



Regional
Cluster Atlas
Baden-Württemberg

2016

Overview of cluster-related networks and initiatives

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www.clusterportal-bw.de



Baden-Württemberg

MINISTRY OF ECONOMIC AFFAIRS, LABOUR AND HOUSING

Regional
Cluster Atlas
Baden-Württemberg

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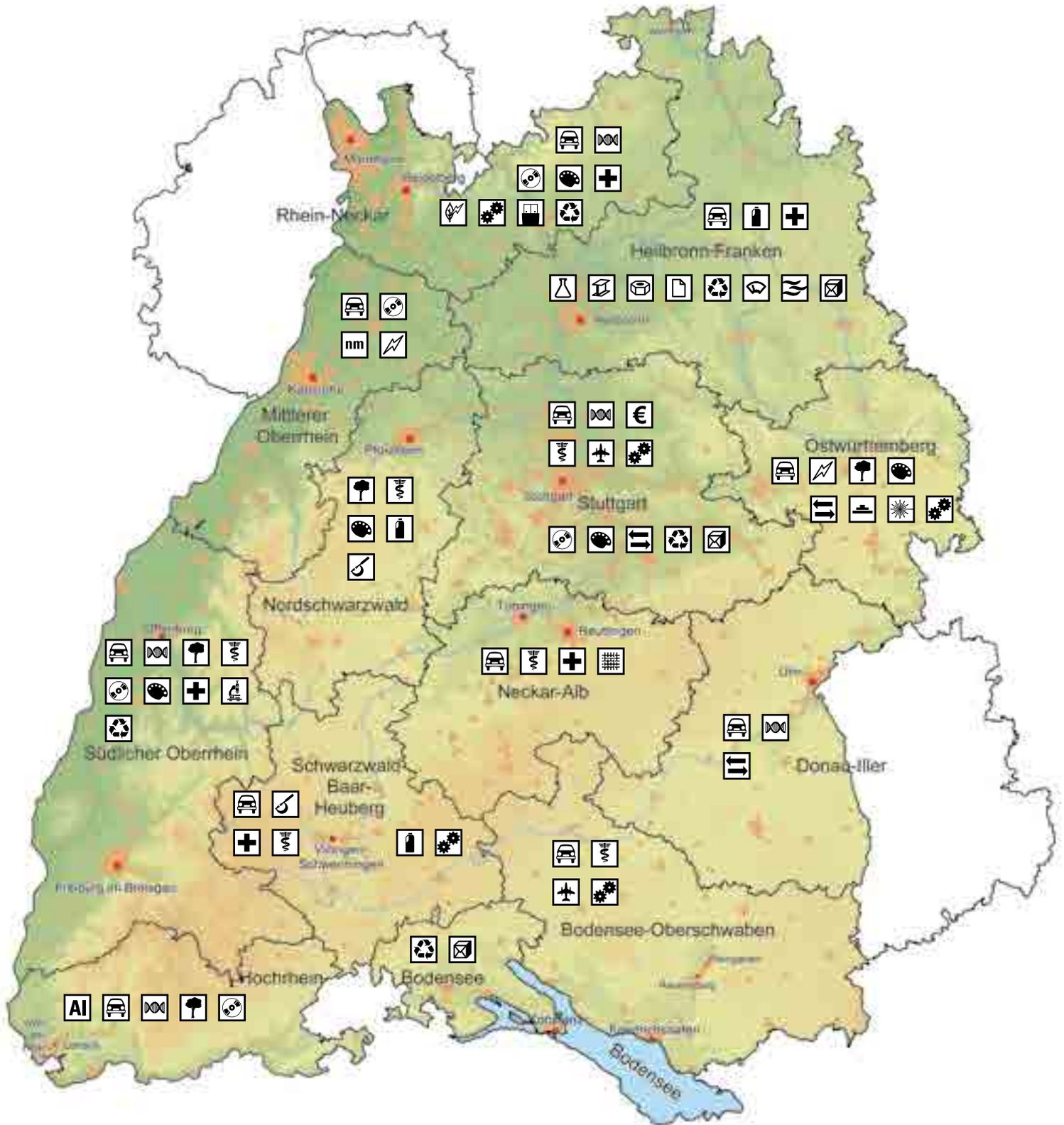
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Legend for regional cluster map

 Aluminium processing	 Metal processing
 Automotive	 Microsystem technology
 Biotechnology	 Assembly and fastening technology
 Energy	 Nanotechnology
 Precision engineering etc.	 Surface technology
 Finance	 Organic electronics
 Forestry and timber	 Paper processing
 Health industry	 Photonics
 Information technology/enterprise software	 Production technology, mechanical and plant engineering and toolmaking
 Creative industries	 Storage systems and smart grids
 Plastics technology and plastics processing	 Textiles and clothing
 Lab glass	 Environmental technology
 Logistics (including intralogistics)	 Valve, measurement and control technology
 Aerospace	 Ventilation technology
 Medical engineering	 Packaging technology

Map of regional clusters in Baden-Württemberg



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Preface



Dear Readers,

Also in Baden-Württemberg, economy and society, enterprises and their employees will be facing enormous changes in the years to come. Innovation cycles are becoming ever shorter, whereas the technological development is proceeding faster and faster. New digital technologies increasingly interact with the production processes of enterprises and change them significantly. The Connected Industry, that means the interaction of industrial production and the latest information and communication technologies, plays a central role, especially in medium-sized enterprises, and changes the working environment.

However, not only the technological developments need to be approached by the industry, ecological questions need to be answered as well. Stricter environmental specifications, but also stricter requirements regarding the recyclability of the utilized raw materials, must be taken into consideration by the companies to preserve our environment for our future generations.

Enterprises need partners to tackle the technological, the ecological, and the social challenges and to solve problems. Cluster initiatives and networks can help to find these partners and initiate cooperation projects. They allow the close and quick exchange of information on a regional level. Moreover, they have become more and more capable of building cross-border partnerships and relationships to make the developments and trends on the international markets accessible for the enterprises in our state.

With this new edition of our Regional Cluster Atlas, enterprises, research institutions, universities, and everyone else with an interest in clusters can find suitable contacts and partners in one of the twelve regions of our state. For this 5th edition of the Cluster Atlas, we have once again collected the data of about 120 cluster initiatives, state-wide

networks, and state agencies.

In addition to the Cluster Atlas, the Ministry of Economics also provides the web-based Cluster Database Baden-Württemberg at its Cluster Portal which is updated regularly. As a supplement to the Cluster Atlas Baden-Württemberg, it offers a wide range of additional information. Convince yourself of the quality of our cluster initiatives and networks by visiting our Cluster Portal and the Cluster Database at:

www.clusterportal-bw.de/clusterdaten/clusterdatenbank

Furthermore, the Cluster Atlas lists additional findings and analyses of cluster data which we have collected. For example, size (number of members), stakeholder structure (research, industry, and politics), or the cluster initiatives' proportionate public or private funding. With information on the individual regions and their cluster initiatives, the Cluster Atlas provides an excellent overview of the cluster landscape in Baden-Württemberg. We gladly invite you to get to know our Cluster Atlas and the Cluster Portal Baden-Württemberg and use them for your innovation-political and cluster-political activities.

A handwritten signature in black ink that reads "Nicole Hoffmeister-Kraut".

Dr. Nicole Hoffmeister-Kraut

Minister of Economic Affairs, Labour and Housing
of the State of Baden-Württemberg

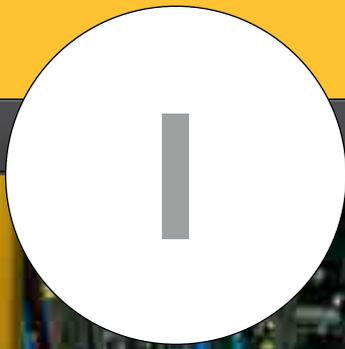
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Introduction

Structure and content of the Cluster Atlas

The Cluster Atlas provides you with all the relevant basic information about the regional clusters in Baden-Württemberg and the related innovation-oriented regional cluster initiatives. It also covers the cluster-relevant research, development and transfer institutions in the state's different regions. In addition, it presents the state-wide innovation networks and state agencies.

The Cluster Atlas supplements the web-based Cluster Database Baden-Württemberg which contains additional, more detailed information on the different cluster initiatives. To browse the Cluster Database, visit the Cluster Portal at www.clusterportal-bw.de/clusterdaten/clusterdatenbank/.

The Cluster Atlas lists 118 cluster initiatives which often extend their activities beyond the boundaries of their industries or regions. It demonstrates how wide-spread and versatile Baden-Württemberg's cluster landscape actually is. In line with the previous editions, the Cluster Atlas 2015 maintains the allocation to Baden-Württemberg's twelve planning regions. The Donau-Iller and Rhine-Neckar regions are an exception here. Both regions are cross-border regions which is why they also include statistical information from Bavaria, Rhineland-Palatinate and Hesse.

The presentation of the different regions is structured as follows:

1. A front page with a brief introduction of the region and its characteristics and the respective structural data.
2. Descriptions of the individual regional clusters including the related cluster initiatives and contact information.
3. An overview of universities, research and transfer institutions that are relevant for the regional clusters.

Moreover, in Chapter I you will find a description of all state-wide and cross-regional networks and state agencies.

In order to structure the different clusters and cluster initiatives within the various regions, they are categorized in 18 target fields (e.g. Automotive, Biotechnology, Creative Industry, ICT) that have been established for Baden-Württemberg's cluster policy. In addition, due to their growing importance, two further target fields have been added, the Health Industry and Environmental Technology.

However, not all of the identified regional cluster initiatives can be clearly assigned to one of these 18 target fields of cluster policy; some of these regional clusters and their initiatives relate to more than one of the above target fields. In particular, this applies to clusters such as Electric Mobility, Packaging Technology, Surface Technology or Fastening Technology that have their own specific roles. Because of this and partly because of their history and importance for maintaining the characteristic regional profile of these clusters, the original name or label of these clusters has been kept.



Cluster policy in Baden-Württemberg

Baden-Württemberg's cluster policy, which is an essential part of its innovation policy and policy for small and medium businesses, is focussed on the 18 future-proof target fields and the cross-industry topics such as Sustainable Mobility, Environmental Technology and Resource Efficiency, Health and Care, and IT in Products and Services and it is increasingly integrated into the regional structural policy. Its goal is to improve the innovative power of the companies in the state and thus to increase the competitiveness of Baden-Württemberg's industry, and also to strengthen Baden-Württemberg's position in the global market.

Through common action within cluster initiatives, the relationships between the stakeholders in a region are clearly strengthened as well. This leads to common activities and projects between different companies and also between companies and research institutions. Furthermore, this enables new cooperation projects across state borders or industries, often resulting in new knowledge, expertise and ideas. This sustainably increases the innovative power and international competitiveness of enterprises, in particular that of small and medium-sized enterprises.

Therefore, the cluster policy systematically supports the establishing and development of clusters, cluster initiatives and state-wide networks. Specific focus is on cross-industry and cross-technology cooperation projects as well as internationalization activities. It is a declared goal of Baden-Württemberg's cluster policy to further professionalize the cluster management structures and to contribute to an improved cluster management quality.

Following its bottom-up approach, the dialogue-oriented cluster policy utilizes different measures and instruments. The success of this policy has been confirmed by the fact

that numerous cluster initiatives from Baden-Württemberg have received awards in national and regional competitions.

The support for the cluster initiatives and networks within the state may be divided in two fields of activities. First, there are the instruments used to support and guide the cluster and network development. This includes information and networking, cluster dialogues and also the promotion of cluster excellence. And then, there are the funding programmes for cluster initiatives and networks that provide financial assistance for the projects and activities of the management teams of clusters and networks.

Instruments for supporting cluster and network development

Figure 1 shows, in the order they occurred, the various measures and instruments that have been utilized under Baden-Württemberg's target-oriented cluster policy since 2006 to support the cluster initiatives and state-wide networks. This clearly shows that the emphasis or focus of the measures has changed over time. While in the beginning, it was most important to actually define the term 'cluster' and to grasp a picture of Baden-Württemberg's cluster landscape with its cluster initiatives and networks, the focus today is on measures that target a further professionalization of cluster and network management and on measures that help cope with the challenges related to globalization and the demographic change. This also includes improved preparation of the cluster management teams to deal with tasks such as the internationalization and the implementation of cross-sectoral innovation processes for the benefit of the cluster stakeholders.

1 "Analytische und konzeptionelle Grundlagen zur Clusterpolitik in Baden-Württemberg" (Analytical and conceptual basics of cluster policy in Baden-Württemberg – report by Prognos AG in cooperation with ISW Consult on the cluster strategy of the state of Baden-Württemberg, 2009; see also chapter "Terms and target fields of cluster policy").

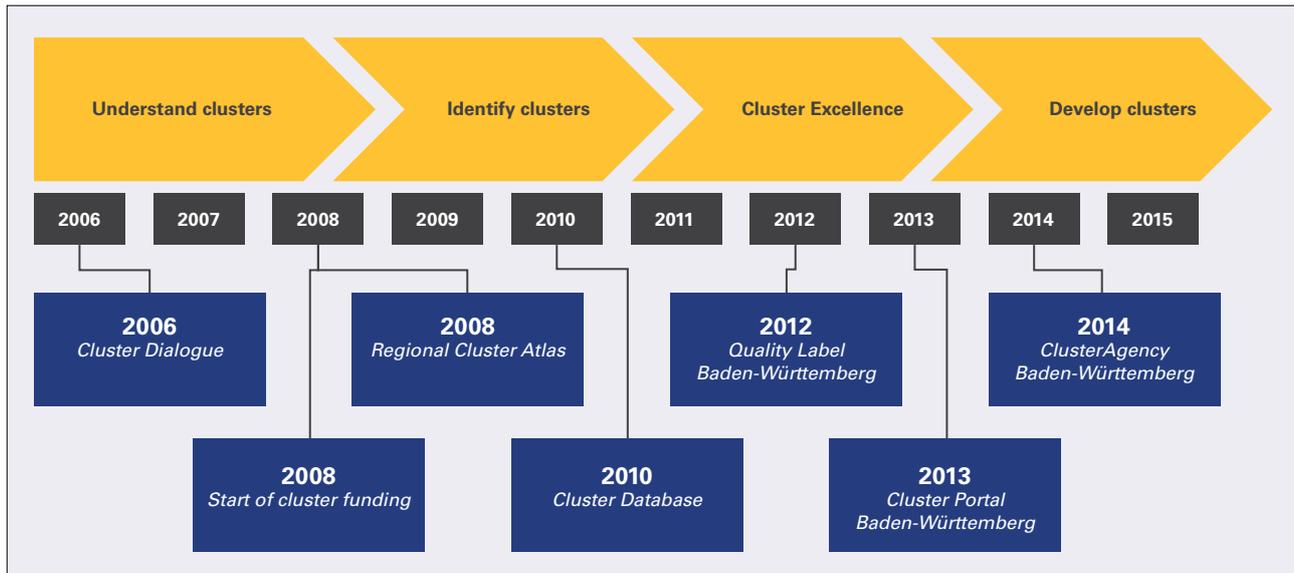


Fig. 1: Instruments of cluster policy in Baden-Württemberg in the context of changing requirements

Individual instruments are explained in more detail below.

Understanding clusters – the Cluster Dialogue

Baden-Württemberg's cluster policy is based on the dialogue with the regional stakeholders as well as the cluster initiatives and state-wide networks. It, therefore, has always had a bottom-up approach, right from the beginning. In the context of cluster promotion, bottom-up means that targets and measures of supporting programmes are not defined by politics or public authorities (top-down) but are defined by the needs and challenges within the regions and the companies there. This principle applies to both the cluster

initiatives, which take into consideration the specific environments and local conditions when defining their focus areas, and also to the cluster policy itself.

Accordingly, the instruments of cluster policy are also discussed and developed together with the cluster stakeholders from the different regions. This basic principle is reflected in the label Cluster Dialogue - the motto of the state's measures of cluster policy.

Under the label Cluster Dialogue, the activities of cluster policy are classified in different programmes depending on the respective target groups (see figure 2):

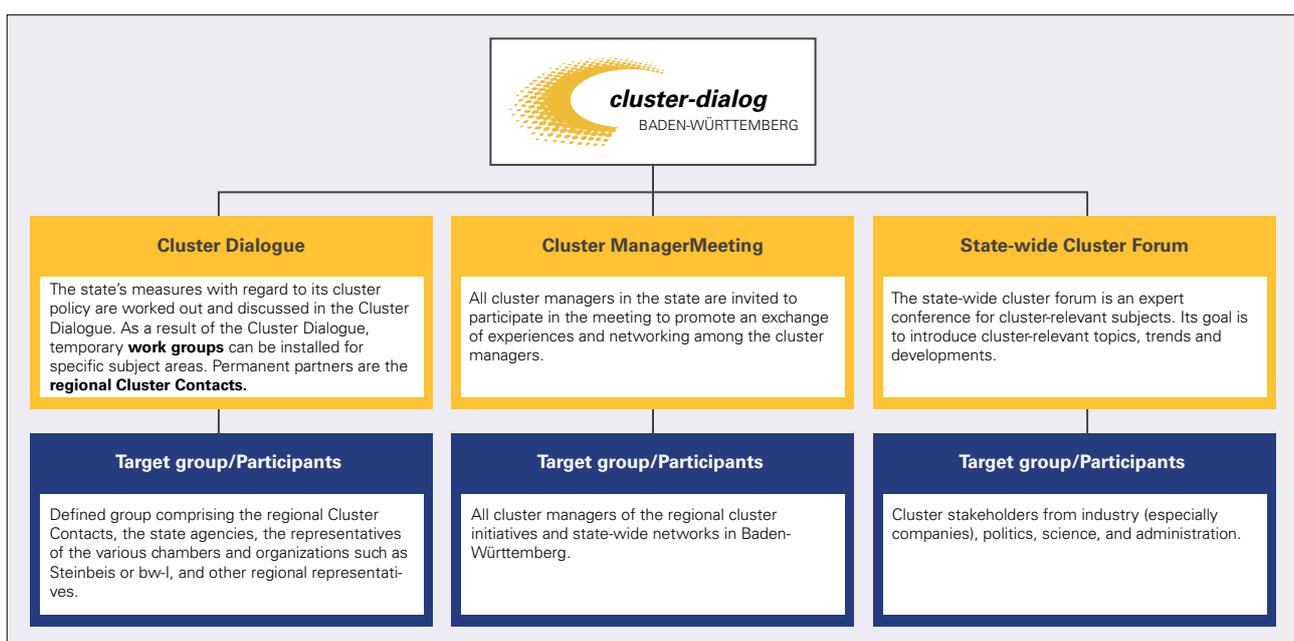


Fig. 2: Cluster Dialogue overview

1. Cluster Dialogue

The Cluster Dialogue usually takes place twice a year. At this event, current issues and measures of Baden-Württemberg's cluster policy are discussed and worked out. In addition to the twelve regional cluster contacts, representatives of the state agencies, of the chambers, as well as from other organizations such as the Steinbeis Europa Zentrum and Baden-Württemberg International participate in the Cluster Dialogue.

To prepare and structure the Cluster Dialogue, regular work groups have been installed, each with clearly defined tasks in terms of subjects and time limits. Currently, for example, one work group deals with the topic of "Cooperation projects of cluster initiatives". The results from the Cluster Dialogue and its work groups are taken into consideration when the state determines the goals and measures of its cluster policy. This Cluster Atlas and the Baden-Württemberg (BW) Cluster Portal including the Cluster Database and also the new funding programmes are direct results from this cooperation.

The so-called Cluster Contacts in the state's twelve planning regions have a very special function here. The regional Cluster Contacts represent the interests of their region's cluster initiatives in the Cluster Dialogue and act as direct contacts for the Ministry of Finance and Economics. They pass on the targets of cluster policy and its related ideas from the state to the regional level. At the same time, they act as contacts for the regional cluster initiatives and forward their requirements, ideas and problems to the Ministry. For a list of regional contacts, see the overview „Regional Cluster Contacts“ (page 146) or see at: www.clusterportal-bw.de/regionen.

2. Cluster ManagerMeeting

Once a year, there is a Cluster ManagerMeeting to which the representatives of all cluster initiatives listed in the Cluster Database and of the state agencies and state-wide networks are invited. The goal of this state-wide Cluster ManagerMeeting is to exchange cluster-specific information and experiences. It is also an event for networking.

This conference is an opportunity for the cluster managers to discuss their challenges and problems with each other and directly speak with other cluster-political stakeholders in the state to find common solutions. The ministry uses the conference to spread important cluster-political messages and the results from the Cluster Dialogue workgroups.

3. Cluster Forum

The state-wide Cluster Forum was held in 2007 for the first time and now takes place bi-annually. The goal of this expert conference is to make cluster-relevant topics available to a

wider public, and especially to the representatives from the industry, politics and science. It introduces current topics, trends and developments which are discussed with the participants. On 8 May 2014, for example, the 6th Baden-Württemberg Cluster Forum was held on the topic of "Future technologies and modern services for more quality in life" and the 5th Baden-Württemberg Cluster Forum on 1 March 2012 was held under the motto of "Innovation, the Asian way – challenge for clusters and networks?!" Additionally, since 2011, there have been regional cluster forums that address cluster-relevant stakeholders in the regions, providing targeted information and networking opportunities, particularly for companies that have not yet been active in cluster initiatives.

Cluster identification – Cluster Atlas, Cluster Database and Cluster Portal Baden-Württemberg

Up to this day, Baden-Württemberg has been one of a few regions in Europe that have drawn up detailed lists of all clusters, cluster initiatives and state-wide networks, including the structural data, in order to create transparency. The first Cluster Atlas Baden-Württemberg was published in 2008. Its primary goal was to gain an overview of the cluster landscape in Baden-Württemberg.

During the creation of this Cluster Atlas, the terms cluster, cluster initiative and state-wide network were defined on a scientific basis. This has enabled a common understanding and uniform use of these terms. You will find the definitions of the terms in the chapter "Terms and target fields of cluster policy".

Together with the 2010 edition of the Cluster Atlas, a web-based Cluster Database was introduced in addition to the print version. The Cluster Database presents the cluster initiatives in greater detail and is updated regularly so that you will always find the latest information there. For the Cluster Database, visit our website at: www.clusterportal-bw.de/clusterdaten/clusterdatenbank.

With the Cluster Portal BW, a contemporary web presence has been provided for the cluster initiatives, state-wide networks and the state's various regions. At www.clusterportal-bw.de, it provides an opportunity for the cluster stakeholders, the companies and the wider public to inform themselves about clusters in general.

At the centre of the Cluster Portal BW is the Cluster Portal which lists and provides details for all cluster initiatives and state-wide networks in Baden-Württemberg. The Cluster Database provides a professional platform for the presentation of cluster initiatives and an up-to-date database for potential enquirers and interested parties. For the Cluster Database, visit: www.clusterportal-bw.de/clusterdaten/clusterdatenbank/.

In addition, the Cluster Portal BW presents current developments around the topic of clustering. Each month, a special Topic of the Month addresses specific problems such as the internationalization of cluster initiatives, their evaluation, and benchmarking in a practical form. Furthermore, the different regions present themselves in the Cluster Portal with their cluster initiatives and inform, for example, about upcoming events or news.

Soon, the cluster managers will be provided with an additional separate communication tool in the Cluster Portal BW which will allow an interactive exchange about current developments. They will be able to discuss specific topics in closed forums and groups or send documents via a common platform. This is to further promote networking between the cluster initiatives.

Cluster-Excellence Baden-Württemberg – the quality label

To ensure sustainable development of the cluster initiatives in Baden-Württemberg it is not sufficient to simply establish cluster management structures, it is also necessary to continuously improve and professionalize them. Excellent cluster management gains more and more importance for a sustainable and efficient cluster development. The more professional a cluster management acts, the quicker and more efficiently the participating cluster stakeholders can be supported and innovations realized in the cluster initiatives.

An important step towards the professionalization of cluster management in Baden-Württemberg was the introduction of the trademark-protected quality label 'Cluster-Excellence' by the Ministry of Finance and Economics in July 2012. This quality label relates to the quality criteria that are valid for the European Gold Label of the European Cluster Excellence Initiative (ECEI) supported by the European Commission. The quality criteria were adapted and developed further to meet the specific requirements for cluster initiatives and state-wide networks in Baden-Württemberg in terms of internationalization and sustainable financing. With the Cluster-Excellence Baden-Württemberg label, an independent and voluntary instrument of proof of excellent cluster management in Baden-Württemberg was created.

The Cluster-Excellence Baden-Württemberg quality label is awarded by the Ministry of Finance and Economics for a limited time of two years upon the recommendation of an independent committee. During the recertification process that is required after two years, not only the quality criteria are taken into consideration, but also the implementation of the committee's recommendations. The quality label helps to improve the performance of the cluster initiatives and state-wide networks because, in addition to an

evaluation, it also identifies potential for improvement and specific measures for realization. This creates incentives for cluster and network management teams to engage in quality benchmarking and to review their own activities, management performance, etc. Furthermore, it is a valuable instrument for finding new cluster partners.

Moreover, the quality label is recognized at European level so that cluster initiatives or state-wide networks - after a successful certification process - may be awarded the additional "Cluster Management Excellence Label GOLD – Proven for Cluster Excellence" label by the European Cluster Excellence Initiative.

So far, the following Baden-Württemberg cluster initiatives and state-wide networks have been awarded the Cluster-Excellence Baden-Württemberg quality label:

- AFBW – Allianz faserbasierte Werkstoffe Baden-Württemberg e.V. (Alliance of fiber-based materials)
- automotive bw
- BioRN – Biotechnologie – Cluster Rhine Neckar
- CyberForum e.V.
- Electric Mobility South-West
- MicroTec Südwest
- Photonics BW e.V. – innovation cluster for optical technologies in Baden-Württemberg
- Virtual Dimension Center Fellbach w. V.
- TechnologyMountains e. V.

Cluster development – ClusterAgency Baden-Württemberg

Over the past years, a large number of cluster initiatives have developed in Baden-Württemberg. For cluster policy it is important to continue to support and assist the development of cluster initiatives and networks in the state. The initiatives also allow these stakeholders, that are so important for innovations, to maintain their positions at this hub where industry, research and politics come together.

The cluster initiatives and state-wide networks will be able to contribute even more in the future to bring forward important economic-political goals, for example, the internationalization of small and medium-sized enterprises, the technology transfer between research and industry and the initiation of cross-sectoral or cross-industry innovations.

To support and assist cluster initiatives in their development, the ClusterAgency Baden-Württemberg was founded using funds from the European Regional Development Fund (ERDF) and the state of Baden-Württemberg. ClusterAgency Baden-Württemberg provides services for cluster initiatives, state-wide networks and assists the Baden-Württemberg cluster policy. ClusterAgency Baden-Württemberg is

operated by the VDI/VDE Innovation + Technik GmbH, the Steinbeis-Beratungszentrum GmbH, and the Baden-Württemberg International GmbH, with all stakeholders cooperating closely. Cooperation with the various state agencies in Baden-Württemberg is also very close.

The ClusterAgency Baden-Württemberg specifically supports the management teams of the cluster initiatives and state-wide networks in Baden-Württemberg in their strategic development, demand analyses, and the development of new services for their members.

It is also the ClusterAgency Baden-Württemberg's responsibility to train the cluster and network management teams so that they can offer even more targeted services to their members, in line with their needs and the cluster initiatives' strategies. Moreover, the ClusterAgency Baden-Württemberg supports the Ministry of Finance and Economics in implementing the state's cluster-political goals.

The activities of the ClusterAgency Baden-Württemberg are mainly focused on the following areas:

- Professionalization of cluster management

The ClusterAgency Baden-Württemberg acts as a partner of the cluster and network management teams on their way to further professionalize their work. In addition to training courses and workshops, it also offers individual consulting for the cluster and network management teams. Together, they can advance topics such as strategic development, service portfolios, and the measuring of success and performance.

- Technology transfer

Cluster initiatives should become more active and promote the technology transfer between companies and research institutions and also advance the exchange of knowledge and expertise across technologies and industries. This allows a better utilization of the innovation potential that is available where different technologies meet and overlap.

- Internationalization

In the future, it will become more and more important for the cluster stakeholders to establish international relationships and networks besides their regional networks. The ClusterAgency Baden-Württemberg supports and assists the cluster initiatives in dealing with this complex topic of internationalization and helps the individual cluster initiatives to master their own specific challenges.

It has developed additional services that go beyond these three focus areas and that have been aligned to the needs of the cluster and network management teams to support the cluster initiatives in the state.

State support programmes for cluster initiatives and networks

In addition to the instruments of cluster and network development, the Ministry of Finance and Economics also offers funding programmes for cluster and network management. Over the past years, their main focus has been on the establishment and development of cluster management structures in regional cluster initiatives and state-wide networks. During the past ERDF period, a total of about EUR 7 million of ERDF and state funds were used for this. Based on the discussions of the cluster-political partners in the Cluster Dialogue and the existing comprehensive cluster structures that also cover the technological target fields of the state's policy, the funding policy has changed fundamentally. In the future, the focus of funding programmes will therefore be on supporting innovative exemplary projects and activities of cluster organizations, for example, in the area of internationalization or cross-technology cooperation projects.

ERDF administrative directive – Cluster and Innovation Platforms – CLIP 2014-2020

For a targeted support of the cluster management teams, the Ministry of Finance and Economics mainly supports the development and testing of innovative products and services through regional cluster initiatives and innovation platforms. This support is based on the ERDF administrative directive - Cluster and Innovation Platforms - CLIP 2014-2020, in connection with the corresponding call. All in all, there is EUR 2 million available for this in the current ERDF funding period.

The goal of this support programme is to intensify the cooperation between companies, universities, research institutions and other stakeholders of clusters and networks in the fields of specialization of the state of Baden-Württemberg. Cooperation between the cluster initiatives is to be intensified and new stakeholders, especially small and medium-sized enterprises, are to be attracted and involved in the cluster activities. Among other things, the aim is to advance the development and spreading of new technologies and strengthen the innovative power.

With this funding, cluster initiatives and state-wide networks are to be developed in a quality-oriented manner, mainly with respect to internationalization and an extension of cross-cluster cooperation projects (inter-, cross-, and meta-clusters). This type of grant is intended to advance the professionalization of the cluster initiatives and state-wide networks as well as their services in order to develop and strengthen sustainable self-supporting structures.

For more information on the support programme, see:
<https://www.efre-bw.de> or
https://www.efre-bw.de/lgl-internet/opencms/de/Microsite_EFRE/Foerderung/Clusterfoerderung/

Support programme ‘Internationalization of clusters and networks’

In cooperation with Baden-Württemberg International (bw-i), the Ministry of Finance and Economics has been offering a support programme for the promotion of an internationalization of cluster initiatives and networks since 2009. This support programme is still very popular and is continuously

adapted to the cluster initiatives’ needs. At present, the following funding opportunities for an internationalization of cluster initiatives are available:

- Development of internationalization strategies
- Internationalization vouchers for cluster managements to support targeted internationalization activities
- Participation of clusters at trade fairs
- Organization of cluster expert trips abroad
- Exchange of experiences with foreign cluster representatives in Baden-Württemberg

For more information on the support programme “Internationalization of clusters and networks”, see: www.bw-i.de/unternehmen-cluster/cluster-und-netzwerke.html



Cluster initiatives in Baden-Württemberg compared globally

The cluster initiatives and state-wide networks in Baden-Württemberg are different in many ways. Major factors are the sectoral and industry structures in which the cluster stakeholders operate, and also the regional economic structures. In the following chapters, the cluster initiatives and state-wide networks listed in the Cluster Atlas are compared to the portfolio below, using a specific selection of indicators to obtain an overview of any existing similarities or differences:

- Cluster initiatives and state-wide networks from Germany as a whole (209 records);
- Cluster initiatives and state-wide networks from Europe as a whole (329 records);
- Cluster initiatives and state-wide networks from Europe as a whole with particularly high-performing management teams (66 records, ESCA Excellence Portfolio).

The data for the comparisons was kindly provided by the European Secretary for Cluster Analysis (ESCA) who has currently benchmarked more than 700 cluster initiatives from all over Europe for comparison. For the comparisons made here, we have used only data that is not older than two years to ensure it is up to date. The networks listed in the ESCA Excellence Portfolio have cluster and network management teams whose performance is above average¹.

The following available indicators for all four peer groups were taken into consideration:

- Age of cluster initiative or state-wide network
- Size and composition of the cluster and network stakeholders
- Human resources of cluster and network management teams
- Financing

Age of cluster initiative or state-wide network

The age of a cluster initiative or state-wide network is usually a good indicator of its performance. One can assume that older and well-established cluster and network managements are higher performing than newer ones. The oldest cluster initiative listed in the Cluster Atlas Baden-Württemberg was founded in 1972, the most recent in 2013. The

average age of cluster initiatives and state-wide networks in Baden-Württemberg, or more precisely the median age, is 7 years.

Fig. 3 shows a comparison of cluster initiatives and state-wide networks in Baden-Württemberg by age. The values do not differ much between the four portfolios, however, the share of well-established cluster initiatives and state-wide networks, i.e. the ones that are 4 years old or more, is the lowest in Baden-Württemberg, approx. 74 %. And this is not surprising because during the past four years, the founding of various new cluster initiatives and state-wide networks has been supported financially in Baden-Württemberg. The number reached its peak during the years 2008 to 2010, with more than twenty new cluster initiatives and state-wide networks established during that time. Cluster initiatives and state-wide networks from the ESCA Excellence Portfolio have the highest share of well-established cluster and network management teams, about 90 %. This observation supports the above thesis that a certain degree of experience and expertise is necessary for an excellent cluster and network management.

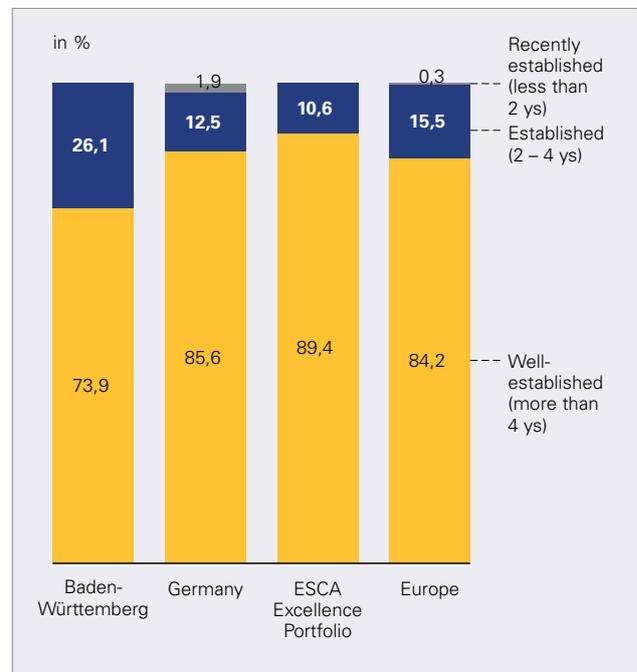


Fig. 3: Age of cluster initiatives and state-wide networks (assessment scale: well-established (more than 4 years old); established (2-4 years), recently established (less than 2 years)).

1 Hantsch, Kergel, Meier zu Köcker 2012: Benchmark pour L*Excellence Du Management Des Poles De Competitivite: http://competitivite.gouv.fr/documents/commun/Documentation_poles/etudes__rapports/Benchmarking%20des%20poles%20de%20competitivite%20France.pdf

Size and Composition

The Cluster Database Baden-Württemberg currently lists 118 cluster initiatives and state-wide networks as well as state agencies. For an overview of the average number of members cluster initiatives and state-wide networks have and because of the strong deviations in the numbers of members, we used the median value. There are 61 members per cluster initiative or state-wide network. This number is higher than the average for Europe, but slightly below the number for Germany as a whole. The difference to the ESCA Excellence Portfolio is even greater. Here, we can see that cluster initiatives in Baden-Württemberg are significantly smaller than elsewhere.

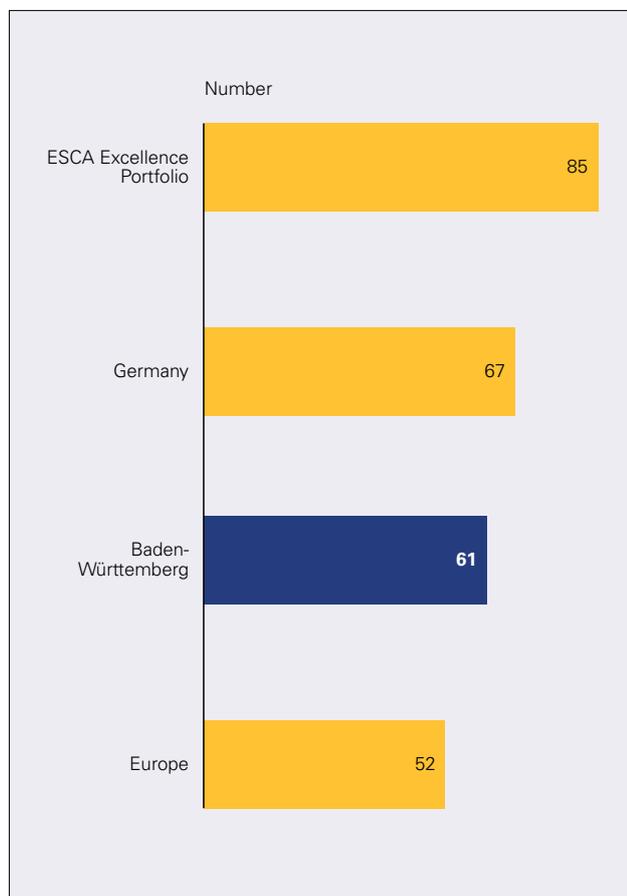


Fig. 4 The median numbers of members per cluster initiative/state-wide network in comparison.

In literature, there are no reliable data or studies that prove that a larger size is beneficial for cluster initiatives in general. However, it is stated that a critical mass is basically required to have involved a representative number of stakeholders in the various differing activities and to bring together the right partners for cooperation projects or R&D activities. The criteria for the Gold Label, the European Cluster Excellence Initiative (ECEI), and accordingly the Cluster-Excellence Baden-Württemberg quality label therefore consider a minimum number of 40 stakeholders a good critical mass for a lively cluster initiative.

Figure 5 shows the distribution of cluster initiatives and state-wide networks in Baden-Württemberg by size. It is apparent here that in the case of the cluster initiatives, about two thirds have more than 40 members and therefore feature this good critical mass. In fact, the maximum value here is in the range of 800 - 1000 members. At the same time it becomes clear that approximately one out of five of all cluster initiatives has fewer than 25 members. The reasons for this are diverse. Enterprises in Baden-Württemberg are often highly specialized and have their focus on regions that are small by area but extremely strong in economic terms. Therefore, the cluster initiatives in this state are extremely focussed on specific topics and regions and also have smaller target groups.

This also shows in the comparison between the regional cluster initiatives and state-wide networks. The state-wide networks have a significantly higher share of networks with more than 40 members (84 %). This is mainly due to the significantly greater catchment area of the state-wide networks that stretch over the entire state of Baden-Württemberg.

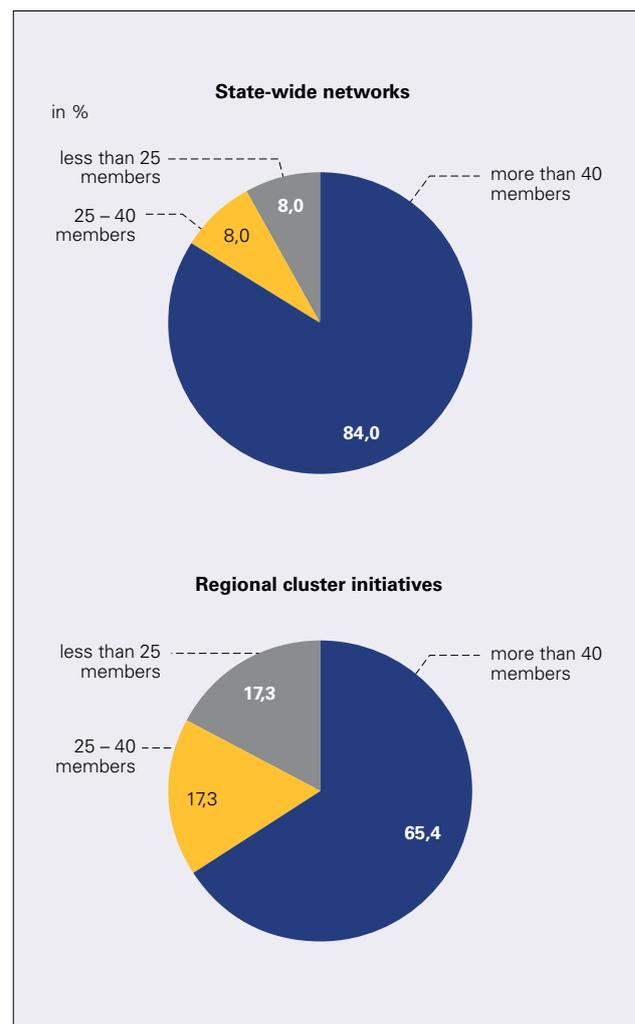


Fig. 5: Distribution of state-wide networks (top) and regional cluster initiatives (bottom) by size

Taking a look at the composition of the cluster stakeholders in the cluster initiatives and state-wide networks in Fig. 6, it becomes obvious that the average number of SMEs in cluster initiatives and state-wide networks is similar to that in initiatives and networks on a national or international level. Also with respect to the other stakeholder groups, for example large corporations, research institutions or other stakeholders, the composition of the Baden-Württemberg cluster initiatives and state-wide networks does not differ significantly from that of other peer portfolios used for comparison.

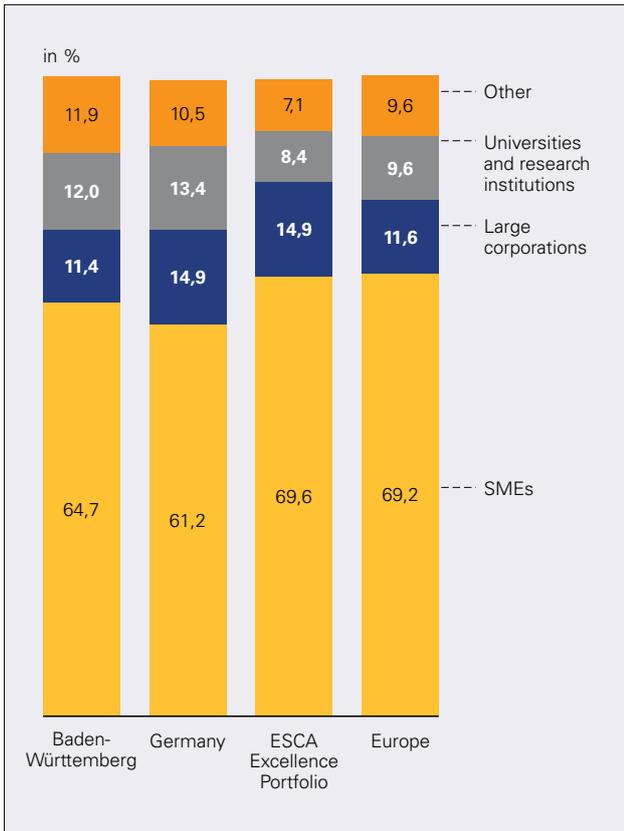


Fig. 6: Average composition of stakeholders in cluster initiatives and state-wide networks in comparison

Staffing of cluster and network management teams

The performance of cluster initiatives and state-wide networks highly depends on the human resources available in the respective cluster and network management teams². If there is a sufficient qualified staff, the management can pro-

vide need-based and professional services and added value for the cluster stakeholders³. Figure 7 shows an interesting result for Baden-Württemberg. About 40 % of the cluster initiatives and state-wide networks either have less than the equivalent of one full-time employee or more than two employees. The share of cluster initiatives and state-wide networks with more than two full-time positions is the highest in the ESCA Excellence Portfolio (86 %). The German and the European peer portfolios show similar values of about 70 %.

The available human resources also reflect the size of the respective cluster initiatives and state-wide networks in Baden-Württemberg. It shows that in Baden-Württemberg, there are many small cluster initiatives that have fewer staff than the equivalent of one full-time employee. All the more, the challenge for these cluster managements is to focus on specific topics and areas and use the resources they have wisely.

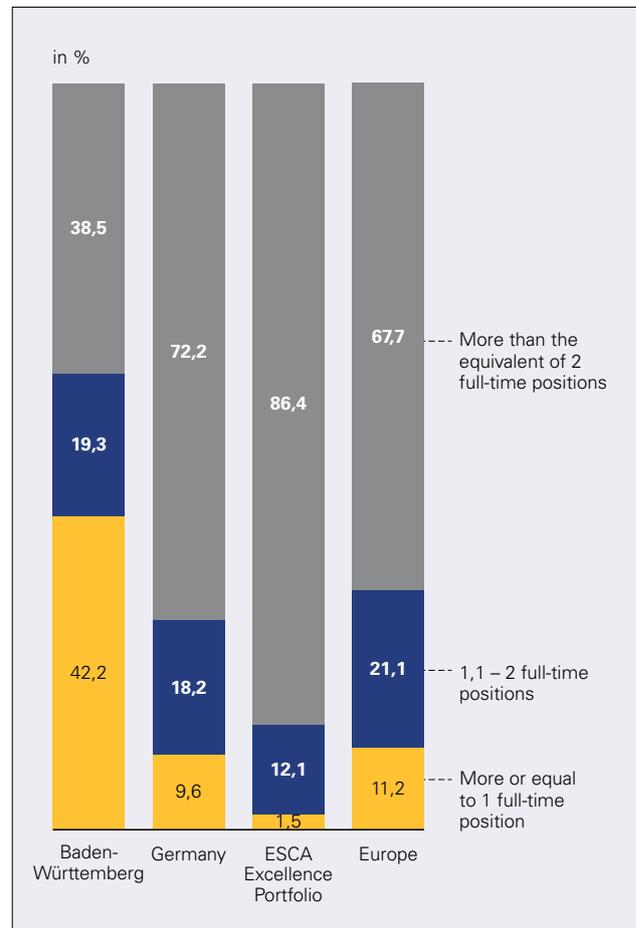


Fig. 7: Staffing of cluster and network management teams in comparison.

2 Kergel, Meier zu Köcker, Nerger: New Approaches to Improve the Performance of Cluster Management Organisations in Europe, Danish Ministry of Science, Technology and Innovation, Copenhagen/Berlin, 2014, <http://www.iit-berlin.de/de/publikationen/new-approaches-to-improve-the-performance-of-cluster-management-organisations-in-europe>.
 3 Lämmer-Gamp, Meier zu Köcker, Christensen: Clusters are Individuals. New Findings from the European Cluster Management and Cluster Program Benchmarking, Danish Ministry of Science, Technology and Innovation, ISBN: 978-87-92776-22-8, Copenhagen/Berlin, 2012.

Financing

Another interesting aspect is the proportion of public or private funding of cluster and network managers. Fig. 8 shows that the cluster initiatives in Baden-Württemberg are clearly less dependent on public funding than the cluster initiatives in Germany as a whole or in Europe. The mean value in Baden-Württemberg is approximately 38 % whereas the peer portfolios show higher values of over 45 %.

The cluster initiatives in Baden-Württemberg are mainly financed by membership fees and the provision of paid services. That means that the cluster initiatives and state-wide networks in Baden-Württemberg have managed to create a service portfolio that is considered real added value by the enterprises for which they are also prepared to pay their fees.

This shows that it is actually possible to inspire companies to engage in cluster initiatives and that the cluster management creates added value by its work. Cluster initiatives are therefore not purely economic-political measures that are initiated and managed by the government but are also the result of a practical cooperation between politics, industry and research. The enterprises' great engagement in the cluster initiatives of Baden-Württemberg underpins another figure. 68 % of the cluster initiatives in Baden-Württemberg have a private funding share of at least 50 %.

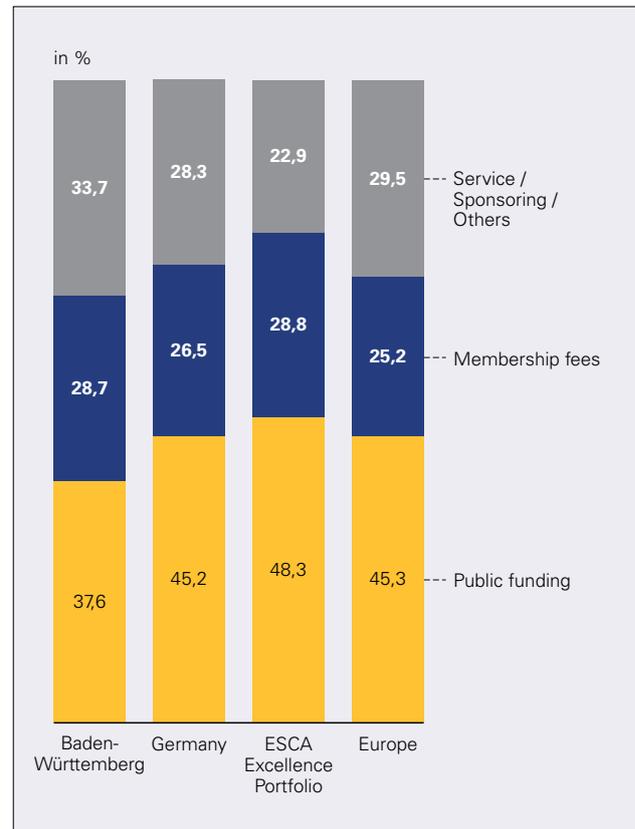
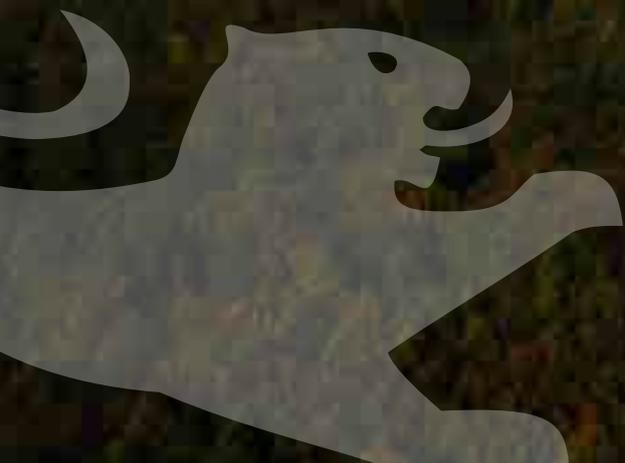
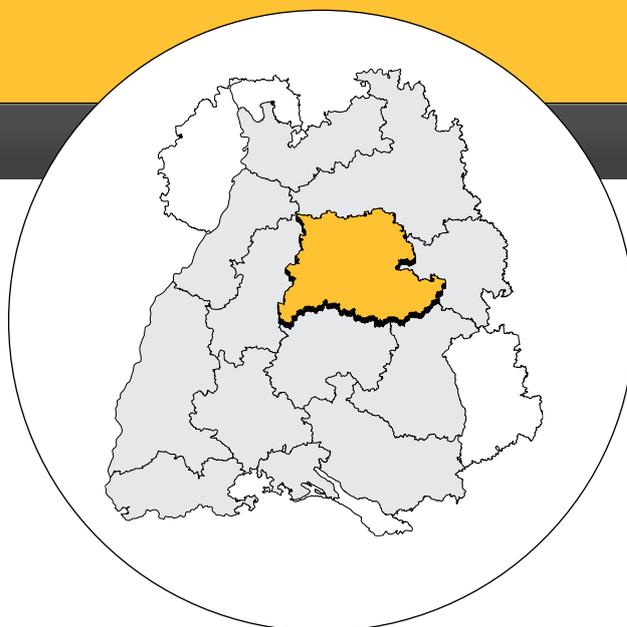


Fig. 8: Average financing structure of cluster initiatives and state-wide networks in comparison.

01



Stuttgart



The region

The Stuttgart region is the areal and economic centre of Baden-Württemberg and stretches over 3,654 km². Numerous globally leading enterprises are located here and make this region a leading engineering location world-wide, with the highest innovative power compared to the other regions in Baden-Württemberg.

Economic centre

The region includes the city of Stuttgart and the surrounding districts of Böblingen, Esslingen, Göppingen, Ludwigsburg and the Rems-Murr-Kreis district. Approximately 2,668,400 people live in this region. More than one in four employees in the state of Baden-Württemberg works in this region.

Compared to the state of Baden-Württemberg as a whole, the economy in the Stuttgart region is not so much characterized by the production industry but rather by the service sector, among other things because the proportion of corporate service providers is higher here than the state average. The basis for this internationally strong competitive position is the areal proximity of the existing research and development competencies to the production capacities of complex system goods.

The most important clusters – automotive, mechanical engineering, and the creative industry – achieve an almost unique degree of added value, among other things because they are closely linked to the corresponding clusters in neighbouring regions.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction, and public sector) include:

- Vehicle production and suppliers
- Metal industry with mechanical engineering
- Production of metal products
- Information services

Compared to other regions in Baden-Württemberg, it ranks top with regard to innovation power.

Numerous globally leading enterprises or their subsidiaries, which have enormous research and development capacities are located here. While the actual level of innovations ranks top of all regions, its innovation dynamic is about the same as the state average.

Region's innovation index

Total index	50.7 %	State 38.8 %
• Level index	52.0 %	State 36.5 %
• Dynamic index	46.8 %	State 45.8 %

Employees in individual sectors*

Production sector	33.9 %	State 36.8 %
Service sector in total	65.8 %	State 62.8 %
• Trade	12.5 %	State 13.5 %
• Providers of corporate services	15.6 %	State 11.8 %
• Transport	4.1 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013

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The region's clusters and cluster initiatives



Automotive cluster

The automotive cluster plays a central role in the Stuttgart region. With its globally leading large manufacturing companies and systems suppliers and the large number of highly competitive medium-sized suppliers, the region hosts nearly the full value chain. The automotive cluster in the Stuttgart region also affects many other regions of the state of Baden-Württemberg.

Cluster initiative Automotive Region Stuttgart (CARS)

CARS and the CARS IT sub-project help strengthen the Stuttgart region as an important vehicle production location on a global scale and promote the region as a location for suppliers of new technologies (for example, electric mobility or automated driving) and services connected to the field of mobility. In addition to the cluster management, the cluster initiative is responsible for providing customized information to their target groups and for improving communication within the cluster initiative.

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Biotechnology cluster

The excellent academic environment of three universities, five universities of applied sciences with focus on biotechnology and the research activities of internationally renowned research institutions in the biotechnology cluster provide the strong foundation that is necessary for translating good basic research into biotechnological applications. With this outstanding academic infrastructure, the BioRegion Stuttgart ranks among the top German BioRegions whose growth potential is reflected in the growing number of biotech companies located in this region. Furthermore, they have intensified their collaborations with other innovative industries such as medical engineering and automation.

BioRegion STERN Management GmbH

In the cities of Stuttgart, Tübingen, Esslingen, and Reutlingen, and in the Stuttgart and Neckar-Alb regions, the BioRegion STERN Management GmbH has been the common competence network and a contact and information centre for start-ups, entrepreneurs, and research institutions in the life sciences industry since 2001. The BioRegion STERN Management GmbH represents their interests in politics, the media and associations and provides advice for applications for public funding and other corporate financing. Important focus areas are regenerative medicine, medical engineering, and automation in biotechnology.

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Engineering-Life Sciences-Automation (ELSA)

The purpose of the Engineering-Life Sciences-Automation (ELSA) cluster initiative is to connect the life sciences industry with engineering-driven medium-sized companies to open up new fields of business where the different clusters overlap. Its intent is to initiate new bilateral projects at these overlapping points and to strategically support cooperation projects within the industry. This cluster initiative was awarded a prize in the regional cluster competition of the Ministry of Economics in 2010. Cluster management is supported with funds from the European Regional Development Fund (ERDF).

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Kompetenznetz Medtech & Biotech

The purpose of Medtech & Biotech competence network is to intensify the collaboration between medical engineering and biotechnology and to strengthen the two industries, making them key technologies of BioRegion STERN. Collaboration of these highly innovative but extremely differing industries will not only bring forward the development and marketing of new biomedical products and therapies but also prepare the path for new convergence technologies.

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€ Finance cluster

After Frankfurt, the Stuttgart financial centre is one of the most significant German financial centres. Besides the largest state bank and the L-Bank, which is the largest business development bank, leading insurance companies and building societies also have their headquarters in the Stuttgart region. Furthermore, Stuttgart hosts the second largest German stock exchange, which is the market leader in the segment of secured derivatives in Europe. Stuttgart also holds a strong market position in the fast-growing leasing market.

Stuttgart Financial – Vereinigung Baden-Württembergische Wertpapierbörse e. V.

To promote Stuttgart as a financial services location, the Vereinigung Baden-Württembergische Wertpapierbörse e.V. established a central office to bundle the interests relating to financial services in the region under the brand name Stuttgart Financial. Co-founders are the Ministry of Finance and Economics Baden-Württemberg and the foundation Stiftung Kreditwirtschaft of the University of Hohenheim. This comprehensive platform for finance-related topics in Baden-Württemberg is to strengthen the financial industry for the benefit of the citizens and the economy.

Vereinigung Baden-Württembergische Wertpapierbörse e. V.

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Health industry cluster

Renowned research institutions and universities, numerous hospitals and clinics, and many small and medium-sized enterprises form the health industry cluster in the Stuttgart region. Main focuses are, for example, regenerative medicine, telemedicine, orthopaedics technology, drug production, health tourism and many other services.

Health region REGINA

REGINA stands for the development of an application centre for regenerative medicine in the area of Stuttgart, Tübingen, and Neckar-Alb. The knowledge and experience of partners from institutes, clinics, enterprises, and health insurance companies are streamlined in this project to offer patients wide access to regenerative medicine.

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Health region Stuttgart

The cluster initiative combines two divisions - the Benefit Region and the GesundheitsRegion Stuttgart. Benefit Region Stuttgart – Initiative für betriebliche Gesundheitsförderung is demand-oriented and informs companies in the region that are not originally from the health sector about corporate health programmes and corporate health management. GesundheitsRegion Stuttgart is primarily offer-oriented, it is a cluster initiative consisting of members who are service providers, research institutions, universities, health insurance companies and public bodies, and intends to intensify collaboration in the health sector.

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Information technology / enterprise software cluster

This cluster consists of a small number of large enterprises on the one hand and a large number of small and medium-sized enterprises on the other. Thus, it covers the entire spectrum of information technology but has its main focus on the automotive and mechanical engineering industries due to their strong representation in this region. New ideas for developments come mainly from young, small and medium-sized IT firms. Enterprise density is particularly high in the area of open source software. Other relevant areas are virtual reality, telematics and mobile IT.

IT Region Stuttgart

The IT Region Stuttgart cluster initiative is not focussed on a specific segment of information technology but rather concentrates on the networking between all stakeholders in the IT industry in the Stuttgart region. Because the IT sector in the Stuttgart region consists of more than 6000 mainly small and medium-sized enterprises, the initiative is to promote cooperation projects and collaboration between the companies that are often very specialized. Another important responsibility of the cluster initiative is to carry out public relations work for IT in the Stuttgart region as this is often underrepresented in the public sphere.

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ITS Baden-Württemberg e. V. (ITS BW)

ITS BW and other innovation and competence centres were founded on the initiative of the Wirtschaftsförderung Region Stuttgart GmbH (WRS) more than 10 years ago. The ITS BW cluster initiative is a network and hub for services and innovations in the area of telematics. As a member of the ITS Network Germany e.V., ITS BW stands for a comprehensive know-how in the areas of transport telematics and transport information services, health telematics and telemedicine, mobile communication, smart home, and everyday technology.

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Software-Zentrum Böblingen / Sindelfingen e. V.

With an office space of 11,000 m², the software centre is one of Europe's largest industry-specific technology centres. The majority of the more than 100 member companies have their headquarters at the competence centre's site in Böblingen. The cluster initiative offers their members office spaces at reasonable rates, comprehensive corporate services and favourable collaboration options. Numerous IT start up companies have found beneficial conditions here.

Software-Zentrum Böblingen / Sindelfingen e. V.

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Virtual Dimension Center Fellbach w. V.

Virtual Dimension Center (VDC) is Germany's leading competence network for virtual engineering. Suppliers of technology, service providers, users, research institutions and multipliers cooperate in VDC's state-wide network along the entire value chain of virtual engineering covering the topics of 3D simulations, 3D visualization, product lifecycle management, and virtual reality. The VDC members strive for increased innovation and higher productivity through an informational and cost advantage.

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Creative industries cluster

The culture and creative industries are also characteristic industries in the Stuttgart region. With 10,000 enterprises and a turnover of approx. EUR 6.6 billion, the region is a clear leader in this industry. Generally speaking, the region features a very strong internal market, with many customers from the industrial sector. This means that the creative industry has excellent opportunities. Local providers of creative services benefit from their close proximity to potential customers and have therefore always worked very closely with the traditional regional key industries such as the automotive and mechanical engineering industries.

Animation Media Cluster Region Stuttgart (AMCRS)

The cluster initiative promotes the transfer of expertise and technology, creates synergies, and strengthens interdisciplinary collaboration. Its goal is to sustainably establish the Stuttgart region as a top location in the field of visual effects and animation on an international scale. In the meantime, there are thirteen VFX service providers and animation studios in Baden-Württemberg which can also offer their capacities in joint international projects, to ensure the required safety and quality and to be able to handle major projects. The cluster initiative promotes these production options not only by being present at important industry events, but also at events organized by the cluster management itself, for example business trips for specific delegates.

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MedienInitiative Region Stuttgart

MedienInitiative Region Stuttgart has been active since 1997 and is part of the creative industry division of Wirtschaftsförderung Region Stuttgart GmbH (WRS). About 350 creative and cultural workers are active in the network and act as spokespersons for the region to strengthen and develop the location. For example, the cluster initiative provides information about news, trends and current events in its monthly newsletter 'in medias res'.

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Film Commission Region Stuttgart

Film Commission Region Stuttgart forms the cluster initiative for all matters of film production. Its regional and industry-specific focus and practical consulting services are its success factors. Its services include, for example, project-based support for finding suitable film locations, for the cooperation with the authorities, and targeted information on production structures in the region. Film Commission plans and realizes projects to support the film industry, starts its own networks, provides training in the Monday seminars, and represents the film location at (inter)national film festivals and exhibitions. Film Commission sees itself as a coordinator at the point where culture, industry, public, and the administration meet.

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Popbüro Region Stuttgart

Popbüro Region Stuttgart formulates and streamlines the concerns of the music industry's cluster initiative based on well-established industry-specific knowledge and expertise, with a focus on practical applications and customers. Positioned between the industry, the cultural sector and the young people, this institution sees itself as a mediator between the music industry, the public, politics and the administration. Its services include advice on specific matters, support programmes, networking, communication and location marketing.

Popbüro Region Stuttgart

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Logistics cluster including intra-logistics

Through the extension of the European Union, Baden-Württemberg has moved to the centre of the trans-European trade relations. The logistics cluster in the Stuttgart region is well-established in economic terms and integrated in the global production processes. Industry, science and research are interlinked for a targeted response to the requirements of small and medium-sized enterprises in the Stuttgart region. Logistics represents an inevitable cross-sectoral function of modern economic systems and over the past years, many completely new functions have been developed. Terms such as supply chain management, e-logistics, connected industry, or value added services describe the deep impact logistics services have on today's production processes.

KLOK Kooperationszentrum Logistik e. V.

KLOK approaches the tasks and issues in logistics that exist in the Stuttgart region and demand integrative solutions. KLOK is in contact with specialists at communal and regional levels and with state, federal, and EC politicians dealing with economic policy. Since the end of 2010, KLOK has also been acting as the agency representing the Logistik-Netzwerk Baden-Württemberg (LogBW), an independent state-wide network. Moreover, it is responsible for initiating and coordinating multi-partner projects to improve the logistics infrastructures, an important field of its activities.

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Aerospace cluster

The aerospace industry looks back on a long tradition in the Stuttgart region. Only few locations offer such a tightly woven and diversified network of large enterprises and medium-sized aerospace companies, universities and research institutions. 25 percent of the Baden-Württemberg companies and 80 percent of the research institutions in this industry are located here. In the Backnang area, the concentration of globally active companies in the area of satellite communication is extremely high and unequalled in Germany.

Deutsches Zentrum für Satelliten-Kommunikation (DeSK)

Companies, scientific institutions and universities in the area of satellite communication joined forces and founded the DeSK in 2008. The goal of the DeSK is to join the participating companies and institutions to form a powerful network. Moreover, its aim is to strengthen the collaboration between companies from the satellite and broadband communication industry in the Stuttgart region to create synergies. In addition, this bundling of expert knowledge serves to make the location's competencies visible and to give it a clear profile. Furthermore, DeSK has initiated activities for winning and binding talent and for conducting research and development projects.

Deutsches Zentrum für Satelliten-Kommunikation

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Production technology cluster

Production technology occupies an outstanding role in the Stuttgart region and is largely characterized by small and medium-sized enterprises. This cluster remains highly competitive due to its innovative power. It is widely diversified with certain emphases in the fields of machine tools and automation engineering. Together with upstream producers of machine components (for example, drives, actuators, controls, sensors, or precision tools), about 800 companies can be directly attributed to this cluster. The European Cluster Observatory has identified this production technology cluster as one of the most important clusters in this field of technology in Europe.

Mechanical Engineering in the Stuttgart Region

The mechanical engineering cluster initiative covers a large number of activities and services to improve the innovation capabilities of regional mechanical engineering companies. Its focus is on services for networking within the industry, on improved access to research findings, and on support for establishing new fields of business – and here mainly the initiative for industrial services in mechanical engineering. This cluster initiative addresses the approximately 800 producers of machines, plants and components, the three universities in the Stuttgart region with a focus on mechanical engineering, and eight non-academic research institutions that closely cooperate with the mechanical engineering industry.

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Kompetenznetzwerk für Industrielle Bauteil- und Oberflächenreinigung Leonberg e. V. (CEC – Cleaning Excellence Center)

Renowned companies from different stakeholder groups exchange their knowledge and expertise in the CEC cluster initiative with regard to the industrial component and surface cleaning process chain; meaning the processes, basic conditions, and the process-related requirements for optimized results in parts cleaning. The benefit for all users is the manufacturer-independent assessment of cleaning tasks and their preparatory, accompanying and follow-up processes in the CEC network.

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Environmental technology cluster

The environmental technology cluster in the Stuttgart region is characterized by universities and research institutions, globally active large-scale enterprises, and also small start-ups. Many of the almost 300 enterprises do their own research and development. Installation businesses and many architects, engineers, and consultants add to this. Companies from the mechanical and plant engineering industries in the Stuttgart region have noted this young industry and benefit from its boom as sub-suppliers.

Clean Tech cluster initiative of the Stuttgart region

With the Clean Tech cluster initiative, Wirtschaftsförderung Region Stuttgart GmbH provides support to companies that are active in this segment. The cluster initiative initiates demonstration projects and support projects and brings together politics, science, and industry through informational programmes and competence centres.

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ENERGETIKOM – Energiekompetenz und Ökodesign e. V.

ENERGETIKOM – Energiekompetenz und Ökodesign e. V. is a non-profit organization. It is independent and supports companies, public institutions, municipalities and private persons with their projects relating to the topics of energy saving, energy efficiency, climate protection, and ecological design. This cluster initiative sees itself as a development and implementing body and as a link between research and the market. ENERGETIKOM develops energy-saving and resource-friendly solutions and concepts which guarantee climate protection and energy efficiency in the projects which are being worked on.

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Environmental technology competence centre – KURS e. V.

This competence centre is a network for regional and supra-regional specialists in the field of environmental technology, resource protection and recycling management. The cluster initiative is a communication and discussion platform organizing scientific events, training programs, and small informal meetings, to promote the transfer of expertise, and to plan and implement R&D projects. The KURS e. V. cluster initiative promotes the dialogue in the environmental sector between the relevant stakeholders in the Stuttgart area and beyond, and acts as a co-publisher of conference publications.

Institut für Siedlungswasserbau, Wassergüte- und Abfallwirtschaft der Universität Stuttgart

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bw-engineers GbR

The bw-engineers cluster initiative with its 21 core members and the extended network of 24 partners represents an important instrument for the internationalization of medium-sized engineering firms. The goal of this group is to facilitate access to foreign markets for Baden-Württemberg's engineering expertise and innovations, through cooperation projects between engineering firms, universities and institutions, and also to support joint general contractor services in the areas of civil engineering, infrastructure and environmental protection in defined target countries.

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Packaging technology cluster

The Stuttgart region shows a specific areal specialization in the field of production technology - namely the packaging technology in the Rems-Murr-Kreis district and in the district of Esslingen. The comprehensive coverage of the value chain from sub-suppliers to mechanical engineering firms and specialized engineering service providers is a special feature here as well.

Packaging Excellence Region Stuttgart e. V.

The competence centre for packaging and automation technology, Packaging Excellence Region Stuttgart e. V., was initiated by the industry and other institutions and organizations and founded in 2007. It serves as a neutral platform for an exchange of experiences and information between the industry, science, and public institutions. The members intend to make the synergies from the individual technical disciplines and from scientific findings accessible for all of them. Packaging Excellence Region Stuttgart e. V. cooperates, for example, with Packaging Valley Germany e. V. in Schwäbisch Hall. This cluster initiative was awarded a prize in the regional cluster competition of the Ministry of Economics in 2008.

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
University of Stuttgart	<p>Faculties: architecture and urban planning; civil and environmental engineering; chemistry; energy, process, and bio-engineering; computer science, electrical engineering and information technology; aerospace and geodesy; engineering design, production engineering and automotive engineering; mathematics and physics; management, economics, and social sciences; humanities. Numerous research centres located at the University, for example:</p> <ul style="list-style-type: none"> • Stuttgart Research Centre for Simulation Technology (SRC SimTech) • High Performance Computing Center Stuttgart (HLRS).
University of Hohenheim	<p>Faculties of natural sciences, agricultural sciences, and business, economics and social sciences and various research centres, for example in the area of bioeconomics.</p>
University of Applied Sciences of Esslingen	<p>Faculties: applied natural sciences; management; automotive engineering; building services, energy, environment; information technology; mechanical engineering; mechatronics and electrical engineering; social work, health care and nursing; engineering management. Transfer through three institutes of applied research: energetic systems; mechatronics; and health and social work; and the institute of sustainable energy engineering and mobility; and the Fraunhofer KEIM Competence Center for Mobility Interfaces. In addition, the Esslingen University of Applied Sciences hosts 17 Steinbeis transfer centres.</p>
Nürtingen-Geislingen University of Applied Sciences	<p>Faculties: business administration and international finance; agriculture, economics and management; landscape architecture, environmental and urban planning; business and law. Transfer through an institute of applied research (IAF) and other specialized institutes at the university, for example, the institute for the automotive industry (Institut für Automobilwirtschaft, IFA).</p>
Hochschule für Technik Stuttgart (University of Applied Sciences)	<p>Faculties: architecture and design; civil engineering; building physics; economics; geomatics, computer science, and mathematics. Transfer takes place through the institute of applied research (IAF) and the Centres for Sustainable Energy Technology (zafh.net), the Centres for Sustainable Urban Development, the Centres for Integral Architecture, the Centres for Geodesy and Geoinformatics, the Centres for Sustainable Management, and the Centres for Industrial Applications in Computer Science and Mathematics, and the Steinbeis Technology Transfer Technical Advisory Service.</p>
Stuttgart Media University	<p>Faculties of printing and media, electronic media, information and communication. Transfer through an institute for applied research (IAF) and four companies of the Steinbeis organization.</p>

Institution	Fields of activity
Baden-Württemberg Cooperative State University (DHBW) Stuttgart	Faculties of economics, technology and social work, Steinbeis transfer centres and consulting centres.
Filmakademie Baden-Württemberg, Ludwigsburg	Courses of studies are film and media, production, film music and sound design; institute of animation, visual effects and digital post-production.
Staatliche Akademie der Bildenden Künste	Study programmes in the areas of visual arts, architecture and design. Research institutions: institute of book design and media; institute of conservation and preservation; Weissenhof institute.
Research and transfer institutions	<p>Institutes of the Fraunhofer Gesellschaft</p> <ul style="list-style-type: none"> • Fraunhofer Institute for Industrial Engineering (IAO) • Fraunhofer Institute for Interfacial Engineering and Biotechnology (IGB) • Fraunhofer Institute for Manufacturing Engineering and Automation (IPA) • Fraunhofer Institute for Building Physics IBP • Fraunhofer Information Center for Planning and Building (IRB) • Fraunhofer Project Group for Processing Technologies in Lightweight Construction (BTL) <p>Institutes of the Max-Planck-Gesellschaft</p> <ul style="list-style-type: none"> • Intelligent Systems • Solid State Research <p>Institutes of the German Aerospace Center (DLR)</p> <ul style="list-style-type: none"> • DLR Institute of Structures and Design • DLR Institute of Vehicle Concepts • DLR Institute of Technical Physics • DLR Institute of Engineering Thermodynamics • DLR Institute of Combustion Technology • DLR Institute of Solar Research <p>Institutes of Hahn-Schickard-Gesellschaft für angewandte Forschung e. V.</p> <ul style="list-style-type: none"> • Institute of microsystems technology (HSG-IMAT) • German Institutes for Textile and Fibre Research Denkendorf (DITF) • Institute for Textile Chemistry and Chemical Fibers Denkendorf (ITCF) • Institute of Textile Technology and Process Engineering Denkendorf (ITV) • Center for Management Research (DITF-MR) <p>Other institutions</p> <ul style="list-style-type: none"> • Automotive Simulation Center Stuttgart (ASCS) • Research Institute of Automotive Engineering and Vehicle Engines Stuttgart (FKFS) • Hohenstein Institute for Textile Innovations (HIT) • Kompetenznetz Verfahrenstechnik Pro3 e. V. • Institute of Transportation Research (VWI) • Institute of Microelectronics Stuttgart (IMS CHIPS) • Energy Research Center Stuttgart (ZfES) • Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW)





Heilbronn- Franken



The region

The Heilbronn-Franken region is located in the north-eastern part of Baden-Württemberg and is the state's largest region according to area, with an area of 4,765 km². It has approx. 870,000 residents. As part of the European Metropolitan Region of Stuttgart, it features the highest density of globally leading companies of all regions in Germany in relation to the number of residents.

Highest density of global leaders

Compared to the state of Baden-Württemberg as a whole, its economy is strongly production-based. Therefore, its share of the service sector as a whole is below the state average.

The industry in this region has a long and diverse history. Due to the high number of employees working in cluster enterprises, Heilbronn-Franken is considered a true cluster region.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction, and the public sector) include:

- Metal industry with mechanical engineering and production of metal products
- Vehicle production and suppliers
- Food industry including production of food and animal feed
- Financial services

Its innovation power ranks in the middle compared to that of other regions. Important research and development locations are Abstatt, Untergruppenbach, and Hardthausen-Lampoldshausen.

Region's innovation index

Total index	31.0 %	State 38.8 %
• Level index	26.0 %	State 36.5 %
• Dynamic index	45.8 %	State 45.8 %

Employees in individual sectors*

Production sector	43.5 %	State 36.8 %
Service sector in total	55.9 %	State 62.8 %
• Trade	15.0 %	State 13.5 %
• Providers of corporate services	10.2 %	State 11.8 %
• Transport	3.8 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013

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The region's clusters and cluster initiatives

Automotive cluster

The automotive industry has a long tradition in the city and district of Heilbronn. Over time, it has become the key industry in this area. More than 20,000 employees work directly in the automotive industry, and the trend is rising. Thousands of other jobs in the many supplier firms are directly related to the automotive industry. This includes a number of engineering service providers, producers of electronic components, software firms, logistics companies and specialists for surface finishing. This means that the entire value chain of the automotive segment is present.

AutomotiveDIALOG in the Heilbronn economic area

With its motto "Profitable growth for our region", this cluster initiative, that was initiated by Wirtschaftsförderung Raum Heilbronn GmbH in 2007, intends to strengthen the region's attractiveness and competitiveness. Its main activities are location marketing, initiation of cooperation projects, research and development activities and activities for increasing the availability of highly qualified personnel. AutomotiveDIALOG promotes the regional automotive sector and maintains good connections with other stakeholders in Baden-Württemberg through automotive-bw.

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Plastics technology and plastics processing cluster

Within the Heilbronn-Franken region, two cluster-like structures can be identified in the area of plastics - the companies in the Hohenlohe district have a stronger focus on the production and marketing of finished plastic products while the companies in the larger Heilbronn area have their focus on the areas of plastics processing, injection moulding, die and mould making. The customers who require the films, high-tech synthetic materials, and various types of artificial leather come from the furniture, automotive, fashion, or construction industries. This portfolio also includes complete construction or development services for the plastics industry.

KunststoffDIALOG in the Heilbronn economic area

More than 200 companies form the plastics industry cluster in the Heilbronn economic area comprising the city and district of Heilbronn. The KunststoffDIALOG cluster initiative has established the structures for long-lasting networking between companies from all sectors of the plastics industry. KunststoffDIALOG organizes plastics forums in form of technology-oriented informational events which are the basis for the knowledge transfer from universities and research institutions to enterprises. It organizes the participation in trade fairs, designs advertising brochures and it will, in the future, organize technology days at which start-up companies can introduce themselves to well-established enterprises.

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Lab glass cluster

In Wertheim, the northernmost part of the Heilbronn-Franken region, the foundation stone for a new lab glass cluster was laid about 70 years ago. The establishment of a glass factory was the start of a catching up industrialization. Most of the companies that settled here originated in Thuringia. However, the glass sector underwent fundamental structural changes in the 1970ies as glass was increasingly substituted by plastic. Through diversification, towards gift articles and liquids handling, the segments have been expanded. But, mainly in the traditional lab glass production, the cluster enterprises still have the edge in quality and precision.

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Medical engineering cluster

A medical engineering cluster was established by the targeted settling of companies at the Heilbronn Future Park "Wohlgelegen". The driving force here is the Heilbronn Future Fund that supports, for example, young companies from the medical and biotechnology industries by investing capital. In close cooperation with the Future Fund, the municipality of Heilbronn and the housing development company Stadtsiedlung Heilbronn have established a forward-looking infrastructure around the Future Park that allows urban production which meets the latest criteria. The cluster's focus is on the development of solutions for the medical treatment of heart and lungs. MedTec companies work closely together with the local clinics, they cooperate with the Heilbronn University of Applied Sciences and with each other.

MedTecForum Heilbronn

The focus of this cluster initiative is on the development of solutions for the medical treatment of heart and lungs. The companies work closely together with the local SLK clinics, they cooperate with the Heilbronn University of Applied Sciences and with each other. To strengthen the positive development of the cluster initiative and Heilbronn's transformation into a knowledge hub and attractive MedTec location, the Heilbronn-Franken Chamber of Commerce and Industry set up the framework for this network of cluster companies, the University of Applied Sciences, the Future Fund, the municipal administration, and the housing development company Stadtsiedlung Heilbronn under the name MedTecForum Heilbronn. All of the stakeholders here benefit from the exchange of information and experiences as well as from common projects.

MedTecForum Heilbronn

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Metalworking cluster

The metal industry has been well established in the city and district of Heilbronn. Almost 7,000 employees subject to social insurance contributions work in more than 160 metalworking enterprises. The metalworking sector which is basically formed by small and medium-sized enterprises is a central pillar of the production industry in this economic area. Especially the automotive industry and the mechanical engineering and construction industries benefit from the skills and competencies of metalworking companies, in particular from those in the area of metal finishing. The production companies' portfolios range from the production of prototypes to small series and mass production.

MetallDIALOG

More than 250 companies form the cluster initiative of the metal industry in the Heilbronn economic area comprising the city and district of Heilbronn. With the MetallDIALOG cluster initiative, the structures for long-lasting networking between companies from all sectors of the metal industry have been established. MetallDIALOG organizes metal forums in the form of meeting points for companies with differing subject matters or topics which are the basis for the knowledge transfer from universities and research institutions to enterprises, it organizes trade fairs, designs joint advertising brochures and it will organize technology days at which start-up companies can introduce themselves to well-established enterprises.

MetallDIALOG

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Assembly and fastening technology cluster

The foundations for the Hohenlohe assembly and fastening technology cluster were laid in 1898 when the hardware factory L&C Arnold was established. Particularly after World War II, several company foundations increased the speed of the cluster development. Basically, the core of the cluster is the trade with assembly and fastening technology. This includes sophisticated logistics concepts but also the production of screws and fastening materials. In addition to the trade enterprises, industrial customers are of great importance for the customer base here. Direct international sales represent an important distribution channel. The cluster has its centre in Künzelsau and comprises a total of 27 enterprises.

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Paper processing cluster

The development of the paper processing cluster started in Heilbronn. Its foundations were laid in the early 19th century when the two firms Rauch and Landerer were established. Even today, the proportion of employees in the paper, publishing and printing industry is higher than average which is mainly due to the fact that the number of employees could be kept at almost the same level over the past decades. A major share of the industrial paper processing industry is occupied by the folding box industry, another by the production of machines for the paper industry. Paper products for consumers are produced in Heilbronn, for example, products for school and office supplies. In addition, envelopes, pouches, and bags are produced in the millions here.

CCI management workgroup “printing, packaging, media”

Headed by the Heilbronn-Franken Chamber of Commerce and Industry, currently 14 medium-sized companies from the printing, packaging and paper cluster initiative have formed an active entrepreneurs network. For more than 15 years, these entrepreneurs have been meeting regularly for structured and pragmatic benchmarking at the top-management level. They also exchange their experiences and opinions on management and leadership-related topics.

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Environmental technology cluster

The environmental technology cluster has its areal emphasis in the Hohenlohe district. Its starting point was a regional support programme for waste reduction. Over the past decades, this has developed into an association of different stakeholders along the value chain, with the common goal of contributing to a sustainable economy by improving energy efficiency in the industry and in trade.

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Valve technology, measurement and control cluster

After World War II, the development of a temperature controller for a poultry breeding device became the base technology for the valve, measurement and control technology cluster. Innovations that followed were, for example, bar-type thermostats, gas and oven temperature control units, steam control valves, solenoid valves for washing machines, or closed loop controls for liquids. Then followed valves made of plastic or valves for sterile applications in the pharmaceutical or biotechnology industries. A speciality are coaxial type valves for extremely high pressures. The cluster is supplemented by highly sophisticated sensors and electronics for electronic motors. It stands for competition and cooperation through a multi-directional supplier relations.

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Fan and ventilation technology cluster

The development of an external rotor motor was the foundation stone for the Hohenlohe fan and ventilation technology cluster. Through the wide range of applications for fans, many spin-offs have resulted in the Hohenlohe district becoming the location with the highest density of fan and ventilation technology firms world-wide. These companies are in fierce competition which has led to continuous innovation activities. Furthermore, various supplier companies have settled there which extend the regional value chain. The companies' customer bases are extremely versatile too because fans or ventilation systems are used almost anywhere - from refrigerated display counters to air conditioning and ventilation systems.

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Packaging technology cluster

Around 1900, the foundations for today's packaging technology cluster were laid in the district of Schwäbisch Hall. The starting point was the establishment of the Ganzhorn firm, followed by Optima only a few years later. Over the years, many companies have settled in this area or have been founded as spin-offs of existing enterprises. In the meantime, some of them have become global leaders in their respective niches of the market, others are well on their way. An average of approximately 80 % of the products are exported by the packaging machine manufacturers. Thus, the district of Schwäbisch Hall has become the centre of the packaging machine industry world-wide. Approximately 7,000 employees work for the almost 40 companies in this cluster.

Packaging Valley Germany e. V.

Packaging Valley links about 40 companies from the packaging industry, with its focus on packaging machine engineering. In the Metropolitan Region of Stuttgart, leading companies, inventors and designers of comprehensive packaging technology have settled closely around the cities of Schwäbisch Hall and Crailsheim. The cluster initiative markets this benefit for customers world-wide. The cooperation between science and industry results in benefits for innovations and training as well as the recruitment of new employees. The association was awarded a prize in the regional cluster competition of the Ministry of Economics in 2008 and received funding as a cluster initiative together with the Packaging Excellence Region Stuttgart e. V.

Packaging Valley Germany e. V.

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
<p>Heilbronn University of Applied Sciences with RWH Künzelsau (Reinhold-Würth-Hochschule) and Campus Schwäbisch Hall</p>	<p>Technical study programmes: mechanical engineering and electronics including automotive systems Engineering, electronics and information technology, mechanical engineering, mechatronics and microsystems engineering, robotics and logistics, process and environmental engineering, technical management, medical informatics, information management in medicine, software engineering, selected business-oriented courses of study: Business administration, business administration in transport and logistics management, electronic business, business management, business administration in transport and logistics (master's degree), economics and technology.</p> <p>Campus RWH Künzelsau: Drive systems and mechatronics, energy management, industrial engineering, technical management, building systems technology, business administration and culture, leisure, sports management, business administration and marketing. Transfer mainly through ten companies belonging to the Steinbeis organization and the Institute of Applied Research (IAF).</p> <p>At the Schwäbisch Hall campus, the courses of study are business-related: for example, management and procurement, business management and sales, management and corporate accounting, and business administration and human resources management.</p>
<p>Baden-Württemberg Cooperative State University (DHBW) Heilbronn</p>	<p>The Baden-Württemberg Cooperative State University offers various dual courses of study in the area of business administration at its Heilbronn location. These are the areas of trade (consumer goods, textile management), food management, and services management (human resources and education, media and communication, sports management, consulting and other services, and non-profit organizations NPO).</p>
<p>Baden-Württemberg Cooperative State University (DHBW) Mosbach, Campus Bad Mergentheim</p>	<p>The Cooperative State University offers the courses of study of International Business, Health Management, and Innovation and Product Management in the area of industrial engineering at its Bad-Mergentheim campus.</p>

Institution	Fields of activity
<p>Research and transfer institutions</p>	<p>Bildungs- und Technologiezentrum der Handwerkskammer Heilbronn (BTZ Heilbronn) At the BTZ Heilbronn, a centre of education and technology of the Chamber of Handicrafts, science and industry are working together to explore the latest methods and technologies for the trades. There is, for example, a competence centre of “Renewable energy technology”.</p> <p>German Aerospace Center (DLR), Lampoldshausen site The DLR site in Lampoldshausen, with about 220 employees today, was founded in 1959 as a test site for testing liquid rocket engines and started operation in 1962. A key responsibility of the DLR site in Lampoldshausen is the planning, construction and operation of test stands for space engines for the European Space Agency (ESA) and also in cooperation with the European space industry.</p> <p>Fraunhofer Institute for Silicate Research ISC Würzburg, Bronnbach Branch Focus on: new testing methods and modern machining technologies specifically for the laboratory glass sector, conservation and coating programmes for cultural assets at risk, close cooperation with the research association Forschungsgemeinschaft Technik und Glas (FTG).</p> <p>Lehr- und Versuchsanstalt für Wein- und Obstbau Weinsberg This institute run by the state of Baden-Württemberg acts as a training college (in viticulture, oenology, fruit farming and distillery) and quality inspection centre. The Weinsberg state vineyard is also affiliated with this institute.</p> <p>Technology Transfer Center, Lampoldshausen Responsibilities: support the cooperation between scientists, engineers, technicians and research-oriented craftsmen, knowledge transfer from science to industry, provision of expertise and infrastructure. Goals: boost exchange of knowledge and information by technology transfer, maintain contacts to enterprises, universities, research institutions, and federal and state authorities.</p> <ul style="list-style-type: none"> • Member of the LRBW aerospace forum, Forum Luft- und Raumfahrt Baden-Württemberg e.V. • Project partner of the Future Aerospace Network (FAN) cluster initiative • Member of the association of technology and start-up centres in Baden-Württemberg, Verband der Baden-Württembergischen Technologie- und Gründerzentren e. V. • Forum Ariane Lampoldshausen e. V.



Ost- württemberg



The region

The Ostwürttemberg region covers an area of 2,138 km² and has about 435,000 inhabitants. This region includes the two districts of Heidenheim and Ostalbkreis. The economy here is clearly more production-based than in the rest of Baden-Württemberg. Due to the innovation power of the high-performing small and medium-sized businesses, the global leaders and the close cooperation of businesses and science, this region ranks among the top regions of the German patent statistics.

Close cooperation between industry and science

Its inclusion in the metropolitan region of Stuttgart and its proximity to the Ulm area are beneficial for the strong networks in the areas of the metal industry, mechanical and plant engineering including tools, or automotive, as well as in other cross-sectoral industries, for example photonics or surface technology.

The region's clusters and their historic structures are based on early industrial developments in many areas, especially in the areas of metal machining and processing. This applies to surface technology but also to the automotive sector, the area of mechanical and plant engineering including tools, and the creative industry. Logistics play an increasingly important role for many enterprises in the Ostwürttemberg region.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction, and public sector) include:

- Metal industry with mechanical engineering and production of metal products
- Vehicle production and suppliers
- Production of electrical equipment
- Production of data processing equipment and electronic and optical products

Its innovation power ranks above average compared to other regions. Its innovation index corresponds to the state average.

Region's innovation index

Total index	38.0 %	State 38.8 %
• Level index	35.6 %	State 36.5 %
• Dynamic index	45.5 %	State 45.8 %

Employees in individual sectors*

Production sector	47.3 %	State 36.8 %
Service sector in total	52.3 %	State 62.8 %
• Trade	11.7 %	State 13.5 %
• Providers of corporate services	8.6 %	State 11.8 %
• Transport	3.4 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013

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The region's clusters and cluster initiatives

Automotive cluster

The Ostwürttemberg region has a closely knit network of companies and institutions in the automotive industry and there are several university and research institutions that address the needs of this industry. More than 200 enterprises providing in excess of 30,000 jobs are direct or indirect suppliers to producers of passenger cars, light and heavy commercial vehicles, and special purpose vehicles. They represent the pilot industries that are relevant for automobile production and benefit from their proximity to important suppliers and a two-digit number of OEMs (Original Equipment Manufacturers) that are located in a radius of only 300 km. It ranks third in a national ranking of 97 regions with regard to patents and patent registrations in the area of mobility. This shows the cluster's innovative power and technological capacities.

Automotive-Initiative Ostwürttemberg

In addition to the creation of transparency, Automotive-Initiative Ostwürttemberg aims to create networks between the automotive stakeholders – within the region but also on state level – to establish cooperation projects and value adding relationships. Several projects and events accelerate the knowledge transfer between universities, R&D institutions and enterprises. Its main focus here is on topics such as new construction and development principles, simulation methods, and quick processes or the changing role of design in the automotive industry. This cluster initiative is also strongly involved as a partner in the state-wide automotive-bw network.

Automotive-Initiative Ostwürttemberg
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Energy cluster

A large number of small and medium-sized companies operating in many different areas of the renewable energy industry are located in the Ostwürttemberg region. These companies cover various segments of the value chain, from energy production to energy storage. Institutions like the University of Aalen, the Cooperative State University of Heidenheim, or the innovation centre for plant and energy engineering play an important role in research and development and in education and training. Model projects such as, for example, the energy independent town of Rainau, the bioenergy village of Gussenstadt or the electric mobility model community of Schwäbisch Gmünd use new approaches for the realization of the energy transition.

biomastec: new biomass efficiency

The biomastec cluster initiative furthers the motto of bioeconomy. The goal of this cluster initiative sponsored by the Federal Ministry for Economic Affairs and Energy is the market-oriented research and development of innovative processes, products, and technical services for the utilization of waste bioresources. biomastec's unique selling proposition is that it covers the entire biomass value chain. It is mostly the small and medium-sized companies (SMEs) as well as research organizations and universities which have joined the biomastec initiative that is active on a cross-regional level.

biomastec: neue BiomasseEffizienz c/o EurA Consult AG

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Forestry and timber cluster

This cluster features an extremely complex service range that has its base in the Ostwürttemberg region and the district of Schwäbisch Hall and that basically covers all areas of the timber value chain. Approximately 900 enterprises can be allocated to this cluster. These companies, of every size, are directly integrated or act as suppliers to companies along the value chain. In addition to the small companies, which traditionally represent a large market share in this segment of timber processing, there are also medium-sized and large enterprises that are leaders in their market segments. The saw mill density here is the highest in Germany but the timber-related mechanical engineering and toolmaking are strongly represented as well.

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Creative industries cluster

About 250 design studios, advertising and multi-media agencies, architects and other creative service providers in the entire region make Ostwürttemberg and its capital Schwäbisch Gmünd a cluster and industrial location with strong competencies in design and a high innovation potential. In particular the University of Design Schwäbisch Gmünd (HfG) plays an important role as a talent pool and an incubator for start-ups. The number of designers in Schwäbisch Gmünd is so high that the city was once called "Germany's secret design capital" by the German Financial Times.

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Logistics cluster

The Ostwürttemberg region is located in the middle of the two most powerful German states in economic terms, Baden-Württemberg and Bavaria, and directly on the A7 motorway, the connection between north and south, close to the A7/A8 motorway junction. It can easily be reached from Stuttgart, Ulm, Würzburg and Munich. Numerous new settlements of logistics enterprises benefit from this central location. The production location of Ostwürttemberg realizes the importance of the logistics industry for its maintenance and therefore promotes the industry and strengthens the awareness for its services in the public sphere.

Wirtschaftsförderungsgesellschaft mbH Region Ostwürttemberg (WiRO)

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Mechanical and plant engineering and toolmaking cluster

In the Ostwürttemberg region, more than 300 enterprises can be allocated to the mechanical and plant engineering and toolmaking industry. The portfolio of companies ranges from small specialist forges to the typical flexible medium-sized enterprise and the big global players which set the trends in the international markets. You can find many market leaders or hidden champions in the cluster. They are supported by a large number of universities and research institutions that offer customized services. In Ostwürttemberg, the manufacture of machine tools, assembly machines and systems, and the materials handling and drive technology is of utmost importance.

Mechanical and plant engineering and toolmaking Ostwürttemberg

In addition to creating transparency, the Maschinen-, Anlagen- und Werkzeugbau Ostwürttemberg cluster initiative aims to create networks between the industry stakeholders – within the region but also on the state level – to establish cooperation projects and value adding relationships. Several projects and events accelerate the knowledge transfer between universities, R&D institutions and enterprises. The main focus here is on current innovation and sustainability-related topics such as energy efficiency, resource friendliness or production methods (for example, additive production).

**Maschinen-, Anlagen- und Werkzeugbau
Ostwürttemberg
c/o Wirtschaftsförderungsgesellschaft mbH
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Surface technology cluster

In Ostwürttemberg, surface processing has a century-old tradition. With its origins in the craft-based traditional manufacture of gold and silverware, it has developed into a more and more technology-based industry over the past decades. Today, Ostwürttemberg is an important centre for surface technology with its numerous partly globally active and well-known research and transfer institutions, educational and training institutions, associations and enterprises that mutually benefit from the great networking potential here. The result is that practically all of the popular surface technologies for the most different applications are prominently represented here.

fotec – the functional surfaces network

This cluster initiative aims to initiate and realize R&D projects and to provide information and the exchange of information about new technologies relating to the topic of 'functional surfaces'. Besides the meetings of the project groups, there are regular user forums and presentations of the cluster initiative at trade fairs. The goal of these presentations and the exchange of new technologies is to initiate and realize specific support programmes. Their results enter the market as quickly as possible which will then also improve the competitiveness of the network members. The cluster initiative is open for more enterprises and research institutions.

fotec – Funktionale Oberflächen c/o EurA Consult AG

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Photonics cluster

In the Photonic Valley Ostwürttemberg, approximately 60 enterprises belong to the photonics industry, for example Carl Zeiss. It includes all sizes of enterprises and altogether they employ about 8,000 people. With the Aalen University of Applied Sciences - one of the most research-driven universities of applied sciences in the state - the cluster has an institution that has turned out to be of tremendous importance for the education of highly qualified specialists in the area of photonics. In addition, the region hosts the state-wide network Photonics BW e. V. and two Steinbeis transfer centres that are explicitly engaged in this industry. On a national level, the Ostwürttemberg region is the one with the highest patent intensity in the area of "measuring, testing, optics, and photography".

Wirtschaftsförderungsgesellschaft mbH Region Ostwürttemberg (WiRO)

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
Aalen University of Applied Sciences – Technology and Economics	<p>About 50 Bachelor and Master study programmes, full or part-time, with a focus on practice and aligned to the demands of the regional industry in the faculties of chemistry, electronics and computer science, mechanical engineering and materials science, optics and mechatronics, and management & business sciences. In addition, part-time MBA studies at the Aalen University of Applied Sciences and the Cooperative State University of Heidenheim (Graduate School Ostwürttemberg, GSO).</p> <p>Research and transfer through, for example, the Centre of Optical Technologies (ZOT), the Cast Metal Research Centre (Foundry Technology Aalen - GTA), the Institutes of Applied Research (IAF), Materials Research Institute Aalen (IMFAA), Research Institute for Innovative Surfaces (FINO), Institute of Applied System Dynamics (IAS) and Product Development, and the cross-university Centres of Applied Research (ZAFH Photon and Spantec-light) and the Innovation Centre at the Aalen University (INNO> Z).</p>
University of Design Schwäbisch Gmünd	<p>Education of communication, interactive, product, and strategic designers; various research and development projects.</p>
Baden-Württemberg Cooperative State University (DHBW) Heidenheim	<p>Selected technical and economic study programmes, for example: mechanical engineering, computer science, business informatics, industrial engineering, business administration - service sector marketing / media and communication, business administration - transport and logistics. And various study programmes in the field of health.</p> <p>Part-time MBA study programm at the DHBW Heidenheim and the Aalen University of Applied Sciences (Graduate School Ostwürttemberg, GSO).</p>
Schwäbisch Gmünd University of Education	<p>Various cluster-relevant Bachelor, Master and advanced study programmes, for example, health education, engineering education or media education.</p>

Institution	Fields of activity
<p>Research and transfer institutions</p>	<p>Research Institute for Precious Metals and Metals Chemistry (fem) The Research Institute for Precious Metals and Metals Chemistry in Schwäbisch Gmünd, a member of the Innovationsallianz Baden-Württemberg (innBW), has operated as an independent not-for-profit institute in the fields of materials science and surface technology since 1922. Nearly 80 scientists, engineers, and technicians develop new materials, surfaces and processes for the industry. Its portfolio ranges from short-term solutions to comprehensive development projects. The fem institute's services and activities are interdisciplinary and include, for example, solutions for electric mobility or accredited testing methods for the automotive industry and its suppliers, for tools and machine components.</p> <p>Technische Akademie für berufliche Bildung Schwäbisch Gmünd e.V. For example, training and advanced training courses in the area of electrical engineering / electric mobility. With its "Mobile training centre for electric mobility" project and the "Demo workshop", the technical academy for vocational training teaches the necessary technological skills and other requirements.</p> <p>More than 30 companies as part of the Steinbeis organization.</p>





Mittlerer Oberrhein



The region

The region of Mittlerer Oberrhein is the smallest of the twelve Baden-Württemberg planning regions area-wise, with an area of 2,137 km², but it has more than a million inhabitants. It is centrally located in the Upper Rhine area, between the Frankfurt am Main and Basel metropolitan areas. The region includes the cities of Karlsruhe and Baden-Baden and the two districts of Karlsruhe and Rastatt.

Leading in information and communication technologies and in nanotechnology

Especially Karlsruhe and the surrounding areas are among Europe's leading locations in the area of information and communication technologies, nanotechnology, and in the automotive, energy, and mobility sectors, and the culture and creative industries. Due to its geographical location, directly bordering the state of Rhineland-Palatinate and the French department of Bas-Rhin, some of the region's cluster initiatives operate across the state and country borders.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction, and the public sector) include:

- Vehicle production and suppliers
- Production of electrical equipment
- Information technology service providers
- Mechanical engineering

Its innovative power shows in the tightly woven network of universities, research institutions and high-tech enterprises. With the Karlsruhe Institute of Technology (KIT), several Fraunhofer institutes, and the FZI Forschungszentrum Informatik research centre, to name just a few of the renowned institutions, the density of science competencies in this area is extremely high. The innovation index has increased and now equals the state average.

Compared to the state of Baden-Württemberg as a whole, the region of Mittlerer Oberrhein is characterized more by the service sector than by production. The share of corporate service providers is also above the state average.

Region's innovation index

Total index	38.4 %	State 38.8 %
• Level index	36.5 %	State 36.5 %
• Dynamic index	44.1 %	State 45.8 %

Employees in individual sectors*

Production sector	32.4 %	State 36.8 %
Service sector in total	67.3 %	State 62.8 %
• Trade	13.4 %	State 13.5 %
• Providers of corporate services	14.1 %	State 11.8 %
• Transport	4.4 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013

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The region's clusters and cluster initiatives

Automotive cluster

Within the automotive cluster, the Karlsruhe Technology Region is home to production sites of the Mercedes-Benz group and, directly opposite Karlsruhe, on the other side of the Rhine in Wörth, is the world's biggest Mercedes-Benz truck factory. In addition, the region features an outstanding research infrastructure in the automotive area. This includes, for instance, the Karlsruhe Institute of Technology (KIT), the Fraunhofer Institute for Chemical Technology (ICT), an internationally recognized competence centre in the field of airbag technology, the Fraunhofer Institute for Information and Data Processing (IITB) or the Forschungszentrum Informatik (FZI) research centre.

Automotive Engineering Network (AEN) Southwest

This cluster initiative founded in 2004 bundles the interests of services providers, suppliers, and research institutions in the automotive sector. Its focus is on the transfer of knowledge and the collaboration between science and industry. In this respect, the AEN represents an important communication and cooperation platform and supports the development of technological pilot projects. Innovative automotive engineering and electric mobility work side by side here.

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KITe hyLITE: Karlsruhe innovation cluster

The development of lightweight structures in vehicle production results in lower fuel consumption and thus, reduced emissions. New function-integrated designs enhance product attractiveness and also passive and active vehicle safety. The goal of the KITe hyLITE initiative is the quick translation of innovative technologies, production methods and products into small and high-volume series that can be realized in an economic way. The KITe hyLITE is the platform for the composites technology cluster where several research institutes in Baden-Württemberg develop innovative processes for the large-scale production of fibre composite components in cooperation with partners from the industry.

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Energy cluster

The Karlsruhe region hosts numerous companies and also research institutions operating in the area of energy efficiency. Together they form the energy cluster. The value chain focuses on the connection between IT and the energy industry, on increasing energy efficiency, and the use of new technologies for biomass and geothermal energy production.

EnergieForum Karlsruhe

The EnergieForum Karlsruhe is a strong regional cluster initiative consisting of about 75 companies and approximately 40 research and development institutions, all of them operating in the energy sector but with differing focuses. It combines the knowledge of more than 270 experts in the energy sector. Its goal is to ensure a rapid transfer of competencies and knowledge of research and development results to the companies there, to enable them to develop new products, services and markets in this field. Moreover, energy productivity should be increased by common actions which can be realized on a national or international level.

Wirtschaftsförderung Karlsruhe

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Information technology / enterprise software cluster

The ICT cluster in the Karlsruhe area has evolved over the past 25 years and represents the cluster with the greatest development potential in the region. Value adding processes focus on information technology (IT), primarily technical software. This is used mainly in the business-to-business segment, as well as directly in the IT and media industry. The Mittlerer Oberrhein region is a top ICT location with more than 4,100 companies in the information and communication technology industry (ICT) in the region, and even on the European level it is an important location. The investments in research and development by the companies in this region are the highest among all European ICT enterprises and their research activities are the strongest in Europe.

CyberForum e. V.

With more than 1,000 members, the CyberForum e. V. is the largest regionally active high-tech entrepreneurs' network in Europe. It is a network of entrepreneurs, founders, creative people, employees in research institutions, students, business angels, and trainees. In 2013, the CyberForum received awards from the Ministry of Finance and Economics of Baden-Württemberg and the European Cluster Excellence Initiative as the most successful cluster initiative at state level and the leading IT network at European level.

CyberForum e. V.

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Karlsruhe IT Security Initiative (KA-IT-SI)

The KA-IT-SI was established in 2000 to provide a platform for managers and IT security officers to provide IT security in companies. This cluster initiative aims to promote the exchange of experiences among IT security officers, provide the knowledge required for taking appropriate security measures, and sensitize companies, in particular small and medium-sized companies, to the importance of IT security. KA-IT-SI is a special interest group of CyberForum e. V. with its headquarters in Karlsruhe.

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Leading-Edge Cluster – software cluster „Software innovations for the digital enterprise“

This software cluster in south-west Germany is considered to be Europe's Silicon Valley. In the vicinity of the software development centres in Karlsruhe, Darmstadt, Kaiserslautern and Saarbrücken, universities, enterprises and research institutions work closely together and jointly develop the enterprise software of the future. The software cluster coordination offices support the cluster development with a number of measures, for example, the transfer of technologies, international communication, financial support for the establishment and settlement of companies, advanced training, and many other cluster services. The Baden-Württemberg part of the cross-border software cluster receives assistance from the Karlsruhe CyberForum e. V. cluster initiative.

CyberForum e. V.

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Nanotechnology cluster

With the centre of excellence at the University of Karlsruhe, the Institute of Nanotechnology and the national NanoMat competence network at the Forschungszentrum Karlsruhe research centre, a cluster has developed in this region whose focus is on this field of nanotechnology. The cooperation between research and corporate developments by companies from Karlsruhe and its surroundings and the neighbouring Rhine-Neckar region provides the basis for an excellent cluster quality nationally and internationally. Netzwerk Nanotechnologie in the Rhine-Neckar metropolitan region and the Karlsruhe NanoForum have merged and become the new „nanoValley.eu“.

HybridSensorNet e. V.

The HybridSensorNet e. V. cluster initiative brings together all the relevant stakeholders in the sensor technology industry. This creates a common understanding for the technical, economical and social relevance of new research areas and applications of sensors for detecting risks and improving resource efficiency. It further builds innovation networks which include all parties engaged in sensor technology, determines strategic goals for the further development of sensor technologies, explores the potential of sensors in interdisciplinary applications, creates appropriate framework conditions, and promotes academia and research and the exchange of experiences at regional, national, and international levels. Moreover, HybridSensorNet e. V. organizes events, seminars, and symposiums to bring together the cluster stakeholders.

HybridSensorNet e. V.

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NanoMat

NanoMat is a cross-regional cluster initiative with its office at the Karlsruhe Institute of Technology. Its 31 members from the industry, from research institutions and universities have made it their goal to drive the application-oriented research in the area of nanotechnology and material science by targeted projects. NanoMat conducts R&D projects and workshops with lecturers from science and industry. Furthermore, NanoMat is active in the fields of technology communication, lobbying, and technology management and sees itself as a pioneer in bringing together research and industrial applications. Small and medium-sized enterprises receive active support from the NanoValley network.

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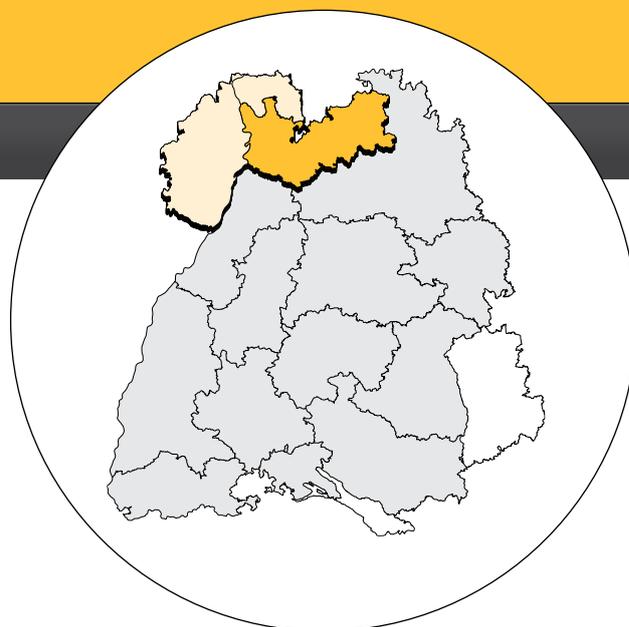
Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
Karlsruhe Institute of Technology (KIT)	<p>The former Forschungszentrum Karlsruhe and the University of Karlsruhe merged to become the Karlsruhe Institute of Technology as of 1 October 2009. The KIT employs 8,000 people, manages an annual budget of €600 millions, and combines the strengths of the two partners. Just like the renowned MIT in Boston, Massachusetts, the KIT aims to utilize the synergy effects generated by the exchange between science and industry.</p> <p>So, on the one hand, the KIT offers study programmes and research capacities in the faculties of architecture, civil engineering, geo and environmental sciences, chemistry and biosciences, electrical engineering and information technology, humanities and social sciences, informatics, mathematics, physics, economics and management. On the other hand, the KIT is home to the former Forschungszentrum Karlsruhe which belongs to the Helmholtz-Gemeinschaft and is one of Europe's largest natural and engineering science research institutions. This part of KIT has five research faculties: matter and materials, earth and environment, health, energy and key technologies. The central KIT service unit "Innovationmanagement" (IMA) is the service partner for the commercial use of the research results at the KIT.</p>
Karlsruhe University of Applied Sciences – Technology and Economics	<p>University of applied sciences specialising in technology and economics with faculties of architecture and construction engineering, geomatics, mechanical engineering and mechatronics, electrical engineering and information technology, computer science and business information systems, and management science and engineering.</p>
Baden-Württemberg Cooperative State University (DHBW) Karlsruhe	<p>Faculties of business and engineering</p>
Transfer-oriented research institutes	<p>Institutes of Fraunhofer Gesellschaft</p> <ul style="list-style-type: none"> • Fraunhofer Institute for Chemical Technology ICT, Pfinztal-Berghausen • Fraunhofer Institute of Optronics, System Technologies and Image Exploitation IOSB, Karlsruhe • Fraunhofer Institute for Systems and Innovation Research ISI, Karlsruhe <p>Other institutions</p> <ul style="list-style-type: none"> • Forschungszentrum Informatik (FZI) • Center for Art and Media (ZKM) <p>20 companies belonging to the Steinbeis organization are also located in Karlsruhe.</p>





Rhein-Neckar



The region

The Rhine-Neckar metropolitan region is located in the south-west of Germany, where three German states meet: Baden-Württemberg, Hesse and Rhineland-Palatinate. About 2.3 million people live in an area of 5,637 km², just over 1.1 million of whom live in the Baden-Württemberg part (2,442 km²). The region's economic success is closely related to the excellent science and research landscape that offers an outstanding innovation potential. This means that its innovative power is also clearly in the top ranks compared to the other regions.

Unique public-private partnership

Compared to the state of Baden-Württemberg as a whole, this region is dominated far more by the service sector than by production. The share of corporate service providers is above state-average.

In 2006, a restructuring of the organizations engaged in the joint regional development created a public-private partnership model that is unique in Germany. Since then, the Metropolregion Rhein-Neckar GmbH, the Verband Region Rhein-Neckar and the Zukunft Metropolregion Rhein-Neckar e. V. have been responsible for the joint regional development work.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction, and the public sector) include:

- Chemistry
- Information technology service providers
- Vehicle production and suppliers
- Life sciences

Its innovation power ranks in the middle compared to that of other regions. The Baden-Württemberg part of the Rhine-Neckar metropolitan region ranks third in the level index. That means that its innovation indicators equal those of the other regions.

Region's innovation index

Total index	39.3 %	State 38.8 %
• Level index	37.6 %	State 36.5 %
• Dynamic index	44.3 %	State 45.8 %

Employees in individual sectors*

Production sector	31.7 %	State (BW) 36.8 %
Service sector in total	67.4 %	State (BW) 62.8 %
• Trade	13.5 %	State (BW) 13.5 %
• Providers of corporate services	11.7 %	State (BW) 11.8 %
• Transport	4.2 %	State (BW) 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit) as of 30-Jun-2013 for the entire Rhine-Neckar metropolitan region

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The region's clusters and cluster initiatives

Automotive cluster

The cluster region hosts about 2,700 mostly small and medium-sized automotive companies representing about 12.3 % of the jobs in this region. The automotive cluster located in the Rhine-Neckar metropolitan region is focused on the production of commercial vehicles (trucks, buses, rolling stock, tractors). The big manufacturers representing the centre of the cluster are top-ranking internationally. The supply sector in this segment is also characterized by a high degree of added value. In addition, the suppliers operating in this cluster supply the entire value chain of passenger vehicle production. In particular the region's engineering capacities and the specialist component manufacturers enjoy an excellent reputation.

RheinMainNeckar automotive cluster

This cluster initiative was founded by the Darmstadt chamber of commerce and industry, Ingenieurbüro Bertrand GmbH and the district of Groß-Gerau in September 2003, under the patronage of the district administrator of the Groß-Gerau district. This initiative bundles the competencies of the automotive supply industry and acts as a coordinator and moderator for the individual partners of the network. Area-wise, the cluster initiative covers the Rhine-Main-Neckar region, with its centre around Groß-Gerau.

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Commercial Vehicle Cluster – Nutzfahrzeug GmbH

Due to the high concentration of truck, bus, agricultural machinery, and construction machinery manufacturers and suppliers in the states of Rhineland-Palatinate and Baden-Württemberg, the Commercial Vehicle Cluster Southwest (CVC) was founded in 2006. Since March 2008, the cluster initiative has operated as a German limited company in the form of a PPP with Daimler AG, John Deere, Grammer AG, Kirchhoff Automotive GmbH, euro engineering AG, Konsortium: DBK David+Baader GmbH, ITK Engineering AG, Seuffer GmbH & Co. KG, and the state of Rhineland-Palatinate. The CVC is a member of the go-cluster programme of the Federal Ministry for Economic Affairs and Energy. Priority goals are the improvement of the cluster partners' competitiveness, promotion of cooperation projects, and scientific and technological networking among the stakeholders in the commercial vehicle industry.

Commercial Vehicle Cluster – Nutzfahrzeug GmbH

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Biotechnology cluster

A nation-wide leading and highly innovative cluster for medical biotechnology has been established in this region. It includes pharmaceutical and diagnostic companies, small and medium-sized biotech companies, and research and university institutions. It is focused on personalized medicine and cancer research.

BioRN – Rhine-Neckar biotechnology cluster

Since 1996, the BioRN Network e. V. association has been responsible for the development of the biotechnology cluster in the Rhine-Neckar region into a leading life sciences cluster initiative in Europe. Since it was awarded the Leading-Edge Cluster label for cell-based and molecular medicine, the BioRN Cluster Management GmbH founded by the BioRN Network and the Technologiepark Heidelberg has supported the goals of this association. These are: the promotion of regional and cross-regional innovation transfer, the expansion of the research and development infrastructure, and the soliciting of partnerships with other internationally leading health research locations.

BioRN Network e. V.

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Information technology / enterprise software cluster

Europe's biggest software company has an outstanding position in the region, providing major impetus for the region's value chain, also in a vertical direction. In addition, the IT cluster is highly diversified.

GeoNet.MRN – Geo information network of the Rhine-Neckar metropolitan region

More than 30 stakeholders from companies, research institutions, chambers, the 15 municipal and district administrations of the Rhine-Neckar region, and the states of Baden-Württemberg, Hesse, and Rhineland-Palatinate founded the non-profit association Geoinformationen der Metropolregion Rhein-Neckar (GeoNet.MRN e. V.). The common goal of the cluster initiative: is to digitally and intelligently link geodata from different sources – for example, information on the courses of roads, sewage pipes, or power lines, or on the position of solar parks, nature reserves, or industrial parks.

GeoNet.MRN

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IT FOR WORK e. V.

IT FOR WORK is an IT cluster initiative in the Rhine-Main-Neckar region and one of the leading ICT networks in Germany. The ICT industry in the administrative district of Darmstadt includes about 7,600 enterprises with about 70,000 employees. These figures show the great importance of ICT for the region. IT FOR WORK offers the industry comprehensive information, events, and excellent business contacts. IT FOR WORK brings together entrepreneurs and paves the way for successful cooperation projects. Moreover, it improves the marketing options of its member companies. Founders of start-ups from universities, science and research institutes are offered comprehensive services to realize their business ideas.

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IT-Forum Rhein-Neckar e. V.

IT-Forum Rhein-Neckar is the cluster initiative for IT and media in the metropolitan region. It is a network of about 80 enterprises, institutions, and universities from the digital industry. The goal of the IT-Forum is to establish the Rhine-Neckar metropolitan region as the IT Service Region 2020. In order to achieve this, the cluster initiative bundles the know-how and experience, brings together experts, and promotes new ideas, technologies, specific projects, and cooperation projects.

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Creative industries cluster

This young cluster has evolved in Mannheim from an established pop music scene in connection with the state-run pop academy, communal pop music sponsoring, the conservatory and a specific start-up centre. These institutions take on a leading role for many other individual stakeholders in this metropolitan region. Besides the widely diversified music scene, there is a film funding initiative in the region which has its own contact office to further the networking of all regional stakeholders.

Music industry cluster management Mannheim & region

The music industry cluster management acts as a contact and coordination office for the professionals in the regional music industry and as an institution that brings together the music industry with politics, the administration, and industry in general. In addition to providing advice and networking options for founders of start-ups, freelancers, and established companies in the environment of the music industry, the cluster management is engaged in the further establishment of Mannheim as an attractive and thriving music industry location. The cluster management relies on a coordinated system of consulting, innovative workshops, industry meetings, and presence at national and international trade fairs.

Clustermanagement Musikwirtschaft Mannheim & Region

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FilmCommission Rhein-Neckar metropolitan region

FilmCommission MRN is a contact point for all regional film professionals and supra-regional productions which intend to film in the region. The cluster initiative connects culture and the industry and operates online databases for film locations and film staff. Furthermore, it is responsible for the initiation of projects, cooperation projects, cultural funding, public relations work and lobbying, location marketing, and talent promotion.

FilmCommission Metropolregion Rhein-Neckar

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Medical engineering cluster

The city of Mannheim and the region around it are European hotspots of medical engineering and biotechnology. Considering the entire value chain – from the development and finishing of active ingredients to specialized trade – the medical engineering industry in Mannheim has about 7,000 employees and about 14,000 employees together with the pharmaceutical industry. This makes it one of the largest industries in Mannheim. This also means that the cluster provides a unique pool of employees for industrial and clinical research and for expanding medical engineering companies.

Mannheim medical technology cluster

Based on the economic strategy of the city of Mannheim, a cluster initiative in the area of medical engineering was established for Mannheim and the Rhine-Neckar metropolitan region. Its goal is an efficient interlinking of research, clinics, and medical engineering companies to form a network association. In this way, an internationally competitive industrial clinical research and human resources environment is further improved for existing companies, start-ups, and companies newly settling in the area.

Mannheim Medical Technology Cluster / Wirtschafts- und Strukturförderung

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Organic electronics cluster

Globally leading enterprises, universities and research institutes have formed the Forum Organic Electronics cluster in the Rhine-Neckar metropolitan region. The cluster partners from science and industry cooperate on an equal footing, striving to realize innovative applications and products in the area of this future technology of organic electronics. Its main activities are in the fields of environmental energy production that use organic photovoltaics, the economic use of energy through organic light emitting diodes, and the resource-friendly production of electronic components such as circuits, storage devices and sensors. The cluster's specific competence is the area of printing technology as a cost-efficient production method for organic electronic components.

Leading-Edge Cluster – Forum Organic Electronics

The major research subject of the Forum Organic Electronics (FOE) is printable organic electronics (OE), an area of electronics that uses materials that are based on conductive polymers or smaller organic compounds. To answer some of the basic issues regarding printed OE, the cluster partners collaborate with each other across disciplines and institutions at their common research location, the InnovationLab (iL). At the lab, the entire value chain of printed OE is under one roof – from the researching and developing of new materials to the design and production of devices and systems, and the sale of applications and services.

InnovationLab GmbH

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Production technology cluster

The production technology cluster is mainly characterized by the mechanical and automotive engineering cluster and has a highly heterogeneous structure within the region. Leading large-scale corporations work in close cooperation with regional universities and research institutions to develop innovative production systems.

Automation engineering Rhine Main Neckar

The automation region brings together suppliers and users from the automation engineering industry. These approximately 500 companies and approximately 70 scientists cover all the areas of automation engineering.

IHK Darmstadt

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www.automatisierungsregion.de

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Storage systems and smart grid cluster

In the storage systems and smart grid cluster, companies and scientific institutions from the Rhine-Neckar metropolitan region and the surrounding areas jointly work out innovative solutions for the energy concepts of the future. In projects such as the LIB2015, Web2Energy, or the E-energy projects MOMA or MeRegio, the cluster partners have already gathered long-term cooperation experiences. A specific strength of the cooperation area and of its stakeholders is that they cover all of the sub-functions of a smart power grid.

StoREgio Energiespeichersysteme e. V.

The cluster initiative promotes the use of smart grid technologies to balance fluctuating energy production and fluctuating consumption (flexibility). StoREgio therefore contributes to the integration of renewable energy and successful energy transition. The focus is on application-oriented projects for stationary energy storage systems and load management methods, together with the required information and communication systems. The most important goal here is to show economically attractive applications. The association represents a platform for discussions and organizes projects, with and without public funding, based on the work of different specialist groups.

StoREgio Energiespeichersysteme e. V.

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Environmental technology cluster

Encompassing 600 companies and renowned institutes of research and education, the environmental and energy technologies cluster represents a significant economic factor and offers optimum conditions for the region to assume a leading position among its international competitors. Alongside well developed value chains, a successfully operating network already exists between science, industry and politics / administration. The fields of excellence are defined as: energy efficiency in buildings, energy efficiency in the industry, environmental and energy concepts for regions, deep geothermics.

Bioenergie-Region Hohenlohe-Odenwald-Tauber GmbH

The goal of the Bioenergie-Region Hohenlohe-Odenwald-Tauber cluster initiative is to separate communal heating supply from fossil fuels. The main focus here is the development of self-sustained areas in terms of energy (for example bioenergy villages). Through research and innovations in the field of energy crops, a competence region for renewable raw materials is being systematically developed. Specific importance has been gained by the mobilization and energetic utilization of organic waste from private households through a bioenergy bin.

Bioenergie-Region Hohenlohe-Odenwald-Tauber GmbH

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Energy and environmental cluster

The energy and environmental cluster of the Rhine-Neckar metropolitan region is an alliance of enterprises, research institutions, and universities in the Rhine-Neckar region that engage in the areas of energy efficiency and renewable energy. Based on the networks between the stakeholders along the entire value chain, the pre-competitional exchange of information and experiences, the common preparation and execution of projects for a promotion of energy efficiency and the expansion of renewable energies in the Rhine-Neckar region, are at the centre of its activities.

Energy cluster & Umwelt Metropolregion Rhein-Neckar GmbH

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Umweltkompetenzzentrum Rhein-Neckar e. V. (UKOM)

UKOM e.V.'s goal is to merge and extend the environmental capacities in the Rhine-Neckar metropolitan region by interlinking the industry, science, education, and politics to improve the economic performance of the entire region and to increase the regional environmental quality. The environmental competence centre has 50 members and numerous partners in the different projects. Recently, the association has been especially active in the field of initiating and assisting learning networks within the industry, in the areas of energy efficiency and sustainable management.

Umweltkompetenzzentrum Rhein-Neckar e. V.

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Cluster-relevant services – Universities, research and transfer institutions

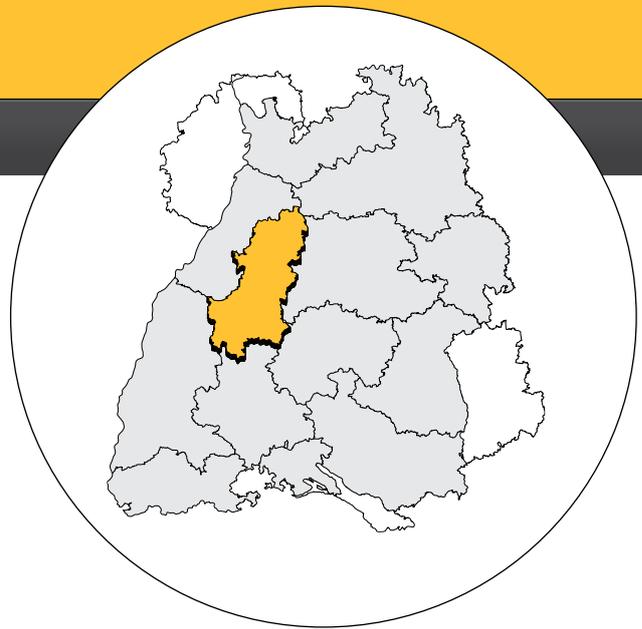
Institution	Fields of activity
University of Heidelberg	Wide range of subjects of a regular university; in the faculties of natural sciences, mathematics and computer science, and medicine, focus areas of research are, for example, "Molecular and cell biological foundations of life" and "Forming of structures and patterns in the material world"; transfer through "Industry on Campus" projects and the research department.
University of Mannheim	Law, economics and social sciences.
University of Koblenz-Landau	Landau campus, in particular science and environmental studies; transfer through Präsidialamt/Referat A1
Hochschule Mannheim – University of Applied Sciences	Faculties: in particular, biotechnology, electrical and communication engineering, IT, mechanical engineering, chemical process engineering, social work, industrial engineering, medical engineering (joint institute with University of Heidelberg), design. Transfer through Institute of Applied Research (IAF), department of research and development, and Hochschule Mannheim Transfer GmbH.
Ludwigshafen on the Rhine – University of Applied Sciences	University of economics.
Hochschule Worms – University of Applied Sciences (Rhineland-Pala- tinate)	Economics, tourism and transport, computer science. Transfer through Center for Technology Transfer and Telecommunications (ZTT).
Baden-Württemberg Coo- perative State University (DHBW) Mannheim	Through a strong partnership with institutions and enterprises from the industry, DHBW Mannheim offers a wide range of cooperative Bachelor courses of study and Master programmes in the areas of economics, computer science, health, engineering, and media.

Institution	Fields of activity
Baden-Württemberg Cooperative State University Mosbach	Business administration, engineering, information technology, and lumber business administration and wood engineering.
Popakademie Baden-Württemberg GmbH	<p>The Popakademie Baden-Württemberg is a state-run University of Popular Music and Music Business in Mannheim. Study programmes includes the Bachelor programmes of popular music design and music business, and the Master programmes of popular music, music and creative industries.</p> <p>Besides its function as a university, the Popakademie Baden-Württemberg is also a competence centre for the music industry and music scene where regional, national, and international projects are realized.</p>
Research and transfer institutions	<p>German Cancer Research Center (DKFZ) German Cancer Research Center (DKFZ) in the Helmholtz Association and transfer through technology transfer office.</p> <p>European Molecular Biology Laboratory (EMBL) This laboratory is one of the leading research laboratories world-wide in the field of molecular biology. Transfer is realized through EMBLEM GmbH.</p> <p>Other institutions</p> <ul style="list-style-type: none"> • Medical engineering competence centre at the Mannheim University Hospital • Central Institute for Computer Engineering • Mannheim Business School • SRH University Heidelberg • East Asian institute at the Ludwigshafen University of Applied Sciences • European institute of telecommunication research (EURESCOM) • European Media Laboratory GmbH (EML) • Society for Heavy Ion Research in Darmstadt (GSI) • Institut für Energie- und Umweltforschung Heidelberg GmbH (IFEU) • Klaus Tschira Stiftung gGmbH • Centre for molecular biology at the University of Heidelberg (ZMBH) • European Molecular Biology Organization (EMBO) <p>Institutions of the Max-Planck-Gesellschaft with transfer through Max-Planck-Innovation GmbH</p> <ul style="list-style-type: none"> • Max Planck Institute for Nuclear Physics • Max Planck Institute for Medical Research • Max Planck Institute for Astronomy <p>Institutes of Fraunhofer Gesellschaft</p> <ul style="list-style-type: none"> • Fraunhofer Project Group for Automation in Medicine and Biotechnology PAMB





Nord- schwarzwald



The region

The districts of Calw, Enzkreis, and Freudenstadt, and the city of Pforzheim together form the Nordschwarzwald region. Located between the Oberrhein and Stuttgart metropolitan regions, the region combines sustainable prosperity with a high quality of life. The high proportion of owner-managed small and medium-sized enterprises is remarkable.

Strong SMEs and high quality of life

The Nordschwarzwald region has approx. 590,000 inhabitants and an area of 2,340 km². The region's key industries are precision engineering, plastics technology, medical and dental engineering, timber, and health and tourism. Based on the regional development concept that was worked out in an exemplary intercommunal process, the region sees its heterogeneity and its diversified economic and industrial structure as an opportunity for a holistic and sustainable regional development.

Its industrial centre is the city of Pforzheim, the centre of the German jewellery and clock industry, in the Northern part of the region. This is where innovative companies in precision and medical engineering are concentrated, as well as renowned suppliers to the automotive and medical engineering industries. Characteristic for the two Southern districts of Calw and Freudenstadt are companies that are considered global players in the mechanical engineering industry and the timber and plastics technology industries.

More than 50 % of the area of the Nordschwarzwald region is forest. Another dominant sector is the services sector in the areas of tourism and health, with famous restaurants that enjoy the highest reputation world-wide, for example, in Baiersbronn. Significant structural changes can be expected over the next years through the Black Forest National Park.

The most important industries (by number of employees) are:

- Metal industry with mechanical engineering and production of metal products
- Vehicle production and suppliers
- Production of electrical equipment

Its innovative power is below average compared to the other regions, but ranks fourth in the dynamic index.

Region's innovation index

Total index	28.6 %	State 38.8 %
• Level index	22.8 %	State 36.5 %
• Dynamic index	46.1 %	State 45.8 %

Employees in individual sectors*

Production sector	43.2 %	State 36.8 %
Service sector in total	56.5 %	State 62.8 %
• Trade	15.0 %	State 13.5 %
• Providers of corporate services	7.9 %	State 11.8 %
• Transport	3.3 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013

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The region's clusters and cluster initiatives

Forestry and timber cluster

A large number of small and medium-sized enterprises, from craftsman's workshops to market leading mechanical engineering company, form the Northern Black Forest forestry and timber cluster that is so typical for this region. A specialty of this cluster is the presence of the full value chain. Almost every branch of the industry is present in this region, from companies in the area of the primary forestal production to innovative timber companies and renowned globally active manufacturers of the latest fitting and furniture technologies.

Northern Black Forest timber and furniture entrepreneurs network

The Unternehmensnetzwerk Holz und Möbel Nordschwarzwald is a platform for the companies in the timber and furniture industry in the region of the Northern Black Forest. About 20 companies are engaged in the cluster initiative and represent almost the entire timber value chain in the region.

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Health industry cluster

The health industry as a cross-sectoral function includes all industries that relate to the topic of health. Around the core area of the classic health services (inpatient and outpatient treatment and care), there are, for example, the more industrial branches such as medical engineering, pharmaceuticals, and biotechnology, and the small trades or health-related sectors such as pharmacies or health tourism.

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Creative industries cluster

Based on the jewellery and clock-making industry, a diverse creative industry has evolved which, in addition to the traditional creative industries, encompasses design (jewellery design, industrial design, interior design), precious metal working, manufacture of jewellery, clocks and watches, and precious metal recycling (refining).

CREATE! PF

The creative industry is a forward-looking industry for the Pforzheim location. Currently, about 1,400 employees subject to social insurance contributions are employed in about 330 companies in this area. Another 380 companies come from the jewellery and clock-making sector. The city of Pforzheim has been promoting the creative location through the CREATE! PF cluster initiative since 2010. The goal of the cluster initiative is to strengthen Pforzheim's creative industry, to create and maintain jobs, and to establish the creative industry as a relevant economic factor for the region in the long term. The cluster management has been supported with funds from the European Regional Development Fund (ERDF) and the state of Baden-Württemberg.

CREATE! PF

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Plastics processing cluster

More than 400 mostly small and medium-sized plastics technology enterprises form the plastics processing cluster. With the exception of plastics production, the entire value chain is present in the region: from injection moulding machine manufacturers to the relevant mould making and various plastics processing companies, and also some downstream processes such as printing, laser machining, measuring and testing.

INNONET Kunststoff

The INNONET Kunststoff entrepreneurs network is a platform for and a link between the companies of the plastics industry in Baden-Württemberg. About 70 companies are engaged in the cluster initiative. These companies represent almost the entire plastics industry value chain in the region. The plastics competencies in the cluster initiative are complemented by the memberships of universities, research institutions, chambers, and other institutions.

INNONET Kunststoff Technologiezentrum Horb GmbH & Co.KG

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Precision engineering cluster

The precision engineering industry with its special focus on metalworking and dental and medical engineering represents an important branch of industry in the region and has evolved from the jewellery and fine mechanics industry. The value chain of metalworking is almost complete and includes all up and downstream supplier industries: materials, machining and stamping, mechanical engineering and presses, tooling, finishing, quality assurance, organization, process optimization and worldwide logistics. The medical and dental engineering sector encompasses the fields of implantology, orthodontics, dental technology, instrumental analysis, and the manufacture of materials (precious metals, ceramics), recycling and disposal.

HOCHFORM – precision engineering from Pforzheim

About 300 companies from the area of metalworking precision engineering – for example, dental and medical engineering – are supported by different measures in their networking activities among each other in order to generate competitive advantages. This also includes focused marketing activities that underline the significance of this specialized industry and gives the Pforzheim/Enzkreis location and the entire Northern Black Forest region a unique profile. This cluster initiative was awarded a prize in the regional cluster competition held by the Ministry of Economics in 2010. Cluster management is supported with funds from the European Regional Development Fund (ERDF).

Wirtschaft und Stadtmarketing Pforzheim

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
Pforzheim University of Applied Sciences	<p>Engineering programmes: Bachelor: electrical engineering / information technology, computer engineering, mechanical engineering / product development, mechanical engineering / production engineering and management, mechatronics, medical engineering, industrial engineering / general management, industrial engineering / global process management, industrial engineering / international management;</p> <p>Master: Business administration and engineering, embedded systems, information systems, product development.</p> <p>Business study programmes: Bachelor: Purchasing and logistics, international business, marketing, international marketing, marketing communication and advertising, market research and consumer psychology, media management and advertising psychology, human resources management, resource efficiency management, controlling, finance and accounting, tax and auditing, business informatics – management & IT, business law.</p> <p>Master: Auditing and taxation, auditing, business and law, controlling, finance & accounting, creative communication & brand management, human resources management, information systems, international management MBA, innovative service marketing, life cycle & sustainability</p> <p>Design study programmes: Bachelor: Industrial design, fashion, jewellery, visual communication, accessories design, transportation design, intermedial design.</p> <p>Master: Creative direction, transportation design Knowledge transfer through the IAF – Institute of Applied Research, the STI - Institute of Jewellery Technology, the INEC – Institute of Industrial Ecology, the Institute of Human Resources Research, the IoS³ – Institute of Smart Systems and Services, the IWWT – Institute of Materials and Material Technology, and more than ten companies from the Steinbeis organization.</p>
Internationale Hochschule Liebenzell, University of Applied Sciences	<p>Bachelor study programmes: protestant theology, theology / social work in an intercultural context, theology / educational science in an intercultural context.</p> <p>Master study programmes: Protestant theology, systemic consulting</p> <p>Academic publications by the research centre for interculturalism and religions.</p>
SRH University of Applied Sciences Calw – Business and Media	<p>Bachelor study programmes: business administration, marketing management (from 9/2015), media and communication management, culture management (from 9/2015) and controlling.</p> <p>Master study programmes: media management & public communication and start-up – arts, culture & entrepreneurship (from 9/2015).</p> <p>Applied research in several research projects and research clusters.</p>

Institution	Fields of activity
<p>Baden-Württemberg Cooperative State University (DHBW), Horb campus</p>	<p>Bachelor study programmes in engineering: computer science, electrical engineering, mechanical engineering and mechatronics, business administration and engineering, technical management.</p> <p>The individual courses of study include, for example, the subject areas of electric mobility, design, development and production, utility and energy management, plastics processing, motor vehicle test engineering, modern database technology and big data analytics, and international technical sales, technical logistics, and process management.</p> <p>Master study programmes in engineering: electrical engineering, computer science, integrated engineering, mechanical engineering, industrial engineering, automotive systems engineering.</p> <p>Transfer through the institutes of the Steinbeis organization: Institut für Kunststoff- und Entwicklungstechnik IKET (Institute for plastics and development engineering) and the Steinbeistransferzentrum für Managementtraining SZT-MGMT (Steinbeis transfer centre for management training).</p>
<p>Research and transfer institutions</p>	<p>IHK Management Akademie Schwarzwald</p> <p>The courses offered by the Black Forest Management Academy are meant for persons who live up to their responsibility for their companies. The public seminars focus on the areas of communication, personality and leadership, and strategy and processes. In addition, there are in-house seminars and the Autumn Academy courses.</p> <p>IHK Umwelt Akademie Freudenstadt</p> <p>The CCI Environmental Academy offers current practice-oriented qualifications in the area of environmental protection, radiation protection, occupational safety, and energy that are in accordance with the legal and market requirements.</p> <p>IHK Tourismus-Akademie Baden-Württemberg in Freudenstadt</p> <p>Together with the Tourism Academy Baden-Württemberg, the chamber of commerce and industry is offering information and services all year round. This systematic service offer is designed cross-company and cross-regional and is open for all executives from the spa and tourism industry, the hotel and restaurant industry, the travel industry, service providers and production companies in the tourist areas.</p> <p>SKZ German Plastics Center</p> <p>The Horb location is responsible for the knowledge transfer through training and advanced training of specialists in plastics processing. Here, the processing of thermoplastic semi-finished products and the area of injection moulding technology play a major role.</p>





Südlicher Oberrhein



The region

One million inhabitants live in the Südlicher Oberrhein region in an area of 4,062 km². It is part of the Trinational Metropolregion Oberrhein and due to its proximity to France and Switzerland, the regional cluster structures reach even beyond the state borders. The regional economy is characterized by a well-balanced variety of industries and small and medium-sized enterprises.

Cooperation beyond the state borders

Compared to the state of Baden-Württemberg as a whole, the region's economy is characterized more by the service sector than by production. However, the share of corporate service providers is somewhat below the state-average.

The regional economy is characterized by a well-balanced variety of industries and small and medium-sized enterprises. Especially in the service sector, there are many industrial clusters in the areas of publishing, transport, computer science, and research. In addition, a large number of regional and cross-border structural projects exist. In this region, there is a strong focus on and innovative power in the health sector.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction and public sector) include:

- Metal industry with mechanical engineering and production of metal products
- Recruitment agencies
- Information services

Compared to other regions in Baden-Württemberg, the region's innovation power ranks at the lower end of the scale, despite its improvement. However, the region's dynamics index has increased significantly and now ranks second place.

Region's innovation index

Total index	29.7 %	Land 38.8 %
• Level index	22.7 %	Land 36.5 %
• Dynamic index	50.7 %	Land 45.8 %

Employees in individual sectors*

Production sector	32.8 %	Land 36.8 %
Service sector in total	66.7 %	Land 62.8 %
• Trade	15.0 %	Land 13.5 %
• Providers of corporate services	9.3 %	Land 11.8 %
• Transport	4.1 %	Land 4.0 %

*Beschäftigungsstatistik der Bundesagentur für Arbeit, Stand 30.6.2013

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The region's clusters and cluster initiatives

Automotive cluster

The automotive industry includes the suppliers, production, and services both in the industry itself and in other relevant sectors. Automotive technology can be found, for example, in vehicles, agricultural equipment, boats, or aeroplanes.

Automotive_NETZ

Technologically leading enterprises along the entire value chain meet regularly to exchange their experiences, to discuss specific topics or exchange their best practices. Its members are a wide-spread network including think tanks and governmental authorities. Its instruments are the moderated exchange of experiences, technology transfer, co-operation exchanges, contacts to Think Tanks and governmental authorities, consulting, and making contacts. This network that was founded in 2009 receives organisational support from the wvib trade association.

Automotive_NETZ im wvib Wirtschaftsverband Industrieller Unternehmen Baden e.V.

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Biotechnology cluster

One centre of this cluster is in Freiburg with its great variety of scientific institutions, young spin-offs, and well-established companies, another is in the Basel area with its international pharmaceutical corporations, and a further one is in the Strasbourg area. In terms of products, the cluster is concerned primarily with the research, development and production of biotechnical products for the life sciences sector, in particular, for the pharmaceutical and agricultural industry.

BioRegio Freiburg / BioValley Plattform Deutschland

BioRegio Freiburg / BioValley Plattform Deutschland is a partner of the trinational BioValley life sciences cluster initiative bundling the biotechnological potential in the Upper Rhine area, along the centres of Freiburg (Germany), Basel (Switzerland) und Strasbourg (France). Its top priorities are the support for entrepreneurial growth and the targeted innovation and technology transfer from research to the industry. Its main focus is on the maintaining of existing structures, the honing of the profile of the BioValley brand and the networking in the areas of biotechnology, pharmaceutical and medical engineering with the goal of creating a comprehensive life sciences cluster that is seen as a European knowledge and research region world-wide.

Technologiestiftung BioMed Freiburg

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Forestry and timber cluster

Wood has always been used as a raw material and as a construction material and – as an important renewable raw material – it is used more and more often in completely new applications. The timber value chain is extremely strong in the Hochschwarzwald region as well as in the regions of Südlicher Oberrhein and Schwarzwald-Baar: from raw material to sawmills, finishing, woodworking machinery, special-purpose vehicle production and energy saving prefab houses.

Holzketten Schwarzwald e. V.

The Holzketten Schwarzwald e. V. is an association of representatives from towns, the forestry and timber industry, handicraft trade businesses and entrepreneurs from the timber industry, service companies, trade associations, other cluster initiatives, vocational schools and universities, and individuals. Their common goal is to improve cooperation and increase sales of timber products to strengthen the TIMBER sector.

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Health industry cluster

This cluster is based beyond the region of Südlicher Oberrhein and encompasses the Black Forest and parts of the Rhine Valley in the area of the Black Forest, including the cities of Karlsruhe, Baden-Baden, Offenburg and Freiburg. This cluster is currently undergoing a positive change process in terms of its offers, which range from the classical spa and recreational tourism to health and wellness tourism. It has significance across the border as well.

HealthRegion Freiburg e. V.

The cross-sector and cross-industry cluster initiative intends to sustainably strengthen the innovation power and competitiveness of the two complementary areas of health and tourism. It contains the development of innovative products and services in the area of medical tourism, e-health and telemedicine, and the health-related trips that are preferred by the target group that is described as Lifestyle of Health and Sustainability and which are becoming more and more relevant for the tourism here. This cluster initiative was awarded a prize in the regional cluster competition of the Ministry of Finance and Economics Baden-Württemberg in 2010. Cluster management is supported with funds from the European Regional Development Fund (ERDF).

Freiburg Wirtschaft Touristik und Messe GmbH & Co. KG

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Information technology / enterprise software cluster

Most jobs in the commercial or production sector can only be carried out with the help of direct or indirect IT support. Hardware, software and IT services and training are of specific importance. The region of Südlicher Oberrhein hosts numerous companies offering these products or services. The goal of Software-Forum Oberrhein network is to make these products and services known and accessible to all users. This goal has been successfully pursued for more than 15 years by means of an internet database, events and publications.

Baden-Württemberg: Connected e. V. (bwcon) – Regionalbüro Südwest

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Creative industries cluster

Over nine per cent of all those in employment in the Südlicher Oberrhein region work in media and IT companies between Achern and Weil am Rhein. A centre of the creative industry is located in the Offenburg / Ortenau area, around the media company Burda, that specializes in the fields of publishing, printing and direct marketing. The IT and communication sector is an important component of this field of specialization. Printing and publishing houses such as Haufe-Lexware, Herder and Rombach as well as renowned software producers such as United Planet are located in the university town of Freiburg.

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Medical engineering cluster

The Baden-Württemberg medical engineering industry specializes in the development and production of innovative surgical instruments, orthopaedic solutions and diagnostic systems. Its proximity to the health sector provides a great variety of development options and at the same time as being a basic requirement for practical technical solutions in the areas of medicine, health and social matters.

Medi_NETZ

Selected companies from the medical engineering industry that have an excellent expert knowledge in their relevant specialist areas have regularly met here since 2009 to exchange their experiences and to discuss various topics. A wide-spread network, including think tanks and governmental authorities, provides a variety of options to the participating stakeholders. The instruments Medi_NETZ uses are: moderated exchange of experiences, technology transfer, cooperation options, contacts to think tanks and governmental authorities, consulting, and contacts. Its goal is to bring together the cluster stakeholders to make them economically successful.

Medi_NETZ
im wvib **Wirtschaftsverband Industrieller Unternehmen Baden e.V.**

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Microsystem technology cluster

This cluster is heavily science-driven and has a central point of focus in the Department of Microsystems Engineering (IMTEK) at the University of Freiburg. The companies that are assigned to this cluster have often successfully existed for several decades. In product terms, its focus is on sensor engineering. On a higher product level, the focus is on the measurement and control technology and life sciences applications.

Leading-Edge Cluster MicroTEC Südwest

MicroTEC Südwest is a cross-industry technology cluster in south-west Germany. In the growth-oriented sector of microsystems engineering, the MicroTEC Südwest cluster initiative with its more than 360 cluster partners is one of the largest technology networks in Europe. Its members come from companies, research institutions, and universities. The cluster initiative addresses four applications of microsystems engineering: mobility, production, health, and energy. In these application areas, microsystems engineering has a high relevance as a key enabling technology. In this connection, the term, smart systems' is also used often.

Mikrosystemtechnik Baden-Württemberg e. V. (MST BW)

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Environmental technology cluster

This field of specialization is still young. To a large degree it is driven by specific applications for the resource-saving generation of energy, namely solar technology (thermal and voltaic), in the Freiburg area and it is therefore rather demand-driven. A large number of service providers such as architects and consultancy offices have specialized in this subject area. With the Fraunhofer Institute for Solar Energy Systems (ISE), the region also benefits from Europe's largest solar research institute.

Green City cluster Freiburg

This cluster initiative that was initiated in 2009 aims to link regional enterprises and institutions in the areas of renewable energies, energy efficiency, sustainable planning and building, mobility concepts, and environmental technology. In addition to supporting the transfer of knowledge and technology and the development of cooperation projects, a declared goal of the Green City growth model in Freiburg is to increase the awareness for the cluster members' competencies. The cluster initiative was one of the prize winners in the first competition for strengthening the regional clusters in Baden-Württemberg.

Freiburg Wirtschaft Touristik und Messe GmbH & Co. KG

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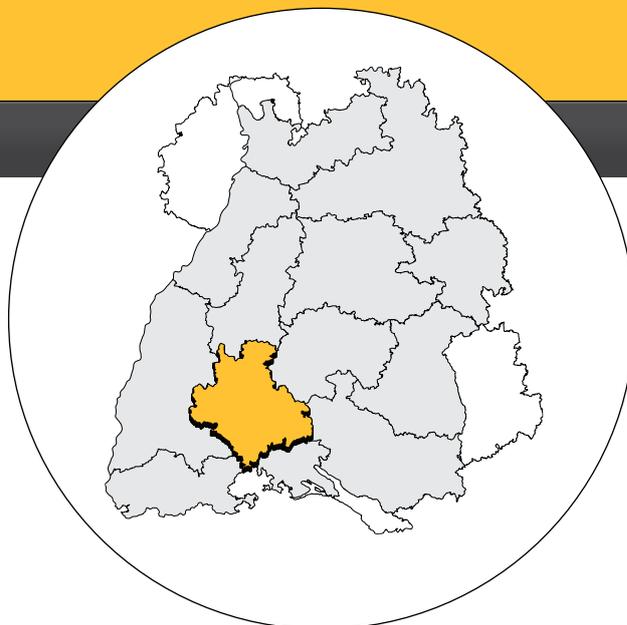
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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
University Albert Ludwig of Freiburg (including University Medical Center)	<p>Technical and scientific study programmes: applied computer science, bioinformatics, biology, chemistry, computer science, smart embedded microsystems, medicine, molecular medicine, microsystems engineering, pharmaceuticals, physics, environmental sciences, forestry, forest management and environment, European forestry, dentistry.</p> <p>Selected institutes: Department of Microsystems Engineering, Department of Computer Science, Freiburg Materials Research Center, Centres for Translational Biology, Biological Systems Analysis, Renewable Energy, Neuroscience, Biological Signalling Studies, Technology Transfer Office, and in addition transfer through experts and centres of the Steinbeis organization.</p>
Hochschule für Öffentliche Verwaltung Kehl – University of Applied Sciences	<p>The university for public administration offers German-French Master study programmes for cluster management and the management of regional networks in cooperation with the University of Strasbourg.</p>
Offenburg University of Applied Sciences	<p>Faculties: business & industrial engineering, electrical engineering & information technology, mechanical and process engineering, media & information.</p> <p>Transfer through Institute of Applied Research and the experts and centres of the Steinbeis organization.</p>
Research and transfer institutions	<p>Forstliche Versuchs- und Forschungsanstalt Baden-Württemberg (Forest Research Centre) Based in Freiburg, this test and research institute is the key institute for the development of the forestry and timber industry, and in particular of forest management.</p> <p>Staatliches Weinbauinstitut (State Viticultural Institute) Research centre for viticulture and wine treatment</p> <p>Europäisches Kompetenz- und Forschungszentrum Clustermanagement (European Centre of Competence and Research in Cluster Management) The centre is involved with current issues of cluster and network research.</p> <p>Institutes of the Fraunhofer Gesellschaft</p> <ul style="list-style-type: none"> • Fraunhofer Institute for Solar Energy Systems ISE • Fraunhofer Institute for Applied Solid State Physics IAF • Fraunhofer Institute for Mechanics of Materials IWM • Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institut, EMI • Fraunhofer Institute for Physical Measurement Techniques IPM • Institutes of Hahn-Schickard-Gesellschaft: • Institute of Microsystems and Information Technology (HSG-IMIT) <p>Institutes of Max-Planck-Gesellschaft</p> <ul style="list-style-type: none"> • Max Planck Institute of Immunobiology and Epigenetics



Schwarzwald- Baar-Heuberg



The region

The Schwarzwald-Baar-Heuberg region is characterized by a high industrial density that is much higher than the state average and by a dominant industry of small and medium-sized companies. This region hosts enterprises that have won awards and prizes in renowned competitions worldwide.

Awards and prizes from around the world

The Schwarzwald-Baar-Heuberg region encompasses an area of 2,529 km² and has about 474,000 inhabitants. The region includes the districts of Rottweil and Tuttlingen and the Schwarzwald-Baar district. All in all, compared to the rest of the state of Baden-Württemberg, its economy is clearly more production-based. The Schwarzwald-Baar-Heuberg region is characterized by an industrial density that is above the state average and by a dominant industry of small and medium-sized companies.

Its industrial history reaches back into the first half of the 19th century. The region experienced significant structural changes which helped to strengthen the existing cluster structures, for example, in the area of medical engineering. In the course of this, the number of strategic management teams of the cluster structures was increased through various initiatives.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction, and public sector) include:

- Production of metal products and mechanical engineering
- Production of electrical equipment
- Production of data processing equipment and electronic and optical products

Its innovation power ranks in the lower middle compared to the other regions. The level index is below average, however, the dynamic index has increased significantly. It is above average now, ranking in third place.

Region's innovation index

Total index	32.8 %	State 38.8 %
• Level index	27.9 %	State 36.5 %
• Dynamic index	47.4 %	State 45.8 %

Employees in individual sectors*

Production sector	52.4 %	State 36.8 %
Service sector in total	47.3 %	State 62.8 %
• Trade	11.5 %	State 13.5 %
• Providers of corporate services	6.6 %	State 11.8 %
• Transport	3.6 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013

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The region's clusters and cluster initiatives

Automotive cluster

The Schwarzwald-Baar-Heuberg region is home to about 1,000 enterprises belonging to the automotive innovation cluster. A regional specialty is the concentration of producers of turned parts with Gosheim. It can be called a regional centre of competence for turned part production, whose origins reach back into the sixties. Switch elements and locking systems from the Tuttlingen area have remained a benchmark for innovation in this sector up to this day. The automotive industry is its major customer industry. Individual companies have since grown to become medium-sized enterprises. In addition, the region hosts automotive suppliers, for instance in the Schramberg area.

GVD Gemeinnützige Vereinigung der Drehteilehersteller e. V.

GVD Gemeinnützige Vereinigung der Drehteilehersteller e. V., a non-profit association of turned part producers that initiated the machining technology cluster initiative, was established in 1974 and has ever since represented the common technical and economic interests of its member companies. This association currently has about 70 members from the machining industry that are active in the business as suppliers of precision parts, assembly groups, components, aggregates and systems in diverse branches of industry. About 80 sponsors from the mechanical engineering, tooling, and from complementary industries support the cluster initiative's activities. By strengthening competencies, recruiting and training of personnel it invests in measures to make the member companies future-proof.

GVD Gemeinnützige Vereinigung der Drehteilehersteller e. V.

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TechnologyMountains e. V.

TechnologyMountains sees itself as a link between science and industry and initiates development and cooperation projects together with its members. This helps to ensure and expand the technical leadership of the member companies. More than 140 enterprises are already convinced of the networking options at TechnologyMountains. Together, they represent the technological strength and innovative power in south-west Baden-Württemberg. The cluster initiative concentrates its activities specifically on the precision technological challenges in micro-engineering, metal and plastics processing, and material technology. The association provides access to technological know-how across the borders of the classical industries, especially for precision engineering in the automotive, electrical engineering, mechanical engineering, and medical engineering industries.

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Precision engineering / micro-engineering / microsystems technology cluster

In this cluster, a tradition stretching back over more than a hundred years and networks between many companies, have given rise to production sites whose competitive strength continues to grow to the present day. The cluster originates from the watch and clock making industry concentrated around Villingen-Schwenningen and Schramberg, which has dominated the world market for clocks and watches for many years. Today, it includes more than 3,000 enterprises. Now, precision engineering technology has been directly transferred to the micro-engineering industry, in which several hundred companies are currently active in the production of micro and precision components. They are involved with micro-assembly and micro-production. Production takes place in cleanrooms or under cleanroom conditions using ultra-modern methods from the field of microsystems technology.

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Health industry cluster

The health industry is of great importance and is strongly represented in the Schwarzwald-Baar-Heuberg region. In total, the Schwarzwald-Baar-Heuberg chamber of commerce and industry serves and represents almost 1,000 member companies in the area of the health industry. The health industry provides a total of 28,327 jobs subject to social insurance contributions, that is 15.1 % of all the jobs in the region. It is represented with 1,526 sites, including public institutions. This corresponds to 11.7 % of all enterprises in the Schwarzwald-Baar-Heuberg region. It is therefore an important economic sector.

Gesundheitsnetzwerk Schwarzwald-Baar

The Gesundheitsnetzwerk Schwarzwald-Baar cluster initiative of the district administration was founded to support and further strengthen the health sector. The basic concept of this cluster initiative is the cross-profession collaboration of all health professionals in the Schwarzwald-Baar district. Solutions and activities are jointly developed and realised on a project-basis. Each health care provider in the district can participate in various individual projects. The concept was developed in cooperation with several partners from the health sector in 2009 and is supported by them as well.

Gesundheitsnetzwerk Schwarzwald-Baar

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Medical engineering cluster

Tuttlingen has been renowned for the production of and trade with medical devices as early as the 19th century. More than 400 companies with a strong international focus make up the characteristic of the location and cluster structure. It is noteworthy here that more than 90 % of the enterprises are SMEs. The surgical mechanics industry represents the foundation of the medical engineering cluster that produces a large number of surgical instruments and implants. Today, systems for minimally invasive surgery are part of the innovative product range in this cluster. Furthermore, micro-engineering, mechatronics, plastics technology, automation, or new textile technologies play an increasingly important role.

MedicalMountains AG

Baden-Württemberg is one of the most significant regions for modern medical engineering world-wide. The centre of this industry is located in Tuttlingen where the headquarters of the MedicalMountains AG cluster initiative are also to be found. It is the goal of the MedicalMountains initiative to build a network of medical engineering enterprises, to utilize their common strengths, and to initiate cooperation projects. This creates forward-looking synergies for the companies. MedicalMountains' focus is on the support of small and medium-sized enterprises to promote their innovation capabilities, to extend their international networks, to bundle the interests of the industry, and to speak with one voice.

MedicalMountains AG

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New materials and surface cluster (plastics technology)

The Schwarzwald-Baar-Heuberg region features a high density of companies in the injection moulding industry. Besides the suppliers that are exclusively involved with injection moulding technology, especially in the areas of automotive, precision engineering, and medical engineering, there are many companies that have their origins in the metal industry but which now increasingly process plastics. Accordingly, the region hosts great expertise in the area of hybrid technologies. Projects such as the introduction of new materials (for example, ceramic components) to injection moulding processes, the utilization of innovative coating processes, or the efficient application of the hot runner technology, emphasize the cluster's high quality.

InnovationsAgentur Rottweil e. V.

A fact that is true especially for small companies, is that comfortable niches sometimes become obsolete over night – either because the product is not required any longer, the customer needs the product in a different material, or because there is a cheaper competitor. Therefore, entrepreneurs have taken the initiative and founded the InnovationsAgentur Rottweil e. V. so that they will be able to offer and market innovative services in the future

InnovationsAgentur Rottweil e. V.

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TechnologyMountains e. V.

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Production technology cluster

The industrial region of Schwarzwald-Baar-Heuberg has the highest density of machining technology enterprises in Germany, the centre being around Gosheim / Weihingen. They use the entire portfolio of metalworking, up to the latest multiple axis CNC machines and laser technology. Sector-wise, the emphasis is on automotive, especially the areas of powertrain and gearing, mechanical engineering and tools. Numerous enterprises have joined forces and founded an interest group. In its work, the cluster has set standards in the design of economic processes with a high machining performance and an energy and resource efficient layout of the machining process at the same time.

Machining technology cluster of the GVD Gemeinnützige Vereinigung der Drehteilehersteller e. V.

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
Furtwangen University (HFU)	<p>With approximately 6,000 students at its Furtwangen, Schwenningen, and Tuttlingen locations, the HFU is one of the larger universities of applied sciences in Baden-Württemberg. Undergraduate or Master studies, further professional education or doctorate – HFU offers the right programme for many educational targets in the fields of engineering, computer science, business information systems, business administration and engineering, digital media, international business, and health / life sciences. HFU's significant profile is applied research. Scientific results from applied research are the basis for inventions at HFU which are then ideally utilized in innovative processes and products in cooperation projects with the industry.</p>
Trossingen University of Music	<p>The Trossingen University of Music is an internationally recognised university whose origins lie in the cluster of the manufacturers of different musical instruments.</p>
Baden-Württemberg Cooperative State University (DHBW) Villingen-Schwenningen	<p>The DHBW Villingen-Schwenningen has 2,500 students. In cooperation with 950 selected enterprises and social institutions, it offers 16 accredited practice-integrated Bachelor and 4 Master study programmes in the schools of business and social work. The transformation of the former Academy of Professional Training into the Baden-Württemberg Cooperative State University in 2009 was a consequence of its excellent development. The very specific structural characteristics of the former Academy of Professional Training such as the inclusion of the cooperation partners as equals and the study design with alternating well-adjusted theoretical and practical phases of education have remained the same.</p>
International Business School Tuttlingen	<p>Since 2003, renowned companies that are active in the field of medical engineering have participated in the Master's degree programme sponsored by the city and district administration of Tuttlingen, which leads to an MBA degree. This graduate programme that focuses on the medical device & healthcare management teaches the latest management expertise at the highest level and the necessary soft skills, addressing leadership and engineering talents and next-generation managers and owners of companies.</p>

Institution	Fields of activity
<p>Research and transfer institutions</p>	<p>Institut für Mikroelektronik und Informationstechnik der Hahn-Schickard-Gesellschaft e. V. (HSG-IMIT) The Institute of Microsystems and Information Technology of the Hahn-Schickard-Gesellschaft (HSG-IMIT) engages in the industry-driven application-oriented research, development and production of microsystems technology. In trusting collaborations with the industry, mainly small and medium-sized businesses, the HSG-IMIT realizes innovative products and technologies in the future fields of technology such as mobility, environment and resources, health and care, and information and communication.</p> <p>MicroMountains Applications AG MicroMountains Applications AG is an independent driver of developments and innovations in the areas of mechatronics, ultra-fine and micro-engineering, sensors, and systems. In addition, the company offers a comprehensive range of services for promoting innovations with its qualified engineers and managers. MicroMountains Applications AG supports and assists other companies with its many years of experience in the entire innovation process - from requirements profile to serial production.</p> <p>Kunststoff-Institut Südwest GmbH & Co. KG (KISW), Villingen-Schwenningen The Plastics Institute Southwest (KISW) was founded by 20 companies in the region, the Schwarzwald-Baar-Heuberg Chamber of Commerce and Industry, and the Lüdenscheid Plastics Institute. Its focus is on the areas of hybrid technology, precision and micro-engineering, and medical engineering. The training courses are held in modern rooms and the Plastics Institute also has a laboratory and the necessary equipment for material and damage analyses. The institute provides a fully equipped workshop with five fully-automated injection moulding machines, from micro injection moulding to machines with clamping forces of up to 1,000 kN, for tests, sample runs, zero series, and training courses.</p>





Hochrhein- Bodensee



The region

The Hochrhein-Bodensee region has about 660,000 inhabitants. Its key characteristic are the strong links to neighbouring regions in France, Switzerland, Austria and Liechtenstein that are determined by direct economic relations and also by research and academic connections. This also shows in cross-border collaborations, for example, in the Trinational Eurodistrict Basel (TEB), the Hochrheinkommission, and the Four-Country Region around Lake Constance.

Cooperation with France and Switzerland

In the Waldshut and Lörrach districts, cooperation along the High Rhine is intense. Collaboration within the Four-Country Region around Lake Constance is important for the district of Constance. The regional clusters here also work across borders and the Cluster Initiative Lake Constance (Clusterinitiative Bodensee – CLIB) functions as their common platform. The innovative power of the chemical-pharmaceutical and of the biotechnology sector is outstanding.

The economy of the Hochrhein-Bodensee region is characterized by the production and the service sector to about the same extent as the state of Baden-Württemberg as a whole. Yet, the proportion of corporate services is below state-average.

The most important industries include:

- Metal industry with mechanical engineering, metal production and metal working (aluminium) and production of metal goods
- Food industry including production of food and animal feed
- Biotechnology

Compared to other regions, the innovative power of the Hochrhein-Bodensee region clearly ranks in the lower middle section.

Region's innovation index

Total index	26.5 %	State 38.8 %
• Level index	22.8 %	State 36.5 %
• Dynamic index	37.6 %	State 45.8 %

*Statistisches Landesamt Baden-Württemberg 2012
(Baden-Württemberg statistical office)

Employees in individual sectors*

Production sector	34.7 %	State 36.8 %
Service sector in total	64.6 %	State 62.8 %
• Trade	16.2 %	State 13.5 %
• Providers of corporate services	9.5 %	State 11.8 %
• Transport	3.6 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit) as of 30-Jun-2013

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The region's clusters and cluster initiatives

Aluminium processing cluster

The abundance of water in the High Rhine, the Lake Constance and in the Singen area was a decisive factor for the foundation of aluminium manufacturing and processing enterprises in the region more than a hundred years ago. The aluminium processing sites are consequently situated along the High Rhine, from Weil am Rhein in the West to Singen and Kreuzlingen in the East, with a high concentration in the Wutach valley. The area between is Swiss territory, with Neuhausen and Schaffhausen at its centre, and is part of this geographical concentration as well. The town of Wütöschingen represents a local centre. In terms of value adding, the focus is on the processing, machining and finishing of aluminium for the manufacture of semi-finished products and components as well as end products.

Aluminiumforum Hochrhein

In just over more than the last 100 years, a cluster of aluminium processing and machining companies has formed in the High Rhine area. In summary, their competencies have established an aluminium region that can fulfil almost any imaginable requirement relating to this light metal. Since 2004, regional enterprises have started to join their activities to market their competencies and also to improve their collaboration within the network. From the beginning, this cooperation has been designed bottom-up, meaning that it is based on the enterprises' demands. It is moderated by the Wirtschaftsregion Südwest GmbH which has managed in the meantime to establish the High Rhine region as an (inter)national aluminium centre of competence.

Wirtschaftsregion Südwest GmbH – Geschäftsstelle Waldshut

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Automotive cluster

There are several global players in the automotive industry in this region, but mainly it consists of many SMEs that often operate in their specific niches. Manufacturers (primarily of commercial vehicles) are also located in the region. Their customers are virtually all of the renowned producers world-wide. The product variety is huge; this is more important than the concentration on specific areas – as a result it would be possible to build a complete vehicle with the capacities available in this region! There is a tendency to higher-quality components in smaller quantities for the luxury segment. The networks are rather loose because the business relations are mainly directly between the OEMs or higher tier suppliers. A regional value chain – and two cluster initiatives – are beginning to develop here.

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Biotechnology cluster

The Lake Constance region is characterized by a great variety of research and production companies in the areas of pharmaceuticals, biotechnology, diagnostics, medical engineering, analytics, medical and bioinformatics, nutrition, and environmental protection. Among them are some younger technology-driven companies but also well-established companies such as the pharmaceutical company Takeda GmbH or the biotech company GATC Biotech AG. Several institutions such as the University of Constance, the associated Biotechnology Institute Thurgau, and the Albstadt-Sigmaringen University conduct fundamental research in life sciences. In the Four-Country Region around Lake Constance, the cluster is organised across borders and has partners in Switzerland and Austria.

BioLAGO e. V. – life science network

BioLAGO e. V. is a cross-border cluster initiative for life sciences and biotechnology around Lake Constance. As a platform and association encompassing the entire lake area it brings together about 80 enterprises and research institutions and thus provides about 6,000 highly qualified positions, of which 500 are held by scientists in Germany, Switzerland, Austria, and Liechtenstein. The members of the association come from the key industries of pharmaceuticals, diagnostics, biotechnology, medical engineering, nutrition, environmental protection, analytics, medical engineering and bioinformatics. The goals of the cluster initiative are the cooperation between science and industry for innovations, the strengthening of the life sciences industry, and cross-border cooperation projects in the Lake Constance region.

BioLAGO e. V. – life science network

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Forestry and timber cluster

The BodenseeHolz forestry and timber cluster was established by representatives from the timber industry in the Four-Country Region around Lake Constance. This cluster initiative not only consists of enterprises, it also includes representatives from educational institutions. Through cooperation with and consulting by the Bodensee Standort Marketing GmbH, the cluster in the Four-Country Region around Lake Constance tries to ensure that it remains competitive nationally and internationally in the long-term. This is supported by conferences and workshops, and other informational events, and by the exchange of experiences between science and industry. In addition, the cluster stakeholders benefit from the new services and products offered by the cluster initiative that will increase timber construction and lead to the building of a brand in the long run.

BodenseeHolz forestry and timber cluster

At the centre of the cluster initiative's focus is the entire timber value chain. The BodenseeHolz cluster initiative was founded in 2012 by institutions and companies from the timber industry. It includes companies that are part of the value chain, from forestry to architects. One key focus area is the utilization of hardwood. The cluster initiative is currently working on new products and processes with respect to hardwood. In addition, the cluster initiative is working out a new regional brand for domestic wood.

Cluster Forst und Holz „BodenseeHolz“

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Information technology, IT applications / enterprise software cluster

The cluster in the High Rhine and Lake Constance region extends over the complete Southern part of Baden-Württemberg, from the west (France) to the south (Switzerland) and the east (Bavaria / Austria). Due to its very specific geographical location, the cluster is closely connected with other partners, cluster initiatives, networks, and institutions from the entire High Rhine and Lake Constance region, and also from across the borders in Switzerland and Austria. It is characterized by the large number of small and medium-sized innovative enterprises (SMEs).

connect Dreiländereck – the IT network in the Lörrach and Waldshut regions

It is the goal of the trinational connect Dreiländereck IT cluster initiative to build more closely knit networks between regional IT companies and IT departments, between companies and their suppliers and customers, to find points for cooperation and common target fields, and to initiate the corresponding measures. A survey among IT companies in the Lörrach and Waldshut districts showed the following: strong networks in the region, an active network management, and above all more personal contacts are the main priorities of the participating companies.

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cyberLAGO e. V. – IT competence network

cyberLAGO is a cross-border network of competence for IT and digital media around Lake Constance. The cluster initiative links digital competencies and supports its members in hiring specialists and in their public relations work. Furthermore, the cluster initiative promotes the cooperation between science and industry to strengthen the Lake Constance IT location. The association was founded in October 2013 and currently has 45 members, including universities, well-established companies, young entrepreneurs, and public institutions.

cyberLAGO e. V.

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Environmental technology cluster

The stakeholders in the environmental technology cluster around Lake Constance are to be connected in an environmental technology network. The Netzwerk Umwelttechnologie cluster initiative is intended to become the central communication platform for the environmental technology industry in the regions around Lake Constance. Its goal is to develop the Lake Constance area and make it one of the most innovative and powerful environmental technology regions in the medium and long term by improving networking and the targeted support within the environmental technology cluster. This also furthers the competitiveness of the Lake Constance region as an industrial location on a global scale.

Netzwerk Umwelttechnologie e. V.

Netzwerk Umwelttechnologie e. V. includes enterprises, craft shops, start-ups, universities, research institutions, service providers, organizations and foundations from the sector of environmental engineering. The cluster initiative intends to increase communication dynamics between the individual stakeholders, promote knowledge and technology transfer and improve the competitiveness and innovation capability, especially of SMEs. Netzwerk Umwelttechnologie aims to boost the regional value adding and achieve positive effects on employment at the industrial location under the label Four-Country Region around Lake Constance. Netzwerk Umwelttechnologie e. V. is part of the Cluster Initiative Lake Constance (Clusterinitiative Bodensee – CLIB).

Netzwerk Umwelttechnologie c/o Bodensee Standort Marketing GmbH (BSM)

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Packaging technology cluster

This cluster is based on well-established enterprises along a wide-stretched value chain. Its major centres are located north as well as south of the Rhine and Lake Constance. The German side is particularly characterized by packaging firms working in the food and pharmaceuticals sector and by manufacturers of packaging materials (flexible packaging). Schaffhausen is home to the International Packaging Institute (IPI), which acts on a cross-border basis as a centre of competence and as a central platform for the packaging industry. Under the academic roof of HTWG (the former Higher Technical Institute for Mechanical, Electrical and Civil Engineering of Constance), Masters of Engineering in packaging technology are educated at the IPI. Another centre of the packaging technology cluster is located in the Singen area, around the company Alcan Packaging Singen GmbH. In terms of value adding, packaging machine manufacturers, packing material producers, packaging manufacturers and packaging firms (for example, Maggi Singen) but also their suppliers and some universities are integrated into the cluster.

Packaging technology cluster (IPI) Lake Constance

An international network in the Four-Country Region around Lake Constance aiming towards the strengthening of companies in this sector of economy and the corresponding job market. All levels of the value chain are represented in this cluster initiative, some even by global leaders. Companies and research institutions are to be linked across borders and a technological centre of competence for packaging technology is to be established to strengthen the innovation capabilities. The packaging technology cluster Lake Constance is part of the Cluster Initiative Lake Constance (CLIB).

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
University of Basel	The university offers both natural science and medical study programmes. Moreover, both faculties together form a research centre for life sciences with a large number of different research groups that are of direct importance for the BioValley initiative.
University of Constance	Engineering and natural sciences study programmes: biological sciences, life science, chemistry, computer science, physics. Transfer through Center for Applied Photonics (CAP) and more than ten organizations of Steinbeis transfer centres.
Hochschule Konstanz – University of Applied Sciences (HTWG)	Cluster relevant education programmes are the programmes in mechanical engineering, process and environmental engineering, electrical engineering, information technology, computer science and communication design. Additional transfer through the Institute of Applied Research (IAF).
Baden-Württemberg Cooperative State University (DHBW) Lörrach	Selected engineering and economics study programmes: life science informatics, information technology, mechatronics, mechanical engineering, industrial engineering, industrial business administration, tourism business administration, international business management, business informatics. The trinational study programmes in cooperation with the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) and the Université de Haute-Alsace are a speciality.
Research and transfer institutions	<p>Fraunhofer Institute for High-Speed Dynamics Of relevance for the regional cluster is the Freiburg-based Fraunhofer Institute for High-Speed Dynamics (Ernst-Mach-Institut, EMI) with its external branch in Efringen-Kirchen.</p> <p>International Solar Energy Research Center Konstanz e.V. International Solar Energy Research Center Konstanz e.V. researches and develops crystalline silicon solar cells. Additional transfer through NEB e. V. (Nano Zentrum Euregio Bodensee) and ten other companies from the Steinbeis organization (Associated with the University of Constance, Hochschule Konstanz University of Applied Sciences (HTWG), and Baden-Württemberg Cooperative State University (DHBW) Lörrach).</p> <p>Paul Scherrer Institute (PSI), Villigen, Switzerland The Paul Scherrer Institute (PSI) is the largest research centre for natural and engineering sciences in Switzerland. It conducts fundamental and applied research in three main subject areas: matter and material, energy and the environment, and human health.</p>

10



Neckar-Alb



The region

The Neckar-Alb region includes the districts of Reutlingen, Tübingen and Zollernalb. The cities of Reutlingen and Tübingen, located approximately 40 km south of the state capital of Stuttgart, represent the economic centre of the region that forms the southern part of the European Metropolitan Region of Stuttgart. This specifically reflects in the automotive and mechanical engineering cluster when regarded in connection with the Stuttgart region.

Important role in the areas of automotive, mechanical engineering, and technical textiles

The Neckar-Alb region stretches over an area of 2,465 km² and has about 677,000 inhabitants. In particular the automotive and mechanical engineering clusters, which play an instrumental role for the Neckar-Alb region, must be regarded in connection with the Stuttgart region. Their location directly south of the Stuttgart trade fair and airport, in between the A8 and A81 motorway, offers a central infrastructural advantage. The textile, medical engineering and biotechnology clusters and their networks have a strong focus on the Neckar-Alb region and its neighbouring regions in the south. Four universities provide for an intense transfer of knowledge. Its highly diversified economic structure contributes to the clusters' networking activities beyond regional borders.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction and public sector) include:

- Metal industry with mechanical engineering and production of metal products
- Textile sector

Its innovation power ranks in the lower middle section compared to the other regions. Nevertheless, an average innovation dynamic has developed in the Neckar-Alb region.

Region's innovation index

Total index	34.6 %	State 38.8 %
• Level index	30.9 %	State 36.5 %
• Dynamic index	45.5 %	State 45.8 %

Employees in individual sectors*

Production sector	38.6 %	State 36.8 %
Service sector in total	61.1 %	State 62.8 %
• Trade	14.7 %	State 13.5 %
• Providers of corporate services	8.5 %	State 11.8 %
• Transport	2.8 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-June-2013

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The region's clusters and cluster initiatives

Automotive cluster

Due to the favourable location near well-known OEMs (Original Equipment Manufacturers) and car manufacturers in the European Metropolitan Region of Stuttgart (reachable within 30-45 minutes driving time), the region is a preferred location for supplier firms. The predominantly small to medium-sized enterprises as well as the traditional sites of large corporations with workforces of over 1,000 employees benefit from the outstanding innovative power as a result of the close cooperation all along the value chain.

CCI Automotive Network

The Chamber of Commerce and Industry's automotive network was established in 2007 to represent the interests of the location and to link corporate and research activities in the automotive supplier industry. The cluster initiative represents a selection of 46 companies from 222 automotive suppliers in the Neckar-Alb region. It is a sustainable self-financed network structure at management level.

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Health industry cluster

Measured by the number of jobs, the health industry is the largest industry in Baden-Württemberg and the Neckar-Alb region. As demographics change, services connected with health gain more and more importance. In particular, preventive measures and care services benefit from this change. The cluster benefits from the Tübingen University Hospital and the fact that life expectancy in the region is the highest within Baden-Württemberg. Services in this area especially offer great employment potential. The promotion of employment is of great significance for the local labour market in addition to providing good perspectives for start-ups.

CCI network of health, nutrition and sports

The Chamber of Commerce and Industry's (CCI) network of health, nutrition and sports – IHK-Netzwerk Gesundheit, Ernährung, Sport – links enterprises and institutions from the health sector in the Neckar-Alb region with a focus on the services sector. The cluster initiative specifically aims to stimulate the economic activities in connection with health and prevention in the Neckar-Alb region. With these services, the Reutlingen CCI intends to extend its service range to this high-employment and innovative industry. Informational events are held by the cluster initiative so that all member companies can benefit from this project.

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Medical engineering cluster

This cluster is largely dominated by medium-sized enterprises focusing on electrical medicine and it is still in its growth phase. It is based on a variety of development lines: spin-offs from and around the University of Tübingen and developments in the Hechingen area which are strongly linked to the textile tradition and to the traditional competencies in the field of precision mechanics.

Medical Valley Hechingen cluster

In 2002, the city of Hechingen initiated a cooperation project between all companies in the medical engineering industry in the Hechingen area. The project targeted the strengthening of the medical engineering cluster, innovative developments of jobs and increasing the awareness of politics and the industry for the region. This led to the foundation of the Medical Valley Hechingen competence network in 2003 and then in 2009 the Medical Valley Hechingen Akademie e. V. association. The cluster initiative includes more than 40 medical engineering companies, including suppliers and service providers, the universities of Stuttgart and Tübingen, the Natural and Medical Sciences Institute at the University of Tübingen (NMI), and the BioRegio STERN Management GmbH.

Medical Valley Hechingen Akademie e. V. / Stadt Hechingen, Wirtschaftsförderung

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Neckar-Alb medical engineering

More than 70 medical engineering companies, the Tübingen University Hospital and specific research institutions form the centre of the Medizintechnik Neckar-Alb cluster initiative. Instruments for electrical medicine, blood pressure monitors, stents, and mobility aids are typical products of the stakeholders in research and production. In addition to generating new products and business for the companies involved, the cluster initiative also aims to attract new companies to settle in the region and to strengthen the Neckar-Alb location in general.

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Textiles and clothing cluster

This traditional cluster that is characterized by medium-sized enterprises enjoys a strong competitive position – despite the steady decrease in jobs in this sector over the past decades. The value chain in the region is largely represented by sections which include textile machine engineering, textile chemistry, and supra-regional marketing structures.

Neckar-Alb Technical textiles cluster

The Cluster Technische Textilien Neckar-Alb cluster initiative was established by the Reutlingen Chamber of Commerce and Industry in February 2012. Currently, 51 companies and research institutions are participating in the cluster's activities. Key responsibilities of the cluster management are internationalization measures and the transfer of technology with the goal of strengthening the economic power of the participating companies. Workshops regarding future-related issues are one of the measures. In the area of internationalization, the joint appearance as a cluster initiative has led to a stronger international visibility – this includes joint stands at industry-related trade fairs and publications regarding current developments in industry magazines.

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
University of Tübingen	<p>Faculties: especially medicine, mathematics and physics, chemistry and pharmaceuticals, biology, earth science, information and cognition science, protestant theology, catholic theology, law, medicine and University Hospital Tübingen, philosophy, sciences and social sciences, mathematics and sciences, islamic theology.</p> <p>Interfaculty institutes:</p> <ul style="list-style-type: none"> • Interfaculty Institute for Cell Biology (IFIZ) • Interfaculty Institute of Microbiology and Infection Medicine (IMIT) • Interfaculty Institute of Biochemistry (IFIB) • Institute for Archaeological Sciences (INA) <p>Transfer: Technology transfer office at the University of Tübingen and several companies of the Steinbeis organization that are managed by university professors (for example the Steinbeis Global Institute Tübingen transfer institute).</p>
Reutlingen University	<p>Informatics, production management, international business, applied chemistry, engineering, textiles and design.</p> <p>Transfer through two Institutes of Applied Research and seven companies of the Steinbeis organization.</p>
Albstadt- Sigmaringen University	<p>Faculty: engineering, business and computer science, life sciences, and computer science / informatics.</p> <p>Transfer through Institute of Applied Research (IAF).</p>
University of Applied Forest Sciences Rottenburg	<p>Faculty: Forestry, Bioenergy, and Sustainable Energy Competence (SENCE).</p> <p>Transfer through two institutes of the Steinbeis organization.</p>



Institution	Fields of activity
<p>Research and transfer institutions</p>	<p>Specialist Institutes at the Albstadt-Sigmaringen University These have been organized for applied research and represent the focus areas within the university:</p> <ul style="list-style-type: none"> • FIW – Specialist Institute of Engineering and Economic Sciences • InViTe – Institute of in vitro Test Systems • KEIM – Institute of Knowledge Engineering and Information Management • IES – Institute for Real-Time Systems and Software Engineering • IRGP – Institute of Computer-Aided Product Development <p>Natural and Medical Sciences Institute (NMI) at the University of Tübingen in Reutlingen The NMI conducts industry-related contract research and development where bioscience and material science meet.</p> <p>Other institutions:</p> <ul style="list-style-type: none"> • Max Planck Institute for Biology • Max Planck Institute for Biological Cybernetics • Friedrich Miescher Laboratory for biological workgroups of the Max Planck Society <p>In addition, there are the German Institutes of Textile and Fiber Research (DITF) in Denkendorf, which are in fact located in the Stuttgart region but have their origins in Reutlingen and are of major significance for the textile cluster.</p>





Donau-Iller



The region

The Baden-Württemberg part of the Donau-Iller region that stretches beyond the state's border are the districts of Alb-Donau and Biberach and the urban district of Ulm, all in all covering an area of 5,460 km². The Baden-Württemberg city of Ulm together with the Bavarian city of Neu-Ulm form the centre of the cross-border region of Donau-Iller. Its economy is dominated by medium-sized companies and comprises many family-run businesses. It is also home to many global leaders. The region's industrial strength (mechanical engineering, pharmaceuticals, etc.) is supported by an outstanding sector mix.

Sector mix and global leaders as the keys to success

The regional clusters or cluster initiatives mostly operate across the state borders. Compared to the state of Baden-Württemberg as a whole, the region's economy is more production-based. Therefore, its share of the entire services sector is below the state average.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction and public sector) include:

- Metal industry with mechanical engineering and production of metal products
- Commercial vehicle production and suppliers
- Manufacturers of pharmaceutical products
- Logistics

The innovative power of the Baden-Württemberg parts ranks top compared to other regions. This is due to the above-average innovation level, ranking in second place, and the above-average dynamic of its innovation activities. Highly innovative enterprises and a distinct research landscape consisting of universities and non-academic research institutions are responsible for this extremely high level.

Region's innovation index

Total index	43.5 %	State 38.8 %
• Level index	40.5 %	State 36.5 %
• Dynamic index	52.5 %	State 45.8 %

Employees in individual sectors*

Production sector	43.2 %	State (BW) 36.8 %
Service sector in total	56.2 %	State (BW) 62.8 %
• Trade	13.4 %	State (BW) 13.5 %
• Providers of corporate services	7.9 %	State (BW) 11.8 %
• Transport	4.9 %	State (BW) 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit), as of 30-Jun-2013 for the entire Donau-Iller region

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The region's clusters and cluster initiatives

Automotive cluster

This is a well-established cluster with additional potential for development. It not only encompasses its central area of Ulm / Neu-Ulm but also the entire territory of the Ulm Chamber of Commerce and Industry and also parts of the Schwaben Chamber of Commerce and Industry territory in the Bavarian districts of Neu-Ulm and Günzburg. Large parts of the related commercial vehicle production value chain are represented in this region: from commercial vehicle producers to their tier 1-3 suppliers and the relevant engineering service providers. Beside the unique concentration of six OEMs (Original Equipment Manufacturers) covering the various sub-segments of the commercial vehicle industry, the regional universities with their special automotive competence centres are also noteworthy.

Cluster Nutzfahrzeuge Schwaben (CNS) e.V. (Commercial Vehicles Cluster)

The Cluster Nutzfahrzeuge Schwaben (CNS) e. V. cluster initiative comprises a total of 38 member companies and institutions operating in the fields of commercial vehicles, special-purpose vehicles, body and trailer manufacture, and system and component manufacture. The initiative was established as an official association in 2007 and primarily targets the creation of an open innovation culture through intense networking to achieve clear competitive advantages. At the centre of its activities is the identification of synergy and cooperation potential and the intention to make this potential usable. This facilitates access to the universities in the region and thus to new technologies.

Cluster Nutzfahrzeuge Schwaben (CNS) e. V.

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Biotechnology cluster

This cluster is an example of expansion across regional and state borders. It stretches across the Ulm Innovation Region with its regional centre of Ulm / Neu-Ulm and the two districts of Alb-Donau and Neu-Ulm as well as the Upper Swabian districts of Biberach and Ravensburg; in the north it reaches as far as the district of Heidenheim in the Ostwürttemberg region. It is a central European location for research, development and production in this field of expertise, particularly in the area of biopharmaceuticals. In this sector, the region enjoys an outstanding growth potential.

BioRegionUlm e. V.

With its activities, BioRegionUlm e. V. supports the development of innovative ideas and their translation into marketable products. Its specific core competencies here are the areas of biotechnology, pharmaceuticals, and medical engineering. This is achieved by a close cooperation between enterprises and research institutions from these life sciences. The association acts as a point of contact between science and industry and offers a platform for an interdisciplinary dialogue.

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Logistics cluster including intra-logistics

The Donau-Iller region is one of Baden-Württemberg's three core logistical regions. The motorway junction of the A7 and A8 is a determining factor for the Ulm region and with its trans-shipment sector the region serves as a vital hub for freight traffic. Accordingly, in addition to the new logistics centre in the north of Ulm with its terminal for multi-modal transport, the region is home to numerous companies operating in the field of freight logistics, especially forwarders and carriers including storage and trans-shipment capacities. Various studies confirm that the region's industrial diversity is far above average and that it also features a strong dynamic.

Logistik-Cluster Schwaben (LCS) e. V.

Logistik-Cluster Schwaben was founded in May 2011 and generates new ideas for the logistics sector. Guided by the idea of a Supply Chain Region, 33 enterprises took the initiative with the support of the Schwaben and Ulm Chambers of Commerce and Industry. Today, the cluster initiative has 85 members. The cluster initiative's work can be described by two words: Marketing and networking for the region, as a strong production location and logistics hub. Furthermore, the cluster initiative informs the wider public, politics and administration about the importance of logistics, for example, as a driver for the economy or as an attractive employer. However, the cluster initiative is also a platform for all parties in the supply chain where they can exchange their experiences and learn from each other.

Logistik-Cluster Schwaben c/o IHK Ulm

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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
Ulm University	Selected study programmes in engineering, natural sciences, and economics: electrical engineering, computer science, communications and computer engineering, media informatics, molecular medicine, biology, biochemistry, chemistry and management, physics, physics and management, and study programmes in medicine and dentistry and the Institute for Laser Technology in Medicine and Measurement Technique (ILM) and the Scientific Computing Centre Ulm.
Ulm University of Applied Sciences	Selected engineering and economics study programmes: automotive engineering, automotive electronics, industrial electronics, mechanical engineering, mechatronics, medical engineering, communications engineering, production engineering, industrial engineering, systems engineering and management. In addition, cooperative study programmes are offered together with the Neu-Ulm University of Applied Sciences teaching industrial engineering or industrial engineering with focus on logistics.
Neu-Ulm University of Applied Sciences	Selected business study programmes: information management automotive, business studies in healthcare management, business management for doctors, management for healthcare professionals. Centre for Logistics and Centre for Networked Health.
Biberach University of Applied Sciences	Selected study programmes: pharmaceutical biotechnology, business administration, project management. In addition, the Institute of Applied Biotechnology (IAB) is located at the Biberach University of Applied Sciences.

Institution	Fields of activity
<p>Research and transfer institutions</p>	<p>Institute of Applied Biotechnology (IAB) The IAB institute located in Biberach provides the opportunity to conduct biotechnological research in the course of publicly funded projects and contract research projects, in cooperation with the industry but also with national and international universities. The institute's core competencies are the production processes for biopharmaceuticals and for products of the industrial (white) biotechnology.</p> <p>Institute for Laser Technology in Medicine and Measurement Technique (ILM) This Ulm-based institute is focused on transfer in the areas of medicine and measurement technology.</p> <p>Scientific Computing Centre Ulm (UZWR) The UZWR is an interdisciplinary institution of Ulm University that specialises in researching application-oriented issues in science and industry. They attempt to solve these problems using the latest numerical methods (= scientific computing).</p> <p>Centre for Solar Energy and Hydrogen Research (ZSW) ZSW conducts applied research in the field of renewable energies at its sites in Stuttgart and Ulm. Its fields of research range from thin-layer photovoltaic to regenerative energy sources and battery research. Their current research work focuses on improving efficiency of thin-layer photovoltaic (world record holders in CIS solar cells), the power to gas project, fuel cell systems and material research in the area of lithium ion batteries. Transfer at the Ulm location also takes place through 20 companies of the Steinbeis organization.</p>



12



Bodensee- Oberschwaben



The region

The Bodensee-Oberschwaben region is located in the farthest southeastern part of Baden-Württemberg and comprises the three districts of Ravensburg, Sigmaringen and the district of Lake Constance. About 608,000 people live here. From a historical point of view, the airship enterprise founded by Count Zeppelin in Friedrichshafen in 1908, Luftschiffbau Zeppelin GmbH, was the start of the development of the local technology-oriented clusters. Even today, the aerospace industry plays a prominent and important role in the region. Furthermore, the Lake Constance / Upper Swabian region enjoys an international reputation as a tourism and health spa region.

Everything started with Zeppelin

Compared to the state of Baden-Württemberg as a whole, its economy is more production-based and stronger than the average. As a consequence, its share of the entire services sector is lower than the state average.

In the more densely populated area and regional centre of Friedrichshafen/Ravensburg/Weingarten, the region has a strong industrial core and economic strength. However, the rural areas are also home to some significant enterprises.

The most important industries (by number of employees subject to social insurance contributions, not including trade, construction and public sector) include:

- Metal industry with mechanical engineering and production of metal products
- Vehicle production and suppliers
- Production of electrical equipment

Compared to that of other regions, its innovative power is slightly below average. However, this is due to the differing innovative strengths and structures of the districts. While the innovative level reached by the district of Lake Constance is very high, making it one of the most innovative districts, the district of Sigmaringen has a very high dynamic.

Region's innovation index*		
Total index	35.5 %	State 38.8 %
• Level index	33.2 %	State 36.5 %
• Dynamic index	42.4 %	State 45.8 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit) as of 30-Jun-2013, also see "Employment figures" in the glossary.

Employees in individual sectors*		
Production sector	41.8 %	State 36.8 %
Service sector in total	57.4 %	State 62.8 %
• Trade	12.2 %	State 13.5 %
• Providers of corporate services	7.6 %	State 11.8 %
• Transport	3.4 %	State 4.0 %

*Employment statistics of the German employment agency (Bundesagentur für Arbeit) as of 30-Jun-2013, also see "Employment figures" in the glossary.

Contact

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The region's clusters and cluster initiatives

Automotive / vehicle construction cluster

The core of this cluster is formed by two large-scale corporations from the field of drive and chassis technology that rank in top positions in the international arena. In this connection, activities in the area of hybrid and electric drive systems and of vehicle electronics and software have increased as well. There has been a high number of patent registrations in this area. Besides three manufacturers or furnishing companies of campers, the commercial and special-purpose vehicle industry is of importance too. Many small and medium-sized enterprises form the supplier landscape of the cluster, for example engineering companies. The subject of engineering is generally closely linked to the clusters of automotive, mechanical engineering, and aerospace.

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Health industry cluster

The cluster is characterized by the Lake Constance tourism and also by a large number of spas including health and rehabilitation centres and many geriatric care institutions and institutions for persons with special needs. It features a very diversified value chain that ranges from standardized social benefits to exclusive recreational and health-related tourism.

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Aerospace cluster

The cluster formed at the beginning of the 20th century in and around Friedrichshafen when Count Ferdinand von Zeppelin started to build airships and Claude Dornier built the first metal aeroplanes. In 1962, the first aerospace division was established within Dornier which still exists today as the Airbus Defence and Space site. Over the past decades, many supplier companies have been founded in the area of satellite production and the manufacture of aeroplanes. The cluster features a high research and development intensity so that - in addition to the industry - the local universities and scientific institutions have increased their engagement in this sector over the past years. The subject of aerospace technology is generally closely linked to the clusters of automotive, mechanical engineering, and engineering.

BodenseeAIRea

The BodenseeAIRea cluster initiative was established and initiated by the business development office of the Bodenseekreis district (Wirtschaftsförderung Bodenseekreis GmbH, WFB). Many companies and project partners of the Baden-Württemberg Cooperative State University Friedrichshafen, Fraunhofer IAO, Constance University of Applied Sciences (HTWG), Bodensee-Oberschwaben Chamber of Commerce and Industry, and the Zeppelin University actively participate in this initiative. They aim to intensify and develop their networks amongst themselves and with research and university institutions they aim to be able to use the individual innovation potentials even more efficiently.

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Production technology cluster

In the production technology and mechanical engineering cluster the companies are involved with innovative solutions for a wide range of applications. The cluster companies' target markets are the international markets. The areas of mechatronics and information technology, also automation engineering, have become more and more important for controlling machines and plants and the corresponding production processes. The subject of production technology / mechanical engineering is generally closely linked to the clusters of automotive and aerospace.

Virtuelle Fabrik Baden-Württemberg e. V.

The Virtuelle Fabrik Baden-Württemberg e. V. (the virtual factory of Baden-Württemberg) is a cooperation network for companies from the production and automation engineering industry. The cluster initiative almost fully represents the value chain, from development and design to the production of systems including complete production steps. The value chain does not only include the mechanical components but also the complete electronic systems. It includes project management, development, design, production of control systems, machining and stamping processes, mechanical engineering and tools, surface technology and quality assurance. Production technology and automation engineering include, for example, analysis methods, optical measurement technology, industrial control systems, and devices for the wireless transmission of data or energy.

Virtuelle Fabrik Baden-Württemberg e. V.

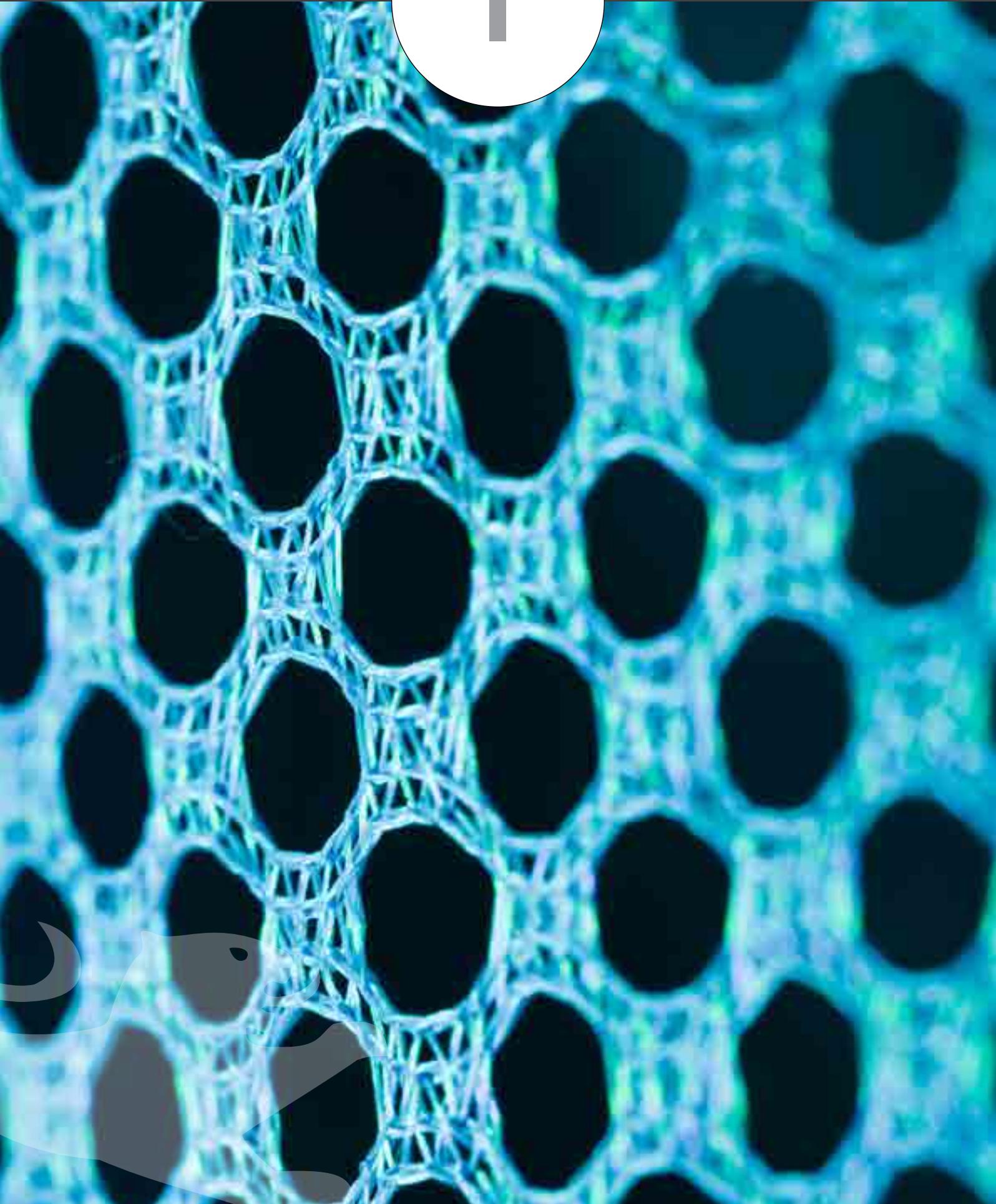
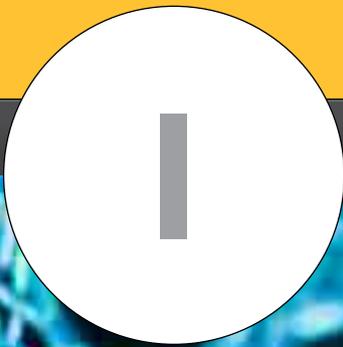
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Cluster-relevant services – Universities, research and transfer institutions

Institution	Fields of activity
Zeppelin University, Friedrichshafen	Chairs, institutes, and centres of economics, cultural sciences, political and social sciences, and cross-institute research. EFTEK - Technology Management Centre. A cooperation project between the Fraunhofer IAO and the Zeppelin University.
University of Applied Sciences Ravensburg- Weingarten	Faculties of electrical engineering & information technology, mechanical engineering, technology management, social work, health & care. Institute of Applied Research (IAF).
Albstadt-Sigmaringen University	Faculties of engineering, computer science / informatics, life sciences, and business and computer science. Institutes of Applied Research (IAF).
Baden-Württemberg Cooperative State University (DHBW) Ravensburg, Friedrichshafen Campus	Faculty of economics in Ravensburg, faculty of engineering in Friedrichshafen. Institute of education, knowledge and technology transfer (Institut für Weiterbildung, Wissens- und Technologietransfer, IWT).
Naturwissenschaftlich- Technische Akademie (NTA) Prof. Dr. Grübler gGmbH – licensed University of Applied Sciences and Vocational College, Isny	The academy of natural sciences and technology offers study programmes in chemistry, pharmaceutical chemistry, physics engineering, and computer science.
Steinbeis	Steinbeis Business Academy (of the Steinbeis University Berlin) with study locations in Überlingen and Friedrichshafen: Part-time study programmes in the area of economic sciences. Various Steinbeis transfer enterprises.





State-wide and cross-regional networks

AFBW – Allianz Faserbasierte Werkstoffe Baden-Württemberg e. V. (Alliance of fiber-based materials)

AFBW is a cross-industry technology network and covers the entire value chain of fibre-based materials – from suppliers to users and research institutions. The AFBW offers a platform for dialogue and knowledge transfer and sees itself as a driver of innovations. Together with enterprises, universities, and research institutions, AFBW presents new solutions and supports the renaissance of the fibre. As a cross-sectoral and cross-industry organisation, the AFBW comes up with new ideas for material and product innovations with the goal of improving the companies' and the region's competitiveness.

AFBW – Allianz Faserbasierte Werkstoffe Baden-Württemberg

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AKZ Baden-Württemberg e. V.

AKZ Baden-Württemberg e. V. is a state-wide network of independent medium-sized family enterprises in Baden-Württemberg. The association was initiated by the Baden-Württemberg Ministry of Economics and founded in 1972 to improve the performance of regional SMEs in respect of their export activities. It supports the individual companies through different activities in the areas of information, communication and project-based collaborations so that they can commonly enjoy the benefits from the given potentials.

AKZ Baden-Württemberg e. V. c/o Kownatzki GmbH & Co. KG

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automotive-bw

The state-wide automotive-bw network is an association of regional cluster initiatives with its focus on the automotive industry. The central cluster management is located at the offices of RKW Baden-Württemberg in Stuttgart. Their joint goal is the strengthening and securing of the innovation and production location of Baden-Württemberg. The initiative's central approach is the trusting cooperation between vehicle manufacturers, suppliers, and research institutions to better exploit the innovation potential and to better cope with the challenges the industry is facing.

RKW Baden-Württemberg GmbH

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Baden-Württemberg: Connected e. V. (bwcon)

bwcon is the leading private business initiative for promoting the innovation and high-tech location Baden-Württemberg. As one of the most successful technology networks in Europe, bwcon connects more than 600 enterprises and research institutions. More than 5,000 experts benefit from the systematic networking activities on the bwcon platform. The initiative's emphasis is on information and communication technology (ICT) in the fields of mobility / satellite navigation, health care, creative industries, and energy. In this way, bwcon creates the basis for a cross-industry use of technology and for interdisciplinary cooperation between developers, users, and investors. Members provide first-hand information to other members in lectures, workgroups, and through consulting. Current issues are discussed in Special Interest Groups (SIGs), seminars, and specialist forums. Bwcon is a registered association with offices in Stuttgart and Freiburg. The operative management of the association is mostly taken over by its own bwcon GmbH in which the Steinbeis Beratungszentrum GmbH holds a share as well. At present, approximately 17 employees work for the association and the GmbH.

Baden-Württemberg: Connected e. V. (bwcon)	
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BIOPRO Baden-Württemberg GmbH

BIOPRO Baden-Württemberg GmbH supports the health industry with its sub-sectors of medical engineering, biotechnology and the pharmaceutical industry. As an innovation company operating state-wide, it supports the establishment of a bioeconomy in Baden-Württemberg and provides ideas for the location development. BIOPRO Baden-Württemberg is the central point of contact in the strategic triangle of research institutions, enterprises, and cluster initiatives. Since 2002 it has been funded by the Ministry of Finance and Economics and the Ministry of Science, Research and the Arts and it represents the location nationally and internationally. To drive innovations, BIOPRO creates networks between enterprises and links them with research institutions. Moreover, it supports persons willing to found enterprises.

BIOPRO Baden-Württemberg GmbH	
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bw-construction

A state-wide network of Baden-Württemberg trade enterprises, planners, and engineers from the areas of construction and finishing was founded in 2011 under the name bw-construction. This entrepreneurs network aims to help with the canvassing of interesting foreign and domestic markets, serve as a platform for an exchange of experiences, and develop innovative solutions in the area of sustainable construction. The member companies of the state-wide network basically cover the most important services around construction and the major sectors of the construction value chain.

bw-construction	
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Cluster Fuel Cell BW

Cluster Fuel Cell BW drives the industrialization of mobile and stationary fuel cell applications. It aims for both added value and the creation of jobs in Baden-Württemberg. It actively supports the energy transition and the introduction of electric mobility. The state-wide network makes Baden-Württemberg the leading location for the production, storage, and use of hydrogen in Europe. It is the shared goal of all partners to conduct various projects and realize plans regarding the topic of hydrogen to promote the industrialization of this new technology and make it ready for serial production.

e-mobil BW GmbH

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e-mobil BW GmbH – State Agency for Electric Mobility and Fuel Cell Technology Baden-Württemberg

The State Agency for Electric Mobility and Fuel Cell Technology in Baden-Württemberg is the central point of contact and service office of the state for all concerns around the topic of electric mobility. As an innovation company operating state-wide, it supports specific universities, research institutions, companies, networks, and communities to make the technological development towards electric mobility a success for Baden-Württemberg as an economic location. The focus is on the vehicle, energy, production, and information and communication industries.

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Electric Mobility South-West

The Leading-Edge Cluster Electric Mobility South-West aims to establish electric mobility in Germany and to make Baden-Württemberg a globally leading region for electric mobility solutions. The state-wide network utilizes the unique options in the region of Karlsruhe, Mannheim, Stuttgart, and Ulm to bring together renowned large, medium-sized, and small enterprises in the areas of vehicle technology, energy technology, information and communication technology (ICT), and the cross-sectoral production technology, and to connect them with local research institutions. The State Agency for Electric Mobility and Fuel Cell Technology (e-mobil BW) is responsible the professional cluster management.

Cluster Elektromobilität Süd-West c/o e-mobil BW GmbH

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ena – european network architecture e. V.

ena - european network architecture is a trade association for architects, engineers in this field, construction service providers, manufacturers, and real estate consultants. The trade association was founded in 2008 - as a follow-up organisation to the former GbR partnership - and its goal is to establish comprehensive organisational structures to improve the international positioning of the German architecture and construction industry and to develop common quality standards to allow an exchange between the construction industry stakeholders across the various chambers and associations.

ena – european network architecture e. V.

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Forst und Holz Baden-Württemberg (Forest and Timber)

The forest and timber sector is based on the most important renewable raw material and at the same time it is one of the most powerful sectors in Germany in terms of sales and jobs. The state-wide Forst und Holz Baden-Württemberg network intends to promote the networking and cooperation between companies and between companies and research institutions to increase the industry's competitiveness.

Clustermanagement Forst und Holz Baden-Württemberg	
Scharnhäuser Park, Hellmuth-Hirth-Str. 7 73760 Ostfildern www.cluster-forstholz-bw.de	Uwe André Kohler +49 711 23996-64 +49 711 23996-60 kohler@lbholz-bw.de

Forum Luft- und Raumfahrt Baden-Württemberg e. V. (LR BW, the Baden-Württemberg aerospace forum)

With renowned global players, smart 'hidden champions', excellent research institutions, the aerospace industry is an important economic factor in Baden-Württemberg. Enterprises and research institutions from the industry use the LR BW aerospace forum as their state-wide network. LR BW is the link between science and industry and the decision-makers in politics as well as other social groups. It represents the interests of the domestic aerospace industry on all political levels. Furthermore, it drives national and international cooperation projects along the value chain. Its goal is to streamline activities, manage innovative projects, and master industry-specific challenges.

Forum Luft- und Raumfahrt e. V.	
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Intralogistik-Netzwerk in Baden-Württemberg e. V.

The members of this state-wide intralogistics network represent a total of approximately half a million jobs. The participating enterprises invest an average of 7 % of their annual sales in research and development. All levels of the intralogistics value and innovation chain are represented in the state-wide network. Its common activities particularly aim at the research and development in the area of technological and methodical innovations, the exchange of experiences in terms of technology, and industry-related education and training. As a think tank for users, it detects practical needs and trends in intralogistics and it clears the way for new solutions with its partners.

Intralogistik-Netzwerk in Baden-Württemberg e. V.	
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Research Network "Functional Nanostructures" in Baden-Württemberg (KFN)

This research network for functional nanostructures represents a cooperation platform for research in the area of nanotechnology in Baden-Württemberg, involving about 200 scientists from physics, chemistry, biology and medicine, and also from material and engineering sciences. These interdisciplinary and cross-location projects are funded by the Baden-Württemberg Stiftung and the Baden-Württemberg Ministry of Science, Research and the Arts.

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Network of the creative industry in Baden-Württemberg

With its state-wide network Netzwerk Kreativwirtschaft Baden-Württemberg, the MFG Innovationsagentur für Medien und Kreativwirtschaft (an innovation agency for the media and the creative industry), together with 17 project partners, 30 network and 100 other industrial partners, strengthens the cultural and creative industry in Baden-Württemberg. To improve the growth potential of these industries, this state-wide network was initiated with support from the Ministry of Finance and Economics Baden-Württemberg. The MFG intends to strengthen the networks between the sub-industries and between the communal and regional cluster initiatives and to position the state as one of the leading creative locations in Germany.

MFG Medien- und Filmgesellschaft Baden-Württemberg mbH

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Landesnetzwerk Mechatronik BW GmbH

It is the goal of the Landesnetzwerk Mechatronik BW to actively assist companies, Research and Development, and other institutions and to establish networks between them. Innovations, projects, and solutions are worked out and realized in common. The perspective in this regard, is the perspective of the industry. Selected and independent specialists (innovation managers) are available for this with each of them representing a specialist area, from automation to energy efficiency. It is important to cover the entire production chain by including the diverse industries. Services include patent and trademark law, benchmarking, marketing, and consulting regarding third-party funding.

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Leichtbau BW GmbH (Lightweight construction agency)

Leichtbau BW is a Baden-Württemberg state agency for the development of science and the industry. This wholly state-owned company has acted as a neutral and cross-industry point of contact for the industry, science and society. It supports the transfer of technology and knowledge in lightweight construction and helps to find new partners.

Leichtbau BW GmbH

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Logistics Network Baden-Württemberg (LogBW)

The state-wide Logistics Network Baden-Württemberg (LogBW) primarily improves the visibility of the present Baden-Württemberg competencies in the area of external logistics and intralogistics and facilitates access to them. As a platform for coordinated cooperation between science and industry, the state-wide network improves the transfer of innovations, improves and supports consulting services, strengthens the industry's innovation capabilities, and improves the public awareness for logistics.

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MANUFUTURE-BW e. V.

MANUFUTURE-BW e. V., the Baden-Württemberg production engineering network covers complementary competencies along the entire value chain that are unique in Europe. Promoting the factory of the future with high-performing adaptive production systems, integrated knowledge transfer, and the related effects on education and advanced training are the goals of this association that was established in 2009. By targeted cluster management activities, the state-wide network bundles its innovative powers even more effectively and moderates the cooperation between manufacturers, key customers, and research and development institutions. Its goal is to secure competencies to maintain the SMEs' competitiveness in the future as well.

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**MFG Innovationsagentur für Medien- und Kreativwirtschaft
(Innovation agency for the media and creative industry)**

As an innovation agency of the state, MFG has been strengthened Baden Württemberg's position as a media and creative location since 1995. It improves the state-wide innovation capabilities and competitiveness, for example by supporting regional, national, and international cooperation projects. In the centre of its focus is the promotion of successful entrepreneurship, especially SMEs, and their connection with practice-oriented research and public support programmes. The innovation agency is a division of the Medien- und Filmgesellschaft Baden-Württemberg (MFG). Other divisions are the film funding agency MFG Filmförderung and the foundation MFG Stiftung. MFG shareholders are the state of Baden-Württemberg and the Südwestrundfunk broadcasting corporation.

MFG Innovationsagentur für IT und Medien Baden-Württemberg	
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MST BW - Mikrosystemtechnik Baden-Württemberg e. V.

The trade association MST BW (Mikrosystemtechnik Baden-Württemberg e. V.) is the central point of contact for microsystems engineering in Baden-Württemberg. In the area of microsystems engineering and the related areas, MST BW represents the interests of the industry, research institutions, and universities in Baden-Württemberg. It protects the interests of its members against politics and decision-makers. Furthermore, since January 2010 the state of Baden-Württemberg has entrusted the association with the management of the MicroTEC Südwest cluster initiative that has been among the official winners of the BMBF Leading-Edge Cluster competition.

MST BW Mikrosystemtechnik Baden-Württemberg e. V.	
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Bioactive plant-based foods network

Since September 2013 the state-wide network of 17 network partners has been funded by the industry partners' own funds. Their common goal is to continue the promotion of the topic of nutrition and health. In cooperation projects, the network aims to produce and jointly market bioactive products (bakery products, pasta, dietary supplements, etc.), mainly consisting of bioactive plant compounds from amaranth. The powerverde brand was specifically developed for this purpose.

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Photonics BW e.V. – competence network for optical technologies in Baden-Württemberg

Photonics BW e. V. is a non-profit innovation network that is responsible for the promotion of optical technologies in research, development and applications, for education and training, for the development of talent, and for public relations work in Baden-Württemberg, the leading photonics location. Photonics BW was founded in July 2000 with the support of the Federal Ministry of Education and Research. Today, it has more than 60 members from science and industry, including SMEs and start-ups. Photonics BW e. V. was awarded the Cluster-Excellence Baden-Württemberg quality label in 2012 and the Cluster Management Excellence Gold label by the European Cluster Excellence Initiative (ECEI) in 2013.

Photonics BW e. V.

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Plattform Umwelttechnik e. V. (Environmental technology platform)

The state-wide environmental technology network Plattform Umwelttechnik is a pool of companies, research institutions, organizations, and universities in Baden-Württemberg that exist on a voluntary and private basis. It promotes the cooperation in the field of research, development and production in the area of environmental and energy engineering and related services.

Plattform Umwelttechnik e. V.

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smart businessIT initiative

The state-wide network smart businessIT aims to further strengthen the Baden-Württemberg IT location and especially the enterprise software segment and to encourage a high innovation dynamic with both suppliers and users in this industry. Particularly in the IT industry, the dynamic of innovations is a question of exchange and intense communication – between companies, research institutions, and employees. It is therefore a vision of the state-wide network to create an innovation hub with smart businessIT – a platform for the exchange of knowledge.

smart businessIT Initiative c/o CyberForum Service GmbH

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Solar Cluster Baden-Württemberg e. V.

Solar Cluster Baden-Württemberg is an association of currently more than 40 enterprises, research institutions, and associations in the solar energy sector. The main goals of the state-wide Solar Cluster network are to increase public awareness for the political and economic importance of solar energy, to actively contribute to the development of statutory frameworks for a further expansion of renewable energies, and to create a permanent market for solar energy.

Solar Cluster Baden-Württemberg e. V.	
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Umwelttechnik BW – Centre of environmental technology and resource efficiency

Umwelttechnik BW is a state agency for environmental technology and resource efficiency that was founded in October 2011. It connects all the relevant information, activities, and stakeholders from science, industry, and politics in Baden-Württemberg. Ten employees and its managing director Dr. Hannes Spieth work at the Böblingen location on the streamlining of the industry and on strategic project developments and they provide advice and support to companies, especially SMEs. With special industry events, national and international location marketing activities, the establishment of workgroups, and operative assistance with support programmes, Umwelttechnik BW provides support to the enterprises in the state to assist them on the way to a more environmentally friendly future.

Umwelttechnik BW – Technologie- und Innovationszentrum Umwelttechnik und Ressourceneffizienz Baden-Württemberg GmbH	
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Virtual Dimension Center Fellbach w. V.

Virtual Dimension Center (VDC) is Germany's leading competence network for virtual engineering. Suppliers of technology, service providers, users, research institutions and multipliers cooperate in VDC's state-wide network along the entire value chain of virtual engineering covering the topics of 3D simulations, 3D visualization, product lifecycle management, and virtual reality. The VDC members strive for increased innovations and higher productivity through an informational and cost advantage.

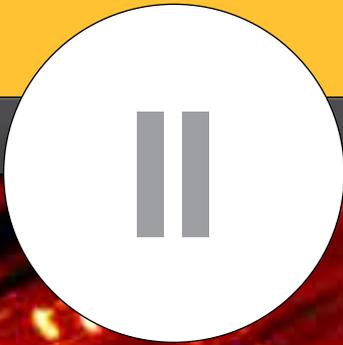
Virtual Dimension Center Fellbach w. V.	
Aublerlenstraße 13 70736 Fellbach www.vdc-fellbach.de	Dr.-Ing. Christoph Runde +49 711 585309-0 +49 711 585309-19 info@vdc-fellbach.de

Windcluster Baden-Württemberg e. V.

Windcluster Baden Württemberg with its current 57 member companies, among them renowned enterprises such as the Würth Industrie Service GmbH & Co.KG, EnBW, Badenova Wind, U. I. Lapp GmbH or LBBW, is the biggest wind cluster in southern Germany. With the huge expertise of its member companies and their more than 100,000 employees, it significantly contributes to the energy transition. The members of the wind cluster cover the entire value chain of planning and realizing onshore and offshore wind power plants, from planning offices to legal firms, insurance companies, component manufacturers, transport companies, and installation service providers.

Windcluster BW e. V.	
Postfach 750 204 70602 Stuttgart www.windcluster-bw.de	Dr. Walter Döring +49 711 4599818-6 +49 711 473884 info@windcluster-bw.de





Institutions supporting clusters and cluster initiatives

Baden-Württemberg International (bw-i)

Services and offers for internationalization of clusters:

- Embedding in the overall strategy for promoting Baden-Württemberg as an industry and science location
- Support for image building and international positioning
- Measures for entering domestic and foreign markets using market and industry information and events
- Assistance with initiation and development of international cooperation projects
- Support for recruiting new cluster members and for raising funds for investments into the clusters
- Assistance with personnel recruitment

**Baden-Württemberg International
Gesellschaft für internationale wirtschaftliche und wissenschaftliche Zusammenarbeit mbH**

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ClusterAgency Baden-Württemberg

The ClusterAgency provides services for cluster initiatives, and state-wide networks, and assists the Baden-Württemberg cluster policy. As a partner of the cluster management teams and the cluster initiatives, it supports their further professionalization. Together with the cluster initiatives and the state-wide networks in Baden-Württemberg, the ClusterAgency develops new services which are then independently implemented by the cluster and network management teams in cooperation with their members. Moreover, the ClusterAgency assists the Ministry of Finance and Economics in implementing the state's cluster-political goals. The ClusterAgency is operated by the VDI/VDE Innovation + Technik GmbH, the Steinbeis-Beratungszentrum GmbH, and the Baden-Württemberg International GmbH, with all stakeholders cooperating closely. Furthermore, a close cooperation with the various state agencies in Baden-Württemberg is also planned. The ClusterAgency team has many years of experience in cluster management, coaching, and cluster policy, on a national and international level. The ClusterAgency is supported with funds from the European Regional Development Fund (ERDF).

ClusterAgentur Baden-Württemberg

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Steinbeis-Europa-Zentrum (SEZ)

Steinbeis-Europa-Zentrum (SEZ) supports political decision-makers and cluster organizations in the development of cluster strategies, the execution of cluster-political activities and international collaboration. In connection with the Enterprise Europe Network, SEZ supports the cluster stakeholders from science and industry and supports cluster management in the development and implementation of internationalization strategies.

Services for the strategic development and internationalization of clusters are:

- Systematic support for dialogue-oriented strategy processes for the targeted bundling of cluster forces and positioning in an international context
- Networking of cluster stakeholders in the European research and innovation region through identification of and connecting with international partners, support for international technology and knowledge transfer, development and management of EC funded cluster projects, organization and execution of entrepreneur trips, international cooperation fairs and conferences
- International exchange of best practices of cluster development and international adjustment of cluster support measures

Steinbeis-Europa-Zentrum

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Steinbeis Foundation for Business Development (STW)

Steinbeis engages in the world-wide entrepreneurial transfer of knowledge and technology. The Steinbeis organization currently includes approximately 1,000 enterprises, for all fields of technology and management. The service portfolio of the specialized enterprises within the Steinbeis organization include:

- Research and development
- Consulting and expert reports, and
- Training measures

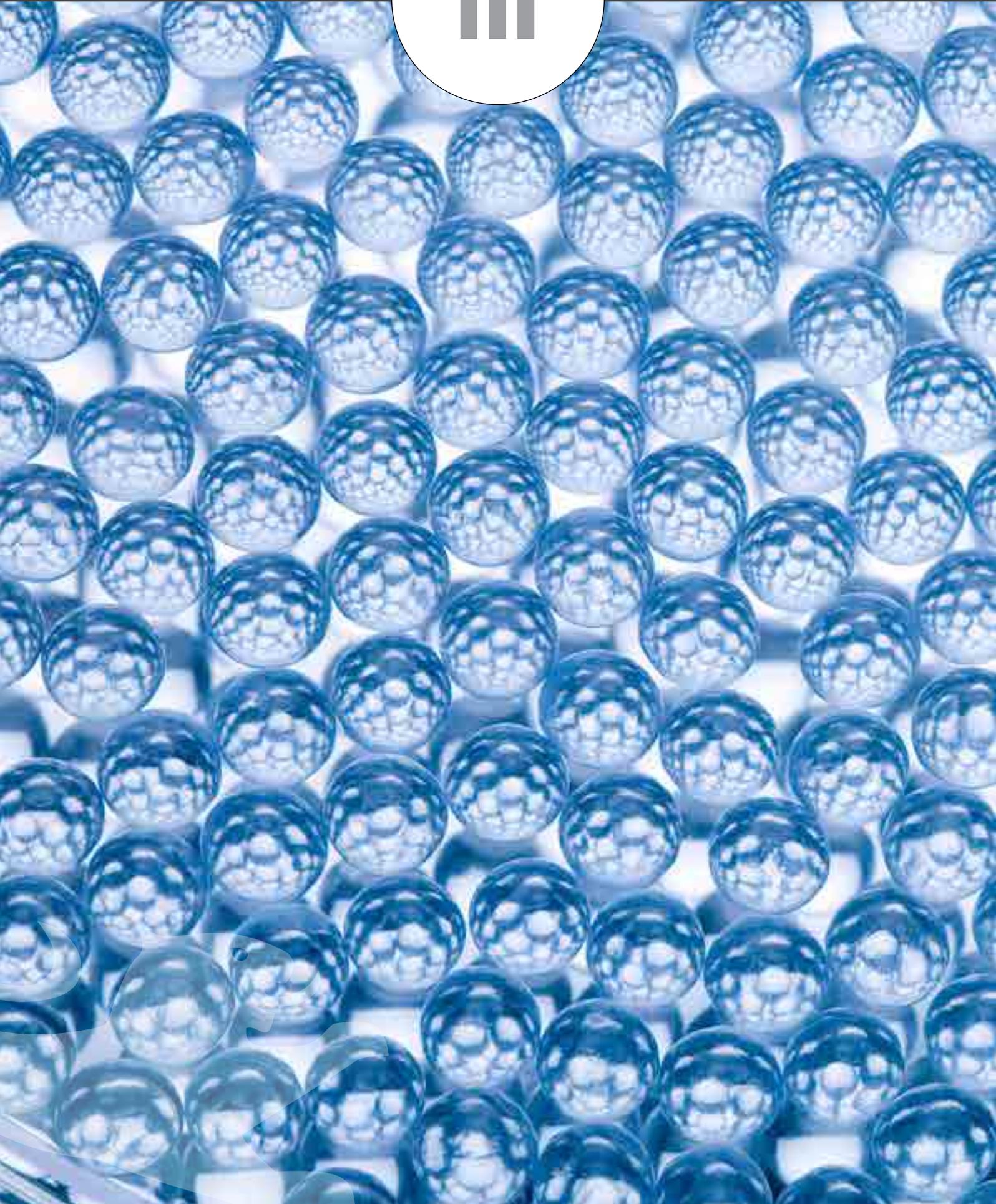
The Steinbeis enterprises are mostly located at research institutions, in particular universities, that represent the primary sources of knowledge for Steinbeis. Approximately 6,000 experts contribute to the practice-oriented transfer between science and industry. Its holding organization is the Steinbeis-Stiftung, a foundation that was founded in 1971 and that has its headquarters in Stuttgart.

Steinbeis-Stiftung für Wirtschaftsförderung

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Overviews

The following overviews intend to identify opportunities for networking and synergy potential. They can be used to assist the communication between the cluster stakeholders at state, national and EC levels.

The overview "Comparison of the regional clusters in Baden-Württemberg" summarizes the connections between the individual regions and the regional clusters. The next table „Regional Cluster Contacts“ lists the cluster contact data for the 12 planning regions of the state of Baden-Württemberg.

In this way, specific topics that individual clusters have in common and any possible networking options can easily be identified.



Comparison of the regional clusters in Baden-Württemberg

Cluster description	Stuttgart	Heilbronn-Franken	Ost-württemberg	Mittlerer Oberrhein	Rhein-Neckar	Nord-schwarz-wald	Südlicher Oberrhein	Schwarzwald-Baar-Heuberg	Hochrhein-Bodensee	Neckar-Alb	Donau-Iller	Bodensee-Ober-schwaben
Aluminium processing									❖			
Automotive	❖	❖	❖	❖	❖		❖	❖	❖	❖	❖	❖
Biotechnology	❖				❖		❖		❖		❖	
Energy			❖	❖								
Finance	❖											
Forestry and timber			❖			❖	❖		❖			
Health	❖					❖	❖	❖		❖		❖
Information technology / enterprise software	❖			❖	❖		❖		❖			
Creative	❖		❖		❖	❖	❖					
Plastics technology and plastics processing		❖				❖		❖				
Lab glass		❖										
Logistics (including intralogistics)	❖		❖								❖	
Aerospace	❖											❖
Medical engineering		❖			❖		❖	❖		❖		

Cluster description	Stuttgart	Heilbronn-Franken	Ost-württemberg	Mittlerer Oberrhein	Rhein-Neckar	Nord-schwarz-wald	Südlicher Oberrhein	Schwarzwald-Baar-Heuberg	Hochrhein-Bodensee	Neckar-Alb	Donau-Ilter	Bodensee-Ober-schwaben
Metal processing		❖										
Microsystems technology							❖					
Assembly and fastening technology		❖										
Nanotechnology				❖								
Surface technology			❖									
Organic electronics					❖							
Paper processing		❖										
Photonics			❖									
Precision engineering						❖		❖				
Production technology, mechanical and plant engineering and toolmaking	❖		❖		❖			❖				❖
Storage systems and smart grids					❖							
Textiles and clothing										❖		
Environmental technology	❖	❖			❖		❖		❖			
Valve, measurement and control technology		❖										
Fan and ventilation technology		❖										
Packaging technology	❖	❖							❖			



Regionale Cluster Kontakte

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IV



Terms and target fields of cluster policy

Terms, definitions and characteristics

This Baden-Württemberg Cluster Atlas is based on the following definitions for clusters, cluster initiatives and state-wide networks:

Cluster

Cluster means an “innovative industrial cluster” within a limited geographic region. It is the targeted collaboration of companies – that may even be competitors – and other partners from research, science and other organizations within an economic area for a higher overall benefit. This collaboration may develop in diverse ways. Therefore, during the lifetime of a cluster, research-driven topics may dominate at certain times and purely economic topics such as marketing may be the focus at others.

Including but not limited to, essential qualifying criteria for regional clusters may be:

- Topical market-related proximity (horizontal: same products, services; vertical: same value chain or stages thereof)
- Geographic or areal proximity (fast accessibility, easy coordination)
- Adequate number and density of companies (critical mass)
- Sales potential for products or services must exist at national level at least, which means a high export capability from the regional point of view

These central elements allow a corporate cluster culture that creates connections in the area. The combination of content-related and areal proximity among the various stakeholders along the value chain provides an opportunity to implement innovative processes. Criteria are therefore the areal proximity of companies and institutions of applied research, universities, universities of applied sciences or transfer institutions. These are of immediate importance for the innovative development of products and thus for

the adding of value within the cluster. Indirectly, they also provide for the necessary supply of talents.

It should not be forgotten that in the past, regional economic clusters have often evolved without the involvement of scientific institutions such as universities, research or transfer institutions. In many cases, it is the customers, product and application experiences and the resulting ideas for optimization that represent key sources of innovative product and process solutions.

Cluster initiative

Cluster initiative means the strategic and systematic alignment and documentation of innovation-oriented relationships that have their origins in the networks (marketing), the targeted closing of gaps, for example, with regard to specific competencies or in the value chain, and the structuring of activities, for example, by integrating them into organizations. Often such cluster initiatives are part of the regional structural or innovation policy, as elements of business development or technology transfer programmes, or are even established in such a context. An important criterion is that the cluster participants recognize and intend to achieve a stronger individual and overall benefit through their common goal of a systematic and organizational collaboration within the cluster, one that cannot be achieved on their own. In contrast to supra-regional and state-wide networks or loose forms of cooperation, cluster initiatives are characterized by the fact that they are regional and that they systematically activate innovative cooperation potential to generate synergies and growth.

Based on these definitions, pure competence, marketing and innovation networks or technology centres and other networks without an innovative cluster-relevance, for example, tourism organizations, have not been included. Tourism-related initiatives have been included to such an extent only when they relate to or support health services.



State-wide and cross-regional networks or platforms

State-wide networks and also innovation platforms take responsibility for the state-wide coordination and moderation of the relevant regional clusters or cluster initiatives, together with other partners such as location agencies, ex-

hibition corporations or transfer institutions, to strengthen the synergies. It is their responsibility to concentrate existing networks and regional cluster initiatives with regard to their effects on the value chain and the improvement of competencies, for better adjustment and more effective coordination and cooperation at state level.

Target fields of cluster policy

The study "Analytical and conceptual principles of cluster policy in Baden-Württemberg", conducted on behalf of the Ministry of Economics and presented in 2008, identified 18 different promising target fields of cluster policy with respect to individual industries, technologies, market fields and cross-

section technologies which were then discussed by the state government. The identification of target fields and their assignment to existing regional cluster initiatives provides the basis for further improvement of the regional clusters' profiles and also for a consequent development of cluster initiatives.

Overview: Assignment of industry sectors (subjects of regional clusters) to cluster policy target fields

Target field of cluster policy (In alphabetical order, no ranking)	Reasons for cluster development	Branches of industry (presentation in accordance with the federal statistical office's system of industry sectors (WZ 03))
Automotive	Leading car manufacturers and a strong supplier industry are characteristic for Baden-Württemberg's automotive industry. Its wide value adding spectrum is a fundamental characteristic of the automotive industry which also tries to integrate its suppliers into the production processes and at the production sites in order to achieve a lower vertical range of manufacture. Thus, suppliers from the most different of industries take over large shares of development and production.	Vehicle production, electrical engineering, metal industry, rubber / plastics industry
Biotechnology	Biotechnology is considered one of the key technologies of the 21st century. The core area of biotechnology is the red biotechnology which mainly includes biopharmaceuticals, regenerative medicine and diagnostic tests. Other areas are the green and the white biotechnology. It cannot be assigned to a single sector but is found in a great variety of applications.	Medical engineering, pharmaceuticals, chemistry

Target field of cluster policy (In alphabetical order, no ranking)	Reasons for cluster development	Branches of industry (presentation in accordance with the federal statistical office's system of industry sectors (WZ 03))
Energy	Baden-Württemberg as an energy location offers the best conditions for energy service providers and manufacturers of energy technology for both conventional and also renewable energy. Baden-Württemberg has great competencies in the utilization of renewable energies. In the area of fuel cell technology, Baden-Württemberg is one of the pioneers in Germany. For the automotive industry in particular, this is of high relevance.	Energy production, mechanical engineering, automotive, measurement and control technology
Information technology, IT applications / enterprise software	The Baden-Württemberg IT industry employs 232,000 people. With a proportion of 18 % of this industry, almost one out of 5 jobs in the IT sector in Germany is in Baden-Württemberg. Fundamental catalysts for the positive development in recent years have been the establishment of new basic technologies in the industry and the development of intercompany internet platforms (B2B, e-commerce) and public partner networks in the area of enterprise software.	IT / software
Logistics including intralogistics	Logistics is one of the basic functions of the modern economy based on the division of labour. Sophisticated logistic services are a prerequisite for the successful integration of our industry into global procurement and distribution structures. In official statistics, the logistics industry is not reported as an individual industry. Repeatedly, special analyses have shown, however, that the extended logistics industry with just under 400,000 employees is one of the largest industries in this state.	Logistics including transport and telecommunication, logistics-related industries, logistics-related services, mechanical engineering
Aerospace	Represented are leading aerospace companies in Baden-Württemberg. In recent years, the aerospace industry has been characterized by a strong growth in jobs. Strong networks between research institutions and the relevant enterprises play a crucial role in utilizing this growth potential.	Vehicle production and other manufacturing industries such as mechanical engineering, metal, plastics and electrical engineering, etc.

Target field of cluster policy (In alphabetical order, no ranking)	Reasons for cluster development	Branches of industry (presentation in accordance with the federal statistical office's system of industry sectors (WZ 03))
Mechatronics	Mechatronic systems combine mechanical, electrical and data processing components. The main focus is on supplementing and upgrading mechanical systems by adding sensors and microchips to realize semi-intelligent products and systems.	Mechanical engineering, electrical engineering, IT / software, automotive
Media, culture and creative industries	These industries represent the operative sector of the culture and creative industry, engaged in the creation, production, distribution or media-based distribution of cultural / creative goods and services. Baden-Württemberg hosts about 16 % of the jobs in this sector in Germany (in about 29,000 enterprises).	Book market, art market, film industry, radio industry, performing arts, design industry, architecture, press, advertising, software and games industry
Medical engineering	Due to its strength in employment and sales and its high export rate, medical engineering is an important model and growth industry with excellent international competitiveness and good future prospects. Collaboration of medical engineering and health industry provides many opportunities for innovations and accelerates the time-to-market for new medical devices. The linking of these two industries is an important prerequisite for pioneering applications.	Medical engineering, health and social services
Microsystem technology including nanotechnology	The microsystem technology downsizes and at the same time increases the efficiency of components, and it is used in more and more products in a wide variety of industries. To a great extent, microsystem technology is represented by highly specialized R&D institutions and companies in different user industries. The importance of this industry reflects the importance of this technology.	Automotive production, mechanical engineering, measurement and control technology

Target field of cluster policy (In alphabetical order, no ranking)	Reasons for cluster development	Branches of industry (presentation in accordance with the federal statistical office's system of industry sectors (WZ 03))
New materials / surfaces	The development of new materials and surface features is equally important for many industries in Baden-Württemberg. For the various industries, the development of new materials and surface features is an important part of their innovation management in order to maintain or improve their competitive position. Therefore, the development and application of new materials is one of the strategically important fields of technology in the economy.	Information and communication technology, automotive production, mechanical engineering, medical engineering, metal industry, plastics, jewellery, textiles
Pharmaceutical industry	Compared to Germany as a whole, the pharmaceutical industry is strongly represented here. One out of four jobs in the German pharmaceutical industry and one out of three of the 30 most job-intensive German pharmaceutical locations can be found in Baden-Württemberg. On the contrary, the chemical industry, in a narrower sense, is concentrated at only a few locations.	Chemical, sub-sector pharmaceuticals
Photonics	On the one hand, optical technologies form an independent well-established high-tech industry and on the other, they are more and more often considered to be enabling technologies. Baden-Württemberg takes a leading position here within Germany. The range of optical technologies includes, for example, lighting technology, information and communication technology, measurement and control technology, medical engineering, biophotonics and production engineering. In particular, the synergies resulting from the cross-linking of these industries enhance the future prospects of the value chain. Due to its general importance it greatly influences many other production areas.	Optical industry, measurement and control technology, electrical engineering
Production technology including mechanical engineering	With respect to employment in total, production technology is the largest sector of the manufacturing industry and a major pillar of the Baden-Württemberg economy. It is the leading mechanical engineering location in Germany. The high demands on production engineering result from increasing specialization and emphasis on system solutions. Innovative projects are generated through cross-industry cooperation projects, thus achieving competitive advantages.	Mechanical engineering (and metal industry, electrical engineering)



Target field of cluster policy (In alphabetical order, no ranking)	Reasons for cluster development	Branches of industry (presentation in accordance with the federal statistical office's system of industry sectors (WZ 03))
Satellite navigation	The main users and consumers of classic satellite navigation in Baden-Württemberg are the aerospace industry and increasingly the automotive industry. Of special importance, however, are enterprises which apply satellite navigation technology. The Galileo satellite navigation system will be another catalyst.	Aerospace industry, automotive industry, IT / software
Security technology	Security technology represents a very heterogeneous technology that is firmly anchored in Baden-Württemberg. It is interdisciplinary and cross-industry. Security technology covers the areas of sensor technology, identification and access control technology, for example, biometric processes, structural protection for buildings, microsystem technology, IT security, telecommunication and more.	Electrical engineering, optics, IT / software, telecommunication, production engineering, etc.
Telecommunication	In some regions, one can see a stronger concentration of the telecommunications industry and therefore its greater economic importance. These regional centres include the Stuttgart, Mannheim, Karlsruhe and Ulm areas.	Telecommunication engineering, electrical engineering, IT / software
Knowledge industry including business-related services	Providers of such services are, for example, engineering companies, consultancies, marketing, research and development service providers. They represent important elements of the industrial value chain, they are closely linked to the industry and are of general importance for various stakeholders.	Business related services



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Baden-Württemberg

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