Elektro Projekt GmbH & Co. KG (Weingarten)
- Handtmann A-Punkt Automation (Baienfurt)
- PWS GmbH (Markdorf)
- STS Systemtechnik Electronic GmbH (Ravensburg)
- ASWA Automatisierung- Software GmbH (Ravensburg)
- PAVIS Engineering GmbH (Ravensburg)
- Roboworker Automations GmbH (Weingarten)
- IXXAT Automation GmbH (Weingarten)
- FÖRATEC GmbH & Co. KG (Wangen)
- WKS Informatik GmbH (Ravensburg)
- Kübat Förderanlagen GmbH (Altshausen)
- HECHT AUTOMATISIERUNGS-SYSTEME GMBH (Bodnegg)



Automation – Regional Centers

Schwarzwald-Baar-Kreis

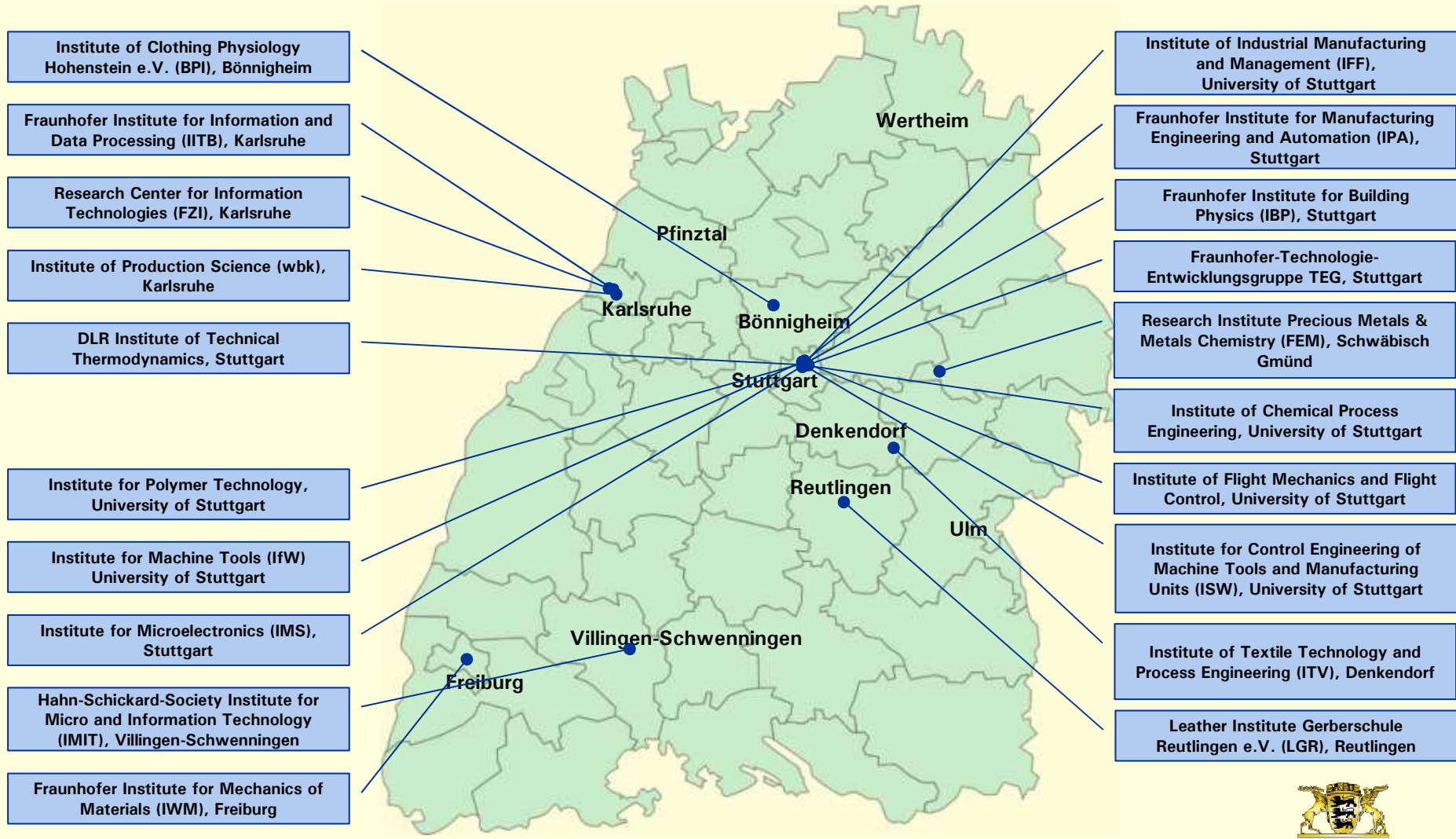


Schwarzwald-Baar-District:

- E. Dold & Söhne KG (Furtwangen)
- Schmidt Feintechnik GmbH (St. Georgen)
- KENDRION Binder Magnete GmbH (Villingen-Schwenningen)
- RENA (Gütenbach)
- EGT Gebäudetechnik GmbH (Triberg)
- IVO GmbH & Co. (Villingen-Schwenningen)
- Foerderer Soehne GmbH & Co. KG (Nierdeschach)
- KSL - Kuttler Automation Systems GmbH (Dauchingen)
- Fritz Kübler GmbH (Villingen-Schwenningen)
- Grässlin Automationssysteme GmbH (St. Georgen)
- STEIN Automation GmbH (Villingen-Schwenningen)
- G.A.S. mbH (St. Georgen)
- M&M Software GmbH (St. Georgen)
- IFA GmbH (Donaueschingen)
- Ketterer-Maschinenbau-GmbH (Bad Dürkheim)
- Microtec Systems GmbH (Villingen-Schwenningen)
- Easytech GmbH (St. Georgen)
- ACI-ecotec GmbH & Co KG (St. Georgen)



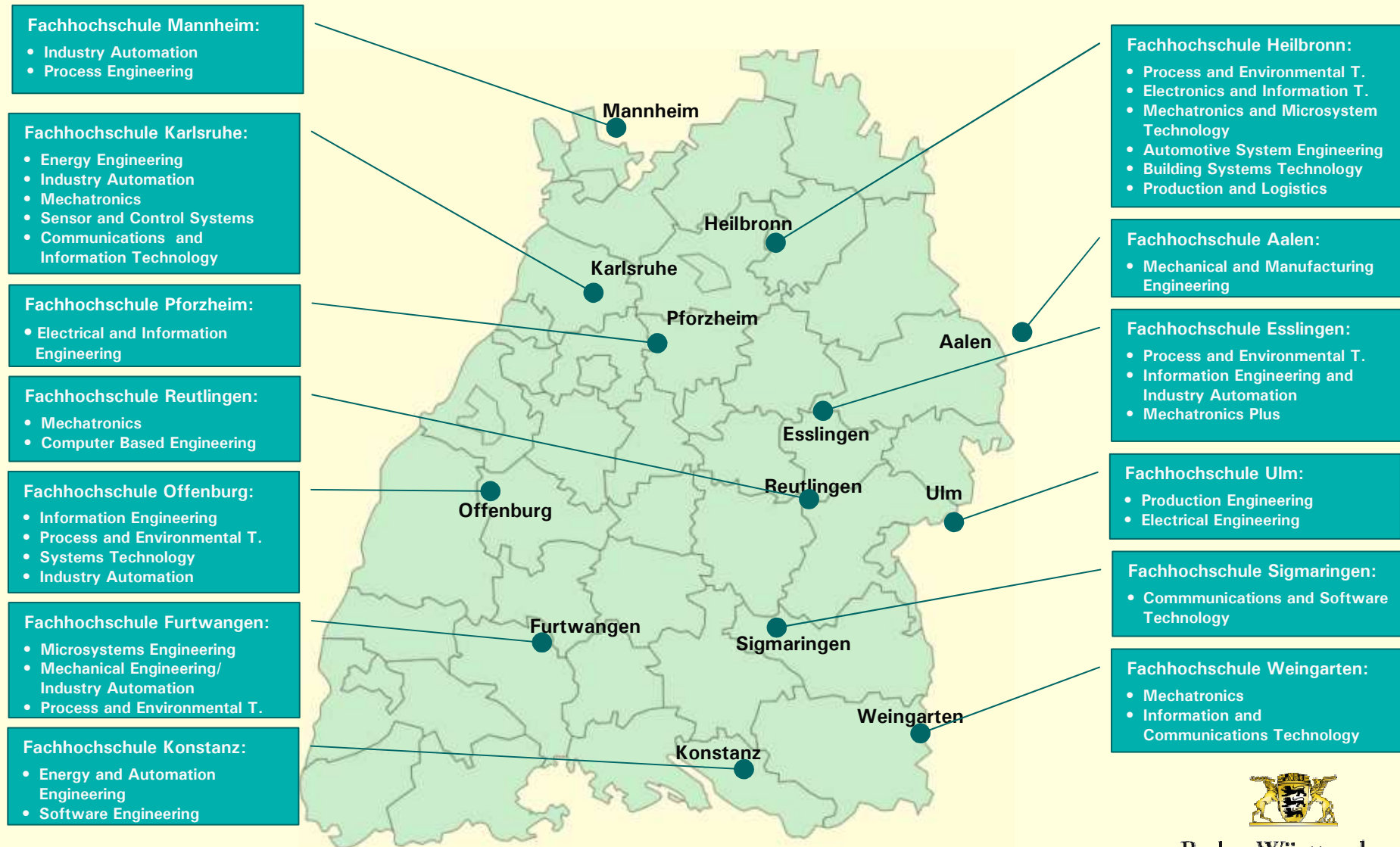
Automation – Research Institutes



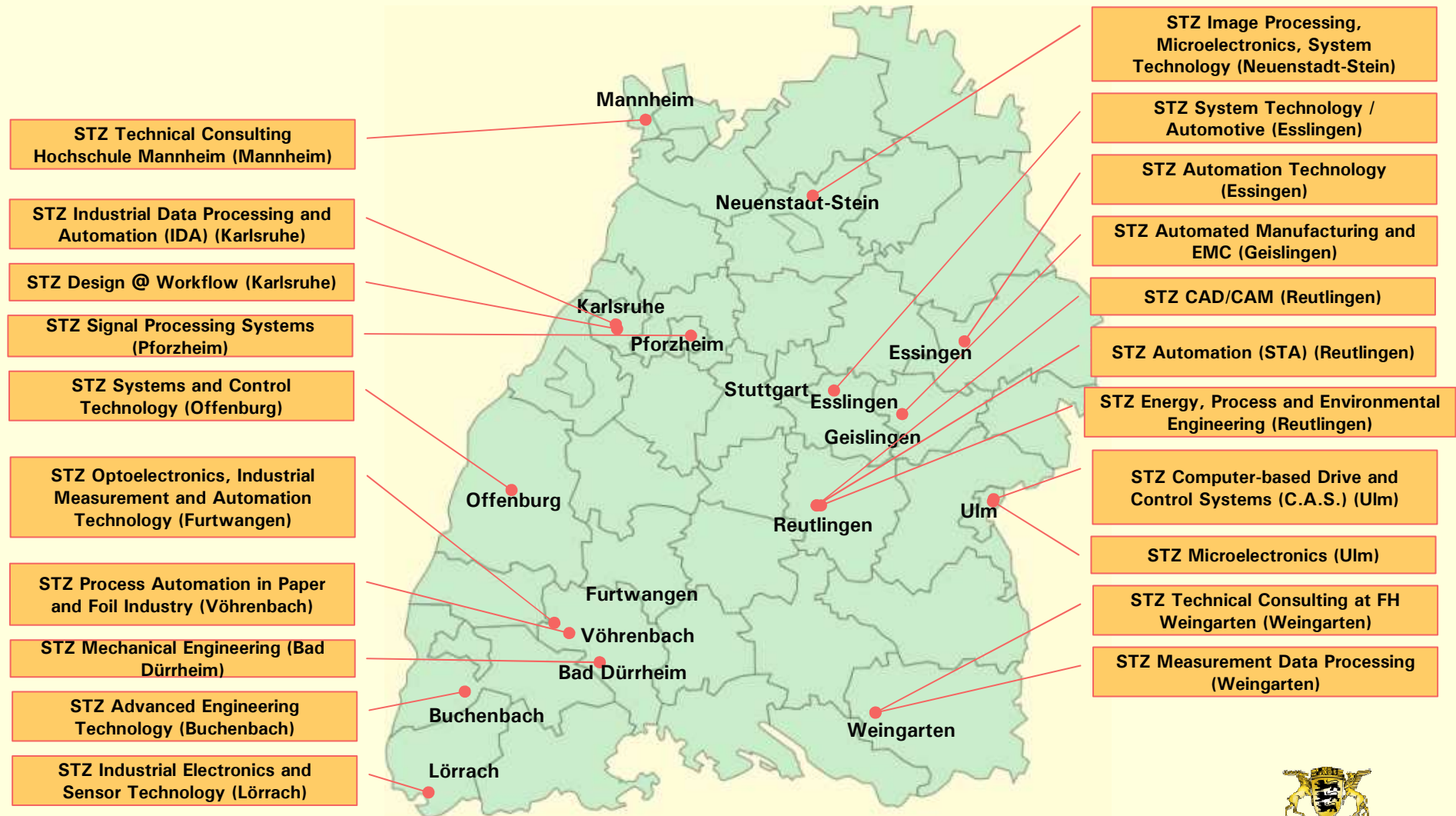
Automation – Relevant Study Courses (Universities)



Automation – Relevant Study Courses (Universities of Applied Sciences/Fachhochschulen)



Automation – Steinbeis Technology Transfercenters (STZ)



Automation – Research



Fraunhofer Institute for Mechanics of Materials (IWM), Freiburg

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

The Fraunhofer Institute for Mechanics of Materials IWM develops solutions to increase the safety, availability, and lifespan of components and systems ranging from microelectronic devices to power plant components. The Institute develops concepts to make optimum use of new materials as well as cost-effective and environmentally compatible shaping and precision-machining processes.



Fraunhofer Institute for Information and Data Processing (IITB), Karlsruhe

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

Fraunhofer IITB is the prime institute for automatic and interactive imagery analysis, for the application of information technology to the optimization of industrial processes and also for computer networks and information services. The IITB develops ready-to-implement solutions and offer a broad spectrum of feasibility studies, process analyses and optimization. The institute also offers process and system development including the provision and installation of problem solutions based on information technology. Quality management and maintenance of the implemented systems complete the palette of services.



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.



Automation – Research



Fraunhofer-Technologie-Entwicklungsgruppe (TEG), Stuttgart

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

Fraunhofer-Technologie-Entwicklungsgruppe TEG is the interdisciplinary development specialist inside the fraunhofer group in the areas of product development, production technology, management, strategy und organisation. With access to the know-how of one of the largest R&D institutions in Europe, it networks this unique knowledge to achieve practical solutions for the future.



Fraunhofer Institute for Building Physics (IBP), Stuttgart

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

The Fraunhofer Institute of Building Physics IBP deals with research, development, testing, demonstration and consulting in the fields of building physics. This includes noise control, sound insulation measures in buildings, optimization of audibility conditions in audiences, energy saving measures, lighting technology, questions of indoor climate as well as aspects of moisture and weathering protection, the preservation of building structures and of historical monuments. The Institute co-operates with partners from all sectors of industry in the development and introduction on the market of new and sustainable building materials, components and systems.



DLR Institute of Technical Thermodynamics, Stuttgart

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

The Institute of Technical Thermodynamics at the German Aerospace Centre in Stuttgart has additional sites in Köln-Porz and Almeria/Spanien. The institute works on the exploitation of highly efficient energy conversion technologies and on the accelerated introduction of renewable energy sources. The work ranges from theoretical studies and basic laboratory work to the operation of pilot plants.



Automation – Research



Institute of Textile Technology and Process Engineering (ITV), Denkendorf

<http://www.itv-denkendorf.de>

The institute supports small and medium-sized enterprises (SME) in the solution of research and development tasks within the scope of industrial joint research. Accordingly the individual working fields are orientated to these tasks which in general cover the whole field of textile technology and related fields.



Institute of Clothing Physiology Hohenstein e.V. (BPI), Bönningheim

<http://www.hohenstein.de>

The Hohenstein Institutes' work and research in the science of the physiological function of clothing has gained international recognition. Various biophysical measuring devices are used for the quantitative assessment of the wear properties of clothing systems – such as workwear and industrial clothing. The results are used to draw up construction guidelines for textiles and clothing systems which provide the wearer with a good level of wear comfort and also minimise the physiological strain at the workplace.



Research Institute Precious Metals & Metals Chemistry (FEM), Schwäbisch Gmünd

<http://www.fem-online.de>

Since 1922 the Research Institute for Precious Metals and Metals Chemistry (**fem**) in Schwäbisch Gmünd / Germany is a well known independent non-university non-profit institution in the field of metallurgy, materials science and surface technology. Main aspects of its work are the application of different coating technologies (electrochemistry / electroplating, anodisation and lacquering of aluminium, PVD and PACVD techniques) in combination with our extensive testing facilities for materials and coatings as well as for materials analyses.



Automation – Research



Leather Institute Gerberschule Reutlingen e.V. (LGR), Reutlingen

<http://www.lgr-reutlingen.de>

Applied research projects supported by the public authorities are carried out at LGR, such as Product- and process-optimisation, process control, ecological manufacturing methods, effluent treatment, utilization of by-products. The institute is also involved in contract research for the leather manufacturing and processing industry as well as the chemical industry, application trials in laboratory and semi technical scale.



Hahn-Schickard-Society Institute for Micro and Information Technology (IMIT), Villingen-Schwenningen

<http://www.hsg-imit.de>

Companies appreciative of innovation have been entrusting HSG-IMIT since 1988 with their product ideas. Beginning in 1996 the volume of industry business in research and development has doubled every year. The main assets are concentration on main competencies, experience in the realization of innovations and excellent technical facilities. Internationally the HSG-IMIT and its 80 employees enjoy an outstanding position as important interlocutor for experts and organizers of and speakers at technical congresses.



Institute of Chemical Process Engineering, University of Stuttgart

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

Main fields of research and teaching are: Chemical Reaction Engineering, Physico-chemical operations including Membrane Technology, Apparatus and Plant Design and Technology. Special emphasis is laid upon mathematical modelling and numerical simulation of the considered processes in direct combination with a detailed experimental analysis. Research activities in Chemical Reaction Engineering cover fixed-bed and monolithic reactors for catalyzed gas-phase reactions under steady state and dynamic operating conditions, especially for high temperatures.



Automation – Research



Institute for Polymer Technology (IKT), University of Stuttgart

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

IKT's teaching and research focuses on the production and processing of polymers, the design of plant and equipment for manufacturing/processing polymers, fluid mechanics, rheology and rheometry. The recycling of polymers also plays an important role.



Institute for Machine Tools (IfW), University of Stuttgart

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

At the Institute for Machine Tools (IfW), University of Stuttgart, research projects in the field of construction, optimisation of machine tools, and machining production engineering are carried out by more than thirty scientific employees. The emphases of investigation at the IfW are on the fields of machine tool construction, machining metal and wood working as well as on automatic control and environment-compatible production engineering.



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.



Automation – Research



Institute of Flight Mechanics and Flight Control (IFR), University of Stuttgart

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

The IFR's research activities concentrate on three main areas: flight control design, autonomous guidance and control of aircraft, and the development of software to solve trajectory optimization problems. As well as specializing in the practical application of aerospace technologies, the institute also conducts fundamental theoretical research.



Institute of Industrial Manufacturing and Management (IFF), University of Stuttgart

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

Research at the IFF covers the areas of industrial manufacturing and factory management. This includes on the one hand techniques and methods for the production of both single components and complete products, on the other hand planning, implementation, operating and disassembly of production systems. The laboratory contains various machine tools, coating units and coordinate and surface measuring instruments.



Research Center for Information Technologies at the University of Karlsruhe (FZI)

<http://www.fzi.de>

FZI was founded in 1985 and is a non-profit contract research organisation that concentrates its efforts on novel information technologies for providers of investment and consumer products, of production or business products and of information services, and supports the development of innovative applications, primarily in engineering, on the basis of recent but already proven techniques. Most important, FZI offers its members a unique interdisciplinary environment that fosters joint research among diverse fields of Informatics, Mechanical and Electrical Engineering.



Automation – Research



Institute for Microelectronics Stuttgart (IMS CHIPS), Stuttgart

<http://www.ims-chips.de>

IMS CHIPS stands for synergetic competence in teaching, research and development and certified production of innovative microelectronic systems. IMS operates one of the most modern production and development lines for highly complex silicon microchips. Apart from technicological services to several semiconductor manufacturers, IMS supports especially small- and medium-sized enterprises as well as research institutes to solve technological problems.



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. More importantly, this also allows a practical education and as well as postgraduate professional education. 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.

