

Towards a Megaregion of Western Scandinavia

West Sweden – Cases of Best Practice



March 2017

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Foreword

This report brings together some examples of development work in West Sweden. It has been taken forward in the process of the OECD Territorial Review for Megaregion Western Scandinavia, also including the Oslo region and Skåne/Öresund. The “cases” have been selected to give best practice inside the general focus of the study – governance and connectivity – complemented with examples representing the special focus in the West Sweden part on attractiveness, productivity and connectivity. Most of the examples have been chosen by the OECD delegation as a result of the discussions during their first study mission to West Sweden in January 2017. From the regional perspective we are well aware that the examples given here represent only a fraction of development work done in West Sweden. The center of attraction is regional development and the subjects listed above. The cases are presented in three headings: A. Governance initiatives, B. Governance and transition – collaborative initiatives, C. Attractiveness, innovation and transition – collaborative initiatives.

To get a more coherent picture of the situation and policies in West Sweden we recommend the report *West Sweden – Facts and Key Policy Challenges* delivered to the OECD in January 2017 (XXX). The report presents main socio-economic trends, unused potentials, challenges and governance framework for West Sweden. The OECD study continues with a second study mission in spring 2017. The final OECD report will be presented to the OECD Regional Development Policy Committee (RDPC). Upon approval by RDPC in December 2017, the report will be published and released as an official OECD publication.

The cases in this report have been written by local and regional experts in different areas. A contact person is given at the end of each description. The contact person is in most cases a representative for regional authorities.

Gothenburg, 20th of April 2017

Tomas Ekberg
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A. Governance initiatives

A Region for the Municipalities – The Governance Model in Västra Götaland

In Västra Götaland a model for co-operation between municipalities and the region has been established that means that all strategic questions on regional development are discussed in a common forum with direct and formal links to regional decision making. When it comes to strategic documents like the common Vision of Västra Götaland and the mandatory Regional Development Program (RUP/VG2020) not only the development was made in close co-operation between municipalities and the Region (and the wider partnership). Both document states models for monitoring and evaluation and formally distribute responsibility for this to the common Committee for Sustainable Development.

The Committee was set up when Region Västra Götaland was founded in 1999 as a way to manifest and make sure that the principle of “A region for the municipalities” should not only be a phrase. The Committee consists of politicians from the region and from the four associations of municipalities in the region (representing the 49 municipalities). It is directly linked to decision making in the Regional Executive Board. Designated areas are transport and infrastructural planning, culture, climate and environment, industry, R&D, labor market and competence development.

The result is a regional development work that in general is well coordinated. This way of working has been especially successful in areas where regional systems could be developed, like for example in innovation, climate and infrastructure and transport. The Science Parks and Incubators in Västra Götaland show very good results in both a national and international perspective. The climate strategy has been able to build on resources from different actors in the region as a whole. The infrastructure planning and public transport system have a clear vision of developing a “common region” for all its inhabitants and a strategy to do so.



In day to day work the regional strategy VG2020 is implemented as a whole in the region while the different parts of the region have chosen to focus on certain aspects of the same strategy. A part of the Regions financial resources for development are decentralized from the Region to the municipalities. This way of working with the same basis and in close co-operation means that local and regional effort reinforces each other.

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The Municipal Committee Halland with cases on Broadband and Tourism

The municipal committee in Halland

The municipal committee (Kommunberedningen Halland) is a body for co-operation between the regional and local level in Halland. Members are politicians from Region Halland and the six municipalities in the region. The committee is part of the regional political organization, linked to the regional executive board. It's in that sense comparable to the *Committee of Sustainable Development* in Västra Götaland. The municipal committee in Halland has been active since 2011 and is supported by several strategic groups covering various areas of regional and local co-operation, eg. public transport, infrastructure, spatial planning, business development, culture, school and integration. In these groups civil servants represents the region and the municipalities. Below follows two examples of collaborative initiatives in Halland, a broadband strategy and the tourism project *Destination Halland 2020*.

Broadband Halland

Access to broadband is a high priority question in the regional development program in Halland. After discussions in the municipal committee and in different forums for co-operation between the public sector and the industry in 2015, there was a general consensus that broadband coverage in rural areas was not good enough. A regional broadband strategy was produced in co-operation with a broad range of stakeholders. Its main task is to stimulate broadband expansion. The strategy endorses the national goal that 90 percent of all households and businesses in Sweden should have access to broadband of 100 Mbit in 2020. In order to secure a good implementation of the strategy Region Halland signed a contract with a private company in 2016. The contract stipulates that all properties (households, homes, businesses) in rural areas will be offered access to high speed broadband. Connection price is fixed to 2 000 Euro, regardless of location. The private partner's ambition is to invest 150 000 Euro; Region Halland will invest about 10 million Euro.



Destination Halland

By the end of 2015, after a year of discussion in the municipality committee, a cooperation agreement between the municipalities and Region Halland was reached. This paved the road for a more ambitious regional tourism policy than before. A project, *Destination Halland 2020*, was launched shortly after. The project's aim is to develop the tourism industry in the county and it works within three areas: Knowledge, Business Development and Communications. Key is seen to be the development of new methods to find out visitor's needs and habits, develop new and improved attractions and communicate in new ways to international markets. The project is financed by the EU structural funds, Region Halland and the municipalities.



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National Model of Culture Cooperation with Regions

The Swedish Government distributes approximately 1, 2 billion SEK annually since 2011 from national to regional level for cultural policy purposes. On average a fifth of that money goes to Region Västra Götaland with one sixth of the population. A prerequisite for achieving the state subsidy in the program is to produce a culture three to four year plan, involving stakeholders (local level, cultural players and civil society) in the process. The state funding can be dedicated to co-funded activities inside pre-defined sectors:

- Professional Performing arts
- Museums
- Libraries and promoting literature
- Culture promoting activities
- Archives
- Film-related activities, apart from the screening
- Crafts



The aim of the funding and the model is to achieve national culture policy objectives as well as to increase the possibilities for regional priorities and variations inside this policy (Regulation 2010:2012).

Region Västra Götaland is the largest contributor to culture of all regions in Sweden. As such the Region has strong capabilities to use this model and also support the general idea of decentralizing national

cultural policy. The model could as we see it be used in other policy areas, eg. labor market policy. But there are obvious flaws with today model that need to be addressed. The aim to achieve more national policy is met but the aim on regional priorities is not to the same extent.

A recent study (2016) by the Swedish parliament Culture Committee, indicates that the model of Culture Cooperation have been successful in vitalizing regional cultural life while the state level has taken a step back as far as funding is concerned. The conclusions are based on the fact that the regions in general have increased their financial support for culture. What we see is in practice a decentralization of *state* influence. The national objectives are better met now than before and this has been accomplished with less overall financial support. At the same time the administrative workload for regions has increased due to reporting demands.

Another important topic for the Region Västra Götaland Culture Committee negotiating with the Ministry of Culture is the political shortage. The model is applied and run by a national authority, officials meeting officials. The technicalities are dealt with but the principal political issues are not. With more influence from the regional policy level, cross sectoral work would increase. The state is thematically organized making it more difficult to apply a broader approach necessary for current societal challenges. The region would, if it were allowed, use state resources to strengthen and gather the fields of architecture, design and form. Another example is the Swedish culture schools, a part of the elementary education and as such available to all, that runs a risk of not maintaining expertise on a high enough level. With a regional coordinating responsibility this could be remedied.

The initial plan shaping the reform was to align it with the enlargement of Swedish regions – a reform that has yet to be realized. An effect is a diverse landscape. Regions in Sweden can have quite different roles and mandates. The disparity is, as we see it, a general weakness when it comes to these types of multi-level governance arrangements.

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The Svinesund Committee – Border collaboration between Norway and Sweden

Svinesundskommittén (*The Svinesund Committee*) is one of twelve Nordic border committees with its main focus on cross-border co-operation in the border region between Gothenburg and Oslo. The dynamic region is full of vibrant cross-border activity such as business developments, extensive commuting and a vast flow of goods. Since founding in 1980, Svinesundskommittén has successfully coordinated cross-border co-operation in the region. Members of the Committee consist of the regions Västra Götaland and Østfold along with Swedish and Norwegian municipalities. The co-operation within the border region develops continuously and Svinesundskommittén is the political arena that connects the regions Västra Götaland and Østfold. Organisations and people meet to exchange and develop knowledge, experience and ideas. There is however potential for a deeper co-operation.



The point of departure for the Committee are the policies of the regions of Västra Götaland and Østfold. Svinesundskommittén has actively decided not to create its own policies, rather be the organisation that co-ordinates existing policies. The Committee runs several networks and is active in networks together with universities, firms and different regional organisations. It also co-operates with other border committees and contributes to the work on border obstacles on national level and on EU level. Svinesundskommittén is also functioning as a lobbying organisation within matters such as infrastructure.



The Committee is primarily funded by its members along with the Nordic Council of Ministers and through projects within the Interreg Sverige-Norge (*Interreg Sweden-Norway*) program. Svinesundskommittén mainly works within four focus areas; blue growth, green growth within the wood industry, tourism and border obstacles. The Committee focuses on regional development within these focus areas; creating strong connections between firms, academia and other public stakeholders to create more jobs and business in the border region, and strengthening the competitiveness of the region internationally. As an active stakeholder in the

political decision-making processes, the Committee strives to create opportunities for their partners and networks. Svinesundskommittén also belongs to a working group within The Nordic Council of Ministers focusing on innovation and resilience within Nordic border regions.

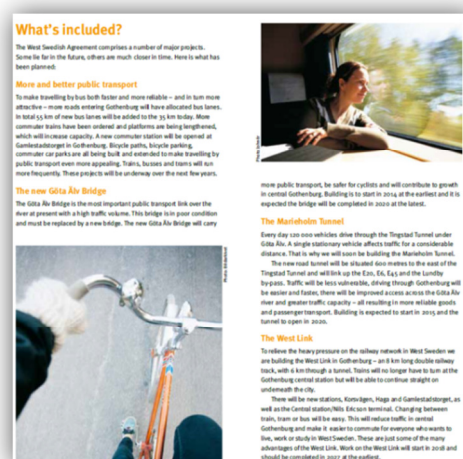
As the border between Sweden and Norway is the external border of the EU, fiscal co-operation is essential for the vitality of the region. The work on erasing border obstacles has been a focus since the Committee was founded. The emphasis is on this specific border region, but the Committee also works to reduce border barriers in general between Norway and Sweden. One of the first results of this work - that is still valid and important today – is that Swedish mothers-to-be since the 1980's have been able to give birth in Norwegian hospitals. The Norwegian hospitals are located in close proximity to the border while the Swedish hospitals are further away. This is an important outcome of Svinesundskommittén and contributes to improving the quality of life for the population in the border region.

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B. Governance and transition – collaborative initiatives

The West Swedish Agreement (Package) - Infrastructural Investment/Congestion Tax

The West Swedish Agreement can be seen as the answer to the question of how West Sweden should be able to continue to grow an agglomeration economy, becoming more competitive and resilient, with better integrated markets for labor, education, culture, leisure, trade, etc. For a long time it has been obvious that the long term capacity for transportation in the center of the region (Gothenburg) is or is threatening to become limited and outdated. A new bridge over the river Göta Älv, dividing the city, is needed as is a new tunnel under the same river. Gothenburg Central Station is overloaded and must be transformed from being an end station, to increase train capacity in West Sweden and Sweden (A solution called The West Link). There is also a need for investments in roads, in a more sustainable public transport system, in cycling lanes etc. All together these investment needs was put together in an agreement (package) between the state and the region.



The key to get the package going was the decision to introduce a congestion tax in and around Gothenburg. A solution and agreement reached 2009. With the money from the tax, the region (or its citizens) could make the contribution to the investment costs that the state wanted. Without the tax some of the objects were not even in the national plan for infrastructure. This concept of regional co-financing had earlier been tested in Stockholm. The total cost of the investments in the agreement is approx. 3.5

billion EURO. The financing is split between the state (50%), Congestion tax (41%), Gothenburg City (4%), Region Västra Götaland and Region Halland (total 4%) and realized property values (1%). Decision on the agreement was taken with clear majorities in the political bodies of Gothenburg, Region Västra Götaland and Region Halland.

The decision on the congestion tax was taken with limited, if any, public discussion. In a local advisory referendum, after the implementation, a majority was against the tax. Tax collection started in 2013 and is still there as a part of the agreement, the result of the poll neglected. The tax is between 9 and 22 SEK depending on the time of day. The corresponding tax in Stockholm is between 11-35 SEK and in Oslo 33 NOK. Travel by car has increased in Gothenburg since the tax was implemented. The increase is in line with the national average. Travel with public transport has increased faster. The decision on the West Link was taken after 20 years of planning. If it is the optimal solution is still debated in the local newspaper The package is now, step by step, being implemented and most investments will be finalized in 2026.

Film: www.youtube.com/watch?v=r7P4PO5JG8I&list=PL0C23461A63FCED5F&index=9&feature=plpp_video

Official homepage of the Agreement: <http://www.vastsvenskapaketet.se/english/>

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The SAAB closure – Short and Long Term Collaboration to Restructure a Region

A few days before Christmas in December 2011 one of the biggest bankruptcies ever in Sweden was a fact. The company SAAB Automobile vanished and 3 400 employees lost their jobs and added to an unemployment rate in the area of Trollhättan already among the highest in Sweden. Within a few days after the closure a Restructuring and Development Program was launched. The city focused on cooperation on a strategic as well as an operational level, activating a secret “Plan B” in cooperation with Region Västra Götaland, the National Government, The Public Employment Agency, the University West, Innovatum Science Park, neighboring municipalities, employer and trade union organizations etc. The results are remarkable; The Trollhättan region still has challenges to manage, but today the unemployment rate is lower than before the bankruptcy and Trollhättan keeps growing, attracting new inhabitants, university students and foreign direct investments.



One of the outcomes is that much of the highly regarded technical knowledge of the SAAB engineers and workers can still be found in the region. They are now active in local companies that have expanded, in companies that were started by the former SAAB employees and others, or in companies that are the results of growing direct investments, attracted to the area by the technical competence that was released. Several employees decided to attend studies on a vocational or university level. This was made easier by temporary governmental financing that enabled University West to offer more classes for a longer period than previously planned. The City of Trollhättan could also offer vocational training to more students.

A key success factor for the results in Trollhättan was the creative cooperation between local, regional and national partners for business development, job creation and vocational training, based on thrust in each other's roles and in each other. Another positive factor was that the preparation and planning started several years before the crash. An important part of this was the start in 2010 of the Transition Office, a project initiated and governed by the city of Trollhättan, focusing on the needs of businesses, such as business development and access to finance and establishing services in Trollhättan and six neighboring municipalities. It was enlarged into an EU-project offering development initiative in 18 municipalities in the region, starting a few months after the SAAB closure. The management continued into the EU-project, contacts were already established and methods were tested.

There was also a mutual political will and trust across political borders and levels throughout the process with a focus on monitoring goal achievements. Although many people still grieve the closure of a company and a brand that they were proud of, and the fact that the closure was a major challenge for the society, neither the local politicians nor the city officials have ever used the word “crisis”. That mind-set is a key success factor to bear in mind as well. Extra financing during the period of 2012-2014 added up to 515 MSEK (55 MEURO) and came mainly from the Swedish Government and Region Västra Götaland. Other contributor was the EU Globalization Fund, the City of Trollhättan and the Fyrbodal Organisation of Local Authorities.

The story above describes the preparation and actions taken during later years and after the closure of the SAAB Automobile has though been an almost constant story in the region since the 1990's. Trollhättan and its neighbor cities got support from the first regional EU-programs in Sweden in 1995 leading to, among other things, the start of the Science Park Innovatum and the establishment of the center for Swedish film making today – Film Väst.¹



In 2004 there was a decision to advance the investments in a motorway and double-track railway between Trollhättan and Gothenburg in the national plan. The decision was taken as a consequence of the discussion to move car production to Germany. The new infrastructure was ready in December 2012 and has meant a substantial decrease in travel time bringing Trollhättan and the neighboring city of Vänersborg in commuting time distance (30 to 45 minutes respectively) to Gothenburg. The increase in commuting from Trollhättan over the last decade has

been 60 percent, the fastest growth in West Sweden and in Sweden except for two small municipalities far north. Many of the former workers at SAAB now work at Volvo Cars or Volvo AB. The last 20 years have also seen a concentration of advanced health care and the University West to Trollhättan.

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C. Attractiveness, innovation and transition – collaborative initiatives

Science parks in Västra Götaland and the case of excellence – Lindholmen

Lindholmen Science Park is an internationally renowned collaborative environment for research, innovation and education situated in the heart of the most knowledge-intensive and growing area of Gothenburg and West Sweden. The development of Lindholmen as a dynamic knowledge environment began during the 1990s. The city of Gothenburg bought the old shipyard area where most of the industry had been shut down in the 1970's, thousands of people losing their jobs, for the symbolic prize of one Swedish crown. Thanks to joint efforts by public and private partners the area began to develop and the science park was established. The area that was worth almost nothing only 25 years ago is now the most expansive area in the city and region, and a major hub for the knowledge economy of the region. Today 22 000 people work, study or live at Lindholmen.

¹ www.innovatum.se, filmvast.com

Lindholmen Science Park runs a large number of national and regional research and innovation programs where collaborative projects between industry, public sector and academia are being developed. The transport and IT industry are major owners of the science park and with their support and trust the park has been able to act as a cluster node for activities within for example automation and vehicle ICT.



Lindholmen is one of six science parks in Västra Götaland. Together they form one of the most important features of the regional innovation system. Region Västra Götaland invests in the science parks as part of its regional strategy for growth within the objective "A leading knowledge region". Science parks in Västra Götaland differ from many traditional science parks in Europe by having a much broader scope. The parks have developed into dynamic hubs for cooperation offering a neutral arena for major research and innovation projects. They also offer support for small and medium sized enterprises and an incubation environment for start-up companies and entrepreneurs. The six science parks in Västra Götaland are connected in a regional network ensuring efficiency and synergies between them. The parks have their own focus areas which contribute to the regional smart specialization strategy as well as societal challenges addressed in for example the regional climate strategy.

The science parks operate in different local settings and with different organizational ownerships. They are all closely linked to the universities of the region. Several of them have, like Lindholmen, started at classical industrial sites and in response to industrial structural change. They continue to play that role. A late eye-catching example is the importance of Innovatum Science Park in Trollhättan during the recurring crisis of Saab Automobile and the local automotive industry.

In Gothenburg there is besides Lindholmen also Johanneberg Science Park, situated in the middle of campus at Chalmers University of Technology and focusing on urban development, energy and material science. In Gothenburg there is also Sahlgrenska Science Park, closely linked to Sahlgrenska University Hospital, with a focus on life science. Gothia Science Park is situated in Skövde and focusses on IT. Skövde is today, much as a result of the collaborative efforts at the science park, a leading Swedish location for the computer game industry. Science Park Borås builds on industrial heritage from the textile industry but also includes trade and logistics as well as sustainable communities as focus areas.

SCIENCE PARKS IN WEST SWEDEN



Innovatum in Trollhättan focusses on production technology, transport, energy and creative industries.

Together the science parks in Västra Götaland form a regional innovation system with a global impact.

The science parks in West Sweden are:

- **Lindholmen Science Park** (Göteborg) is an international Science Park specialized in intelligent vehicles and transport systems; ICT; and modern media and design. (lindholmen.se/en/)
- **Gothia Science Park** (Skövde) IT-profile with focus on computer game technology. (gsp.se/en)
- **Innovatum Science Park** (Trollhättan) strategic focus on production engineering, creative industry and audio-visual technology; and energy technology and environmental engineering. (innovatum.se/)
- **Johanneberg Science Park** located (Göteborg) primarily focuses on the fields of urban development, energy, and material & nanotechnology. (johannebergsciencepark.com/en)

- **Sahlgrenska Science Park** (Göteborg) focuses on pharmaceutical, medical technology and medicine. (sahlgrenskasciencepark.com/)
- **Science Park Borås** focuses on three areas: textile; trade and logistics; and society development.

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Incubators in Västra Götaland – part of the strategy to be a leading knowledge region

Corporate renewal and entrepreneurship is essential but challenging for a region like Västra Götaland, rooted in a strong knowledge/industrial and big company tradition, lacking the same background when it comes to start ups and entrepreneurship. In all economies, small and medium sized enterprises are crucial to foster sustainable economic development. The failure rate of new businesses is high in their first years, reflecting a competitive environment, lack of experience of the entrepreneur and market failures (i.e. shortage of capital, legal difficulties, lack of information, etc.). An incubator is a facilitator who can help the entrepreneurs to overcome some of these problems by providing office space, knowledge, business networks and capital.



There are eight incubators in Västra Götaland, geographically spread and supported by the Region. Many of them have been around since the late 1990's. They have different business focus; Life science, Tech, Culture and creativity, Gaming, Service, Textile and Fashion, Space technology. These focuses are, as for the Science Parks, linked to place specific knowledge and tradition. In recent years some of the incubators in Västra Götaland (Chalmers Ventures, GU Ventures and Gothia Inkubator) have been ranked among the best incubators in Europe due to the UBI-Index.

Incubators in Västra Götaland

- Chalmers Ventures, Gothenburg, Tech
- Brewhouse, Gothenburg, Culture and Creativity
- Framtidens företag, Gothenburg, Innovative Service businesses
- GU Ventures, Gothenburg, Research from the university of Gothenburg
- Sahlgrenska Science Park, Gothenburg, Life Science
- Inkubatorn i Borås, Borås, Textile and Fashion
- Gothia Inkubator, Skövde, Gaming
- Innovatum, Trollhättan, Space Technology

In 2015 the eight incubators evaluated a total of 656 ideas, there are currently 169 projects /companies in the incubators, of which about 66 was formed in 2015. The Incubator companies, with alumni (companies that have left the incubator) included have more than 1 500 employees (of which 20 percent is women) and a total turnover of more than 1.6 billion SEK.

For Region Västra Götaland the support of the incubators is a part of the strategy to be a leading knowledge region inside the common regional development program VG2020. The work is done in close co-operation with actors like host universities, municipalities, Vinnova and with support from the



European Regional Development Fund. A successful incubator will be situated in connection and work together with other organizations such as Science Parks or universities. Region Västra Götaland supports a competence network in connection to the eight incubators. Within this network the incubators share lessons learned and do study-trips around the globe to pick up new knowledges and trends.

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AstraZeneca BioVentureHub – Collaboration that strengthens competitiveness

Following decisions to globally conglomerate the research sites at AstraZeneca to three, AstraZeneca established the AstraZeneca BioVentureHub in April 2014 as a collaborative innovation ecosystem to strengthen competitiveness in the life science industry. The BioVentureHub which is open to emerging biotech/medtech companies and academic groups is located within AstraZenecas premises. It provides a unique possibility for small companies to interact with big pharma as well as with each other.

The list of companies that is active in the Hub counts to 19 in the beginning of 2017 (see web). The companies benefit from state-of-the-art lab facilities and infrastructure, as well as connections to scientific expertise across AstraZeneca globally.

The Hub has three science partners - AstraZeneca, SP (a part of RISE – Research Institute of Sweden) and Gothia Forum (an organization for clinical research in Region Västra Götaland). It has four sponsors – Vinnova, Region Västra Götaland, Business Region Göteborg and Carl Bennet AB.

AstraZeneca BioVentureHub: www.azbioventurehub.com

Gothia Forum: www.gothiaforum.com/en/web/en

RISE: www.ri.se/en Vinnova: www.vinnova.se/en

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HSB Living Lab – World largest and most modern lab for sustainable Building

An example of ambitions and capacity in West Sweden when it comes to sustainable development is the set-up of the world largest and most modern lab for sustainable building and living. HSB Living Lab is a research and demonstration arena which also includes homes for 30-40 students, guest researchers and doctoral students. The lab is the only one of its kind in the world. While providing a home for many people for 10 years, the entire building is set up for research into the sustainable living of the future. The building is located on the Chalmers campus in Gothenburg and is up and running since June 2016.

Innovations which will help to enhance the quality of present and future homes and buildings are created on site.

The living lab is also an example of the tradition of co-operation in West Sweden. The partners are from all parts of society representing academia, science parks, building companies, energy companies, producers of kitchen and household appliances etc.





The research projects may involve anything from new materials to surveys linked to behavior in the accommodation. The result is kept on display in the exhibition area. The materials and methods tested may then result in improved quality when we build and renovate accommodation in general. The building in itself is very flexible. Most things and parts can be replaced to test solutions in real life situations. The façade is replaceable for testing façade materials. The building can be dismantled. It has a residential section offering homes and an exhibition section for offices, meeting rooms, a showroom for research results, etc.

For more information and films: www.hsb.se/hsblivinglab/
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Attracting talents and knowledge – Global Talent and MoRe programs

Global Talent Gothenburg/West Sweden

Access to human capital and talent is one of the main challenges to make use of the strong potential in West Sweden, and to secure future well-being of the citizens in the region. The shortage of qualified labor is already seen as the most severe obstacle for expansion for most companies. The prediction is that this shortage will continue. There is an increasing focus on the importance of attracting international labor and several programs have been launched to increase the attractiveness of the region. One example is a joint initiative within the framework of a regional platform comprising stakeholders from the business community, academia as well as city and region named Global Talent Gothenburg/West Sweden. The initiative aims to attract and welcome highly skilled international talents and help them thrive in the region long-term. Some of the results so far have been a joint web page (www.movetogothenburg.com or www.movetowestsweden.com).

Gothenburg placed fifth in the often cited “Global Cities Talent Competitiveness Index”, ranking 46 cities worldwide based on their reputation or growing footprint in attracting, growing and retaining global talent. The report praised the hub. The index results make a clear case that the high cost of living in Copenhagen, Helsinki, and Gothenburg has been more than offset by these cities’ physical and information infrastructure and connectivity, strong international links, and consistently high performance in quality-of-life indicators. Another advantage of most Nordic cities is that the use of English as a second language is rapidly becoming the norm. (www.insead.edu/news/2017-global-talent-competitiveness-index-davos)



MoRE – Mobility for Regional Excellence

Studies carried out on the effects of temporary international mobility, where researchers returns to their home department after a limited period, show a number of positive effects. Mobility raises the quality of a person's own research through new expertise acquired from the host organization. Mobility increases the size and breadth of the researcher's network and gives insights into different traditions of research and teaching. An exchange program called Mobility for Regional Excellence (MoRE) has been set up by Region Västra Götaland to attract international researchers to excellent research environments in the

region, and to offer researchers from western Sweden the opportunity of visiting excellent research environments abroad. The program targets experienced researchers and is open to researchers of all nationalities. The total budget for the first period was four million Euros and MoRE financed 19 fellows with a fellowship period of one year.

MoRE has showed to be an excellent opportunity for researchers to deepen and broaden the skills of the participating researchers, developing professional networks and international experience. An evaluation by Ramböll showed that MoRE is seen as a complement to traditional research funders, particularly regarding seniority. The focus on one-year stays separates the program from shorter guest researcher posts and long-term funding programs. The link to regional strengths gives added value. The evaluation also showed rising awareness among researchers of other funding and reinforced networks for applications in Horizon 2020. MoRE is the only regional researcher exchange program in Sweden. In 2017 a continuation of MoRE will be launched: the MoRE2020, co-funded by Horizon 2020. For more information:

www.vgregion.se/more

[Both MoRE and Global Talent](#) is a part of the implementation of the strategy to be a leading knowledge region inside the common regional development program VG2020. The issues have their own priorities in the program.

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Automated and connected transport – a note of governance

The Swedish system for research and innovation consists of a large number of actors with different organizational responsibility and goals. In such systems it is difficult to create effective governance structures that lead to concerted action based on central planning. National and regional development strategy instead relies on the construction of legitimate fora where actors communicate and negotiate. Governance in transportation, automation included, depends on effective communication between groups of actors, and on a degree of parallel action by these actors. The result is a self-governed innovation process that support development in sectors where no actor can manage or drive change on its own. Such governance, if successful, operates at a higher system level in the innovation system, creating (sufficiently) common goals and (sufficient) agreement on roles and activities. While rapid and/or large change in technology is not manageable in a traditional ‘central planning’ sense the system developed relies on (substantial) communication between actors and a degree of consensus on the desired goals and path ways to reach these goals.

Automation and connectivity in transportation in West Sweden is a case in point. There is a general consensus that automation is desirable for society and that the technology will impact the competitiveness of vehicle industry. Actors needed for the development of automation in transport are distributed over several sectors, some currently outside traditional vehicle and transport industry. Automation may represent a disruptive technology for transportation and the regional strategy currently is to nurture activities at all levels of the Technology Readiness Scale (TRL). This include basic science, development in laboratory setting, industrialization, testing in semi-real environment, and tests with real users. These activities must occur more or less in parallel because of the speed to market in this highly competitive technology area. If successful, the result is a working and effective regional system of innovation for automation in transport.

The regional strategy in the area of vehicles and transport has been to support the development of a ‘complete’ system for automation (i.e. all levels of TRL). This is carried out through active support of public private partnership organizations and milieus or infrastructures that represent legitimate governance structure in their respective area. Coordination is achieved by communication between these public private partnerships. Several industrial actors, institutes and research actors participate in all (or most) of these public-private partnerships. A number of people participate as representatives in more than one such

partnerships, which creates ownership of the problems and solutions discussed in different fora, awareness of activities, and a possibility of coordination.

Governance in vehicle technology development is embedded in the national strategic research and innovation program for vehicle technology. In goods transport, Forum for transport innovation organize communication between authorities, vehicle manufacturers and transport businesses. CLOSER is a project broker that began at a regional level and that is now a national organization. The 'arena' function organized by Vehicle ICT Arena organize open innovation events and help SME test innovative software in IT platforms of the large OEM. The new solutions are tested at AstaZero, which also assist collaboration and future development. Drive Sweden is a national policy mechanism that delegate strategic planning to public-private interests.

Strategic Vehicle Research and Innovation: <http://www.vinnova.se/en/FFI---Strategic-Vehicle-Research-and-Innovation/>

Forum for transport innovation: <https://www.transportinnovation.se/en>

Swedish arena for transport efficiency: <http://closer.lindholmen.se/en>

Vehicle ICT Arena: <http://vehicle.lindholmen.se/en>

Automation and connectivity: <http://www.drivesweden.net/en>

Test site: <http://www.astazero.com/>

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The following appendix describes public-private-partnership infrastructure for automation in West Sweden. The list does not include industrial sites and academic labs.

AUTOMATION AND CONNECTIVITY

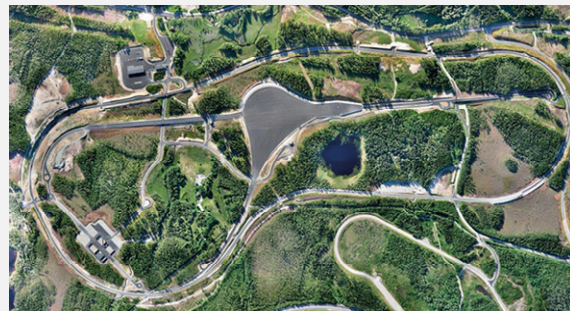
Test infrastructure



AWITAR. Automotive Wireless Test and Research Facility. Institute stress test lab for full sized vehicles. Inaguration January 2018



ReVeRe Research Vehicle Resource Lab Academic lab situated in vehicle industry context.



AstaZero The world's first full-scale test environment for future road safety

Reality Labs



Drive Me 100 autonomous vehicles driven by real users in actual traffic conditions in Gothenburg. Tests began 2017.



ElectriCity Ongoing test and demonstration of 11 cloud connected electric busses in Gothenburg operated in ordinary traffic. Test of automated functions in busses is forthcoming.



DenCity Demo of innovative electric smart city solutions for urban transport of goods



CloudCity Partnership and open innovation platform for public transport and e-health services

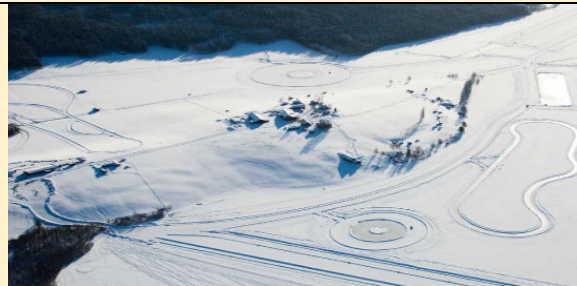
Intermediaries



Vehicle ICT Arena Open innovation organization linking SME with OEM for joint development of next generation vehicle software



Drive Sweden Coordinates Swedish research and innovation for mobility as a service and connectivity.

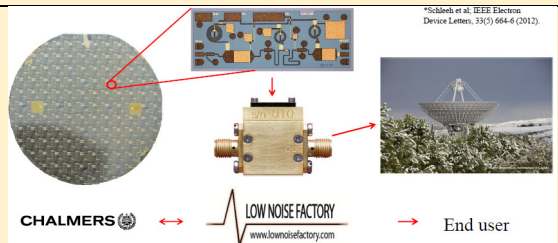


Test Site Sweden Creation of test facilities and quality assurance in demo projects in Sweden. **Test Site Sweden West** has the same task but focus on vehicle and transport industry in west Sweden.

Research



SAFER Research Centre for vehicle and traffic safety.



ChaseOn & GHz Centre Advanced sensors, antenna technology, high speed communication and next generation wireless communication technology for V2X communication.



Software Center Partnership between two universities and regional ICT and vehicle industry.