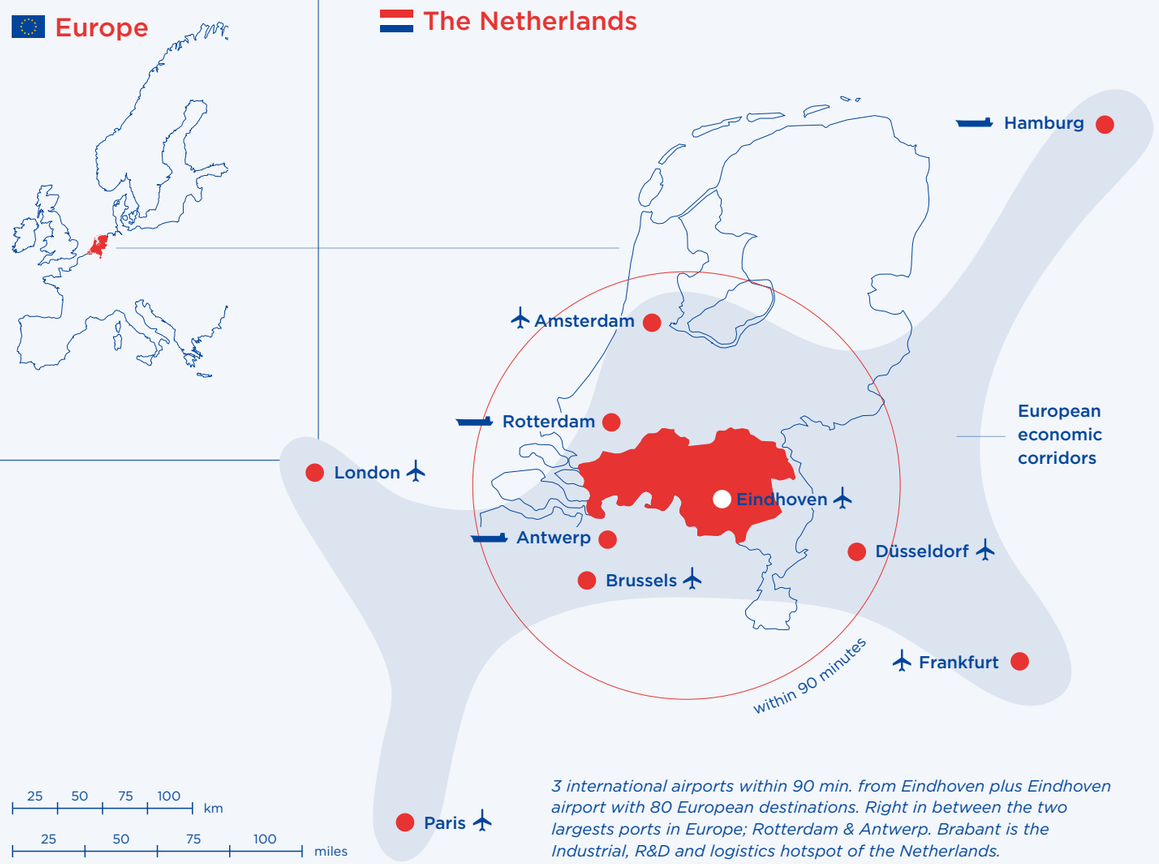
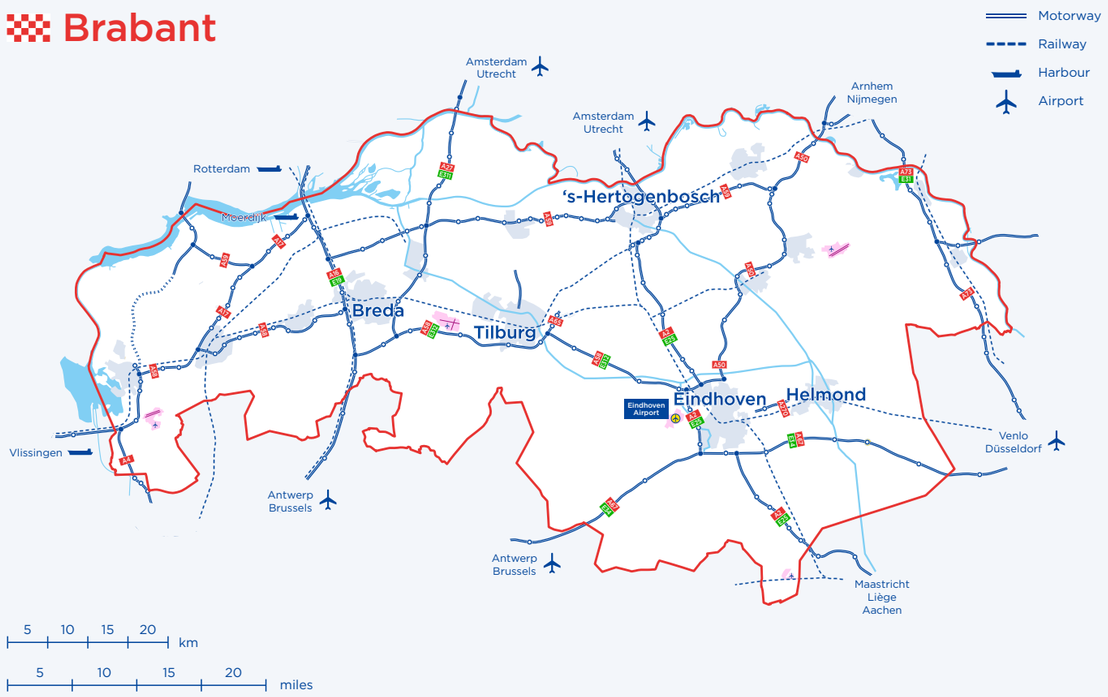

# Why the province of Brabant is your ideal robotics stepping stone into Europe!




*3 international airports within 90 min. from Eindhoven plus Eindhoven airport with 80 European destinations. Right in between the two largests ports in Europe; Rotterdam & Antwerp. Brabant is the Industrial, R&D and logistics hotspot of the Netherlands.*




**As industries embrace automation and digital transformation, The Netherlands, emerges as a beacon for robotics and high-tech innovation. This whitepaper outlines why the province of Brabant is the perfect location for international businesses operating in the robotics domain, to establish operations.**

## Use of **robotics** in the **Netherlands**

The Netherlands ranks 12th globally when it comes to robot density with 264 robots per 10,000 employees, reflecting the significant level of automation in its manufacturing industry. According to the most recent World Robotics 2024 report by the International Federation of Robotics (IFR), the top 5 EU countries with the highest robot density (per 10.000 employees) in manufacturing are:

| **Robots / 10.000 employees (EU)** | |
|---|---|
| 1. Germany | 429 |
| 2. Sweden | 347 |
| 3. Denmark | 306 |
| 4. Slovenia | 306 |
| **5. Netherlands** | **264** |

The average in the EU is 219 and the USA has 197 robots per 10.000 employees.

The high robot density in many European countries is largely driven by the strong automotive industry, which is prominent in Germany, Sweden and Slovenia. The Netherlands' high ranking is due to its robust high-tech and machine manufacturing industries, as well as its higher wages, which incentivize investments in robotics to reduce production costs and maintain a competitive edge.

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## Benefits & challenges

The use of robots offers several key benefits, including increased productivity, the ability to take on heavy or dangerous tasks, reduced error rates, cost savings in production, enhanced reliability, and the potential to create new products or services.

However, some of the major challenges in introducing robots include the high initial costs, potential compatibility issues with existing systems, a lack of operational knowledge, difficult installation processes, high maintenance and repair costs, and situations where humans may perform tasks more effectively than robots.

## **Promising** sectors for **robotics**

In the Netherlands, five key and promising sectors for robotics applications are:

1. Manufacturing;
2. Logistics/supply chain;
3. Inspection and maintenance;
4. Agri-food;
5. Healthcare.

Most robotics and automation suppliers in the Netherlands cater to the logistics, metal & machinery and food & beverage industries. Automotive, typically a leading industry for automation, ranks sixth, just behind agriculture & forestry.

The country also serves as a hub for research and innovation, with universities and tech companies working together to develop cutting-edge robotics solutions.

The Netherlands' strong industrial base in manufacturing, logistics, and agriculture has fueled the widespread adoption of robotics to boost productivity and efficiency. Companies are investing in industrial robots for tasks like assembly, material handling, and quality control.

Meanwhile, service robots are gaining traction in sectors like healthcare, retail, and transportation.

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## Ideal **stepping stone** for Europe

It is long known that the Netherlands is an ideal stepping stone into Europe for foreign companies for many reasons, like top ranks for:

- Strategic geographical location (Ports, Airports, Logistics Gateway into Europe);
- High Quality physical and digital infrastructure;
- Superior foreign Language skills;
- Open, stable & innovative economy;
- Highly educated workforce and quality of life;

## Recent **examples**

Recent examples of robotics companies that decided for the Netherlands for their European expansion are:

- Berkshire Grey (USA)
- Gecko Robotics (USA)
- Locus Robotics (USA)
- Mujin Robotics (Japan)
- Carbon Robotics (USA)
- Brain Corp (USA)

*Showroom of Yaskawa Benelux at the Brainport Industries Campus (BIC) in Eindhoven*

# Facts & figures

**54%** of all Dutch EU patents are generated in Brabant

Source: CBS

**25%** of the Netherlands' industrial value is generated in Brabant

Source: CBS

**30%** of all Dutch robotics & automation firms are based in Brabant

Source: CBS

**30%** of the country's warehouse stock is located in Brabant

Source: CBS

**Top 3** smartest regions in Europe (Brainport Eindhoven)

Source: Dealroom

**7th** World's top science hubs (Eindhoven)

Source: Dealroom

**#1** 4IR innovation cluster in Europe (Eindhoven)

Source: EPO

**#2** Eindhoven on the list of 84 cities with the highest quality of life

Source: Global Quality of Life Index by City 2024

# Did you know this **about Brabant**?

The province of Brabant plays an important role in the manufacturing industry in the Netherlands and the world. For decades, technologies that require pinpoint accuracy and high complexity have been built in the province. Brabant excels in robotics, where artificial intelligence (AI) and advanced engineering meet to produce breakthrough technologies. More specific, the Brabant high-tech systems and materials (HTSM) cluster can invent, design, engineer, assemble, manufacture, commercialize, install, and maintain any machine, integrated and/or cyber-physical system. The region also houses the full spectrum of HTSM suppliers.

## This is the region where the most complex machines in the world are being designed, engineered and produced.

ASML, based in Veldhoven next to Eindhoven is the most valuable technology company in Europe. Together with its high tech supply chain partners, like VDL Group, Prodrive Technologies, NTS Group and Philips, they keep surprising the world with their advanced machines, which are essential for manufacturing the world's most intricate semiconductor chips.

Robotics plays a crucial role in the manufacturing industry, especially in a region like Brabant. Despite covering only 12% of the Netherlands' total land area (approximately 80 by 140 kilometers), and being home to 15% of the Dutch population, Brabant contributes about 25% of the country's total industrial value (CBS). Additionally, the province hosts 30% of the Netherlands' total warehouse stock, making it a key hub for robotics and supply chain solutions.

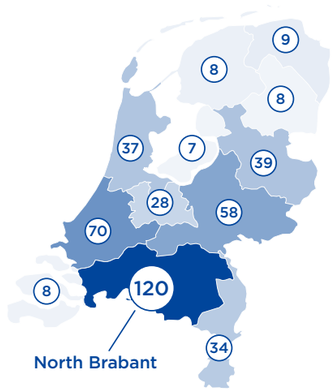
The Brabant region around the city of Eindhoven, also known as the 'Brainport' region, is one of the leading technology & Innovation hubs in the world. Eindhoven was ranked seventh by Dealroom when it comes to the most promising global science hubs and is in the Top 3 of smartest regions in Europe. The ecosystem is bolstered by the population of Brabant being highly educated and the Brainport Eindhoven region is a significant driver of technological innovations in for instance High Precision mechatronics.

Brabant is home to about 30% of all the robot and automation firms in the country. Meaning that specialist components are easy to obtain and do not always have to be shipped from the other side of the world. In many instances advanced components can be manufactured within the province making it cost effective. The robotics industry in Brabant is, besides Medical & high precision robotics, primarily focused on manufacturing and logistics, which includes the development of robots for automated assembly, sorting, and transportation. We have identified 350 robot and automation companies in the Netherlands with offices in 426 locations.

Brabant is recognized as the High-tech, R&D and logistics hotspot of the Netherlands. It is Responsible for 54% of all European patent registrations, also in Europe is has a top 10 ranking.

A study by the European Patent Office (EPO) in 2020 already showed that Eindhoven is Europe's leading innovation cluster for 4IR technologies, ahead of London, Munich, Stockholm, and Paris. (innovation origins). Robotics is a core element of the Fourth Industrial Revolution because it enables greater automation, efficiency, and intelligence in both manufacturing and service sectors.

**Robot and automation companies**




Source: HighTechNL robotics 2023

In short, Brabant is a place where collaboration is ingrained in the culture, and a strong systems engineering approach, combined with exceptionally smart people, drives the development of highly complex tools and machines. Plus, your euro goes further in labor costs than your dollar.

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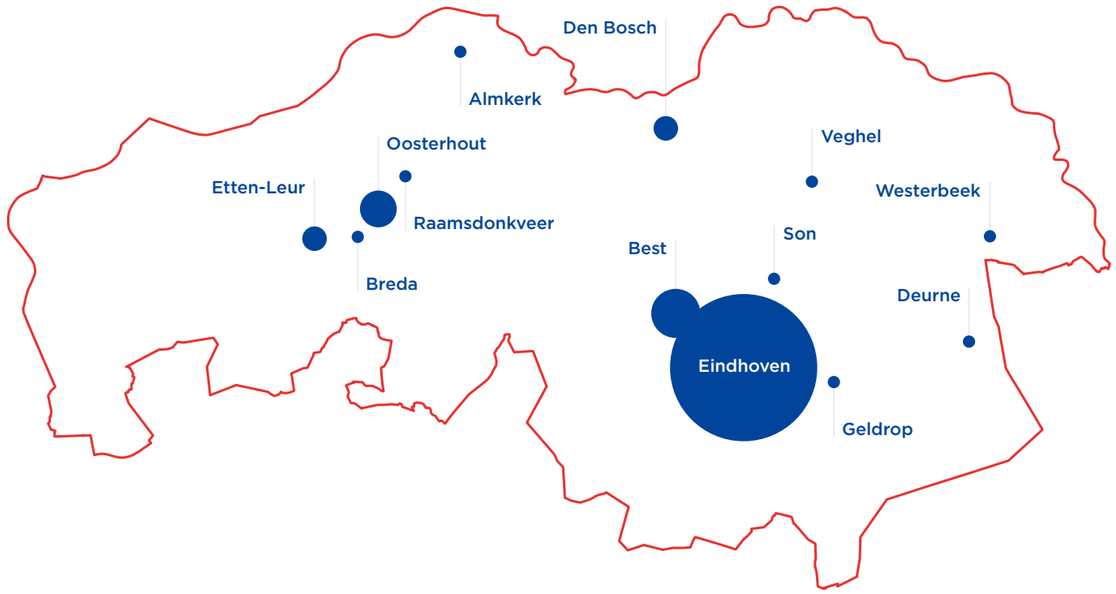
# Robotics **companies** in the **region**

Brabant




### Almkerk
- Pixelfarming Robotics

### Raamsdonkveer
- CSI Palletising - an Mpac group company (UK)

### Den Bosch
- OMRON (Japan)
- Trabotyx

### Son
- Microsure

### Etten-Leur
- ABB Robotics (Switzerland)
- StreetRobotics

### Oosterhout
- Macrostep Robotics
- RoboFlex B.V.
- World Wide Automation (WWA)

### Eindhoven
- Yaskawa (Japan)
- Invert Robotics Europe BV (Ireland)
- Preceyes - a Zeiss company (Germany)
- Avular Robotics
- Sita Robotics
- Cboost
- Kind Technologies
- SARA
- Eindhoven Medical Robotics
- Multirotorresearch B.V.

### Best
- Mujin Robotics (Japan)
- Smart Robotics
- Milrem Robotics (Estonia)
- Aigro B.V

### Westerbeek
- AVL Motion

### Veghel
- Vanderlande Industries - a Toyota company (Japan)

### Geldrop
- Manus

### Breda
- AMT Group – Trackbot

### Deurne
- Farmertronics Engineering B.V.

**Mujin Robotics - Japan** (Best)
The fastest-growing intelligent robotics company in Japan. Moreover, it was the first company in the world to develop an intelligent controller for picking robots leveraging AI. Their EHQ has a showroom and testing and assembly area.

**Vanderlande Industries a Toyota company - Japan** (Veghel)
Is a global market leader in material handling solutions for airports, parcel and postal services, and distribution centers. Their smart Item Robotics (SIR) consists of a portfolio of intelligent, self-learning and extremely flexible picking robots.

**OMRON - Japan** (Den bosch)
Produces and assembles low volume, high variance as well as Human Machine Interface (HMI) solutions, industrial PCs, fixed Robots in variable volume for the global market. Operation includes European DC, R&D, repair and advanced services, such as industrial data science.

**Yaskawa - Japan** (Eindhoven)
Focuses on industrial automation with mechatronics as a specialization. Two business units operate in Eindhoven: Robotics (industrial robots and cobots) and Drives Motion Controls (frequency controllers, motion control, servo systems, PLC, HMI).

**ABB Robotics - Switzerland** (Etten-Leur)
Serves as a key location for training and education within the Benelux region.

**Milrem Robotics - Estonia** (Best)
Specializes  in the development of robotics and autonomous systems for defense, security, and industrial applications. Known for its innovative unmanned ground vehicles (UGVs) like the THeMIS and Multiscope.

**Invert Robotics Europe BV - Ireland** (Eindhoven)
Specializes in designing and manufacturing robotic inspection crawler platforms for various industries, including food production, chemicals, pharmaceuticals, aerospace, and energy, to perform inspections of assets such as containers, tanks, and piping.

**CSI Palletising an Mpac group company - UK** (Raamsdonkveer)
Specializes in automated palletizing solutions. They design and provide advanced robotic systems that streamline the process of stacking products onto pallets.

**Preceyes a Zeiss company - Germany** (Eindhoven)
Specializes in high-precision robotic assistance for eye surgeries.

**Avular Robotics** (Eindhoven)
Specializes in modular and customizable robotic solutions including drones. Avular's expertise lies in making robotics accessible and adaptable, catering to various industries.

**Smart Robotics** (Best)
Develops and manufactures flexible, safe, and user-friendly pick & place robots with advanced Ai that can work alongside humans in a variety of applications. They automate manual picking and (de) palletizing stations in logistic operations and end-of-line processes in production environments.

*Location where Mujin landed initially. Now they have moved into a 3.000m2 space in Best.'*

# Mujin Robotics from Japan has set up up its European headquarters in Eindhoven in 2024

Choosing the region as a stepping stone for its European development. With around 300 employees worldwide – two-thirds of them employed in R&D – Noord Brabant region represented the best option, both in terms of proximity to some company customers and of an attractive ecosystem, explains Lukasz Drewnowski, Mujin Europe's CEO. "It's a very international area, dynamic and full of young talent. Eindhoven is a relatively neat size, and it looks like everybody knows each other," he underlines. Such a closeness is a positive aspect, as per Drewnowski.

"Very often, high-tech companies get stuck because they have a problem to solve and need a lot of time to deal with it. Here, the network can help you reach the right people and resolve any issues faster."

**Manus** (Geldrop)
Products, such as the Manus Meta gloves, provide accurate hand and finger tracking, enabling intuitive interactions in virtual environments and facilitating the development of humanoid robots with human-like dexterity. Customers are for instance Tesla, Meta, Apple, Google, Boston Dynamics and NVIDIA.

**Macrostep Robotics** (Oosterhout)
Specializes in autonomous mobile robots, including vending, delivery, and security robots, aimed at improving efficiency and reducing costs across various sectors.

**RoboFlex B.V.** (Oosterhout)
Specializes in industrial automation with robots and cobots for welding, spraying, handling, palletizing, pick-and-place, and assembly. They are a Yaskawa-Motoman partner.

**Sita Robotics** (Eindhoven)
Specializes in developing reconnaissance robots designed to enhance situational awareness for safety and security operators.

**Cboost** (Eindhoven)
Specializes in integrating AI and robotics into industrial applications such as quality control, digital factory solutions, and human-machine interaction. They provide custom, modular solutions to optimize production processes for clients in manufacturing, logistics, and automotive.

**AMT Group – Trackbot** (Breda)
Is a robotics solution for the railway industry. Their core technology includes autonomous robotics and AI, enabling Trackbot to perform complex tasks such as tightening and loosening bolts, installing axle counters, and positioning balises.

**StreetRobotics** (Etten-Leur)
Specializes in developing autonomous robotic solutions (Strobo) for the paving industry, aiming to modernize the trade and make it more efficient and ergonomically friendly.

**World Wide Automation (WWA)** (Oosterhout)
Specialize in automating production processes using industrial robots, focusing on material handling, assembly, and product processing. Focus industries include automotive, food processing, and metalworking.

**Kind Technologies** (Eindhoven)
Is an IP-focused AgTech Group delivering advanced automation with Robotics, Computer Vision, Data & AI. Leading brands within the group are: Crux Agribotics and Martin Stolze. Focus on fruits & vegetables.

**Pixelfarming Robotics** (Almkerk)
Specializes in advanced agricultural robots. Their flagship product, Robot One, autonomously performs tasks like chemical-free weed control using high-resolution cameras and AI for plant recognition.

**Trabotyx** (Den Bosch)
Develops autonomous weeding robots for organic farmers. Their robots use computer vision and mechatronics to identify and remove weeds close to crops.

**Aigro B.V.** (Best)
Specializes in developing autonomous robotics

# Manus Glove

Based in Eindhoven, Manus is a leading innovator in human interaction technology. They specialize in advanced data gloves that combine exceptional data accuracy with tactile feedback, empowering next-generation applications in robotics control, AI training, and virtual reality.

Their data gloves are fully compatible with platforms like Oculus, HTC Vive, Siemens Teamcenter, NVIDIA Omniverse & Gr00t, making them an ideal solution for companies developing immersive simulations and robotic systems.

Fun fact: Elon Musk shared a video of Tesla's Optimus robot folding a shirt—controlled using Manus' Quantum Metagloves.

Their technology is trusted by global leaders including **Meta, Apple, Google, Boston Dynamics**, and **NVIDIA**. At Manus, the glove is just the beginning—the true value lies in the unmatched quality of their data.

solutions in agriculture and horticulture to perform various crop care tasks, such as mowing and weeding.

**AVL Motion** (Westerbeek)
Specializes in developing autonomous harvesting robots for labor-intensive crops, with a primary focus on asparagus.

**Farmertronics Engineering B.V.** (Deurne)
Is a robotics company based in Deurne, Netherlands. They specialize in developing unmanned, clean-tech robot tractors designed for sustainable farming.

**Multirotorresearch B.V.** (Eindhoven)
Operating under the brand name MMR Drones, specializes in fully automated drone services. They have applications such as volume measurements, ground work, distance measurements, building inspections, AI waste detection, and festival planning.

**Microsure** (Son)
A medical device company specializing in developing robotic systems to enhance microsurgical procedures.

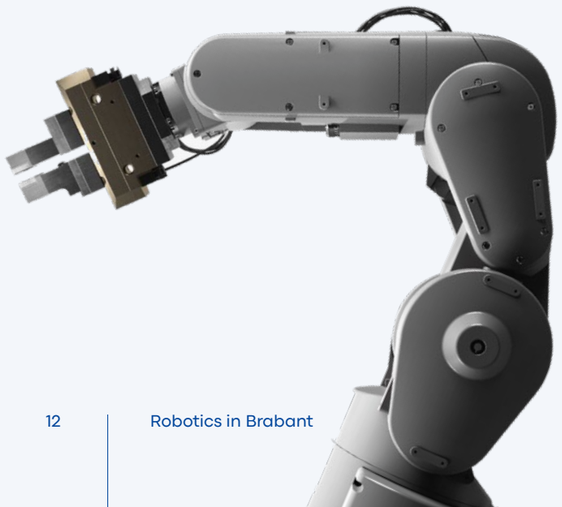
**SARA** (Eindhoven)
Is a start-up that has created a care robot that is currently working in care homes and providing support for healthcare staff.

**Eindhoven Medical Robotics** (Eindhoven)
Is focused on developing high-precision surgical robots.

## Apple’s Daisy Robot in Breda, Brabant The Netherlands

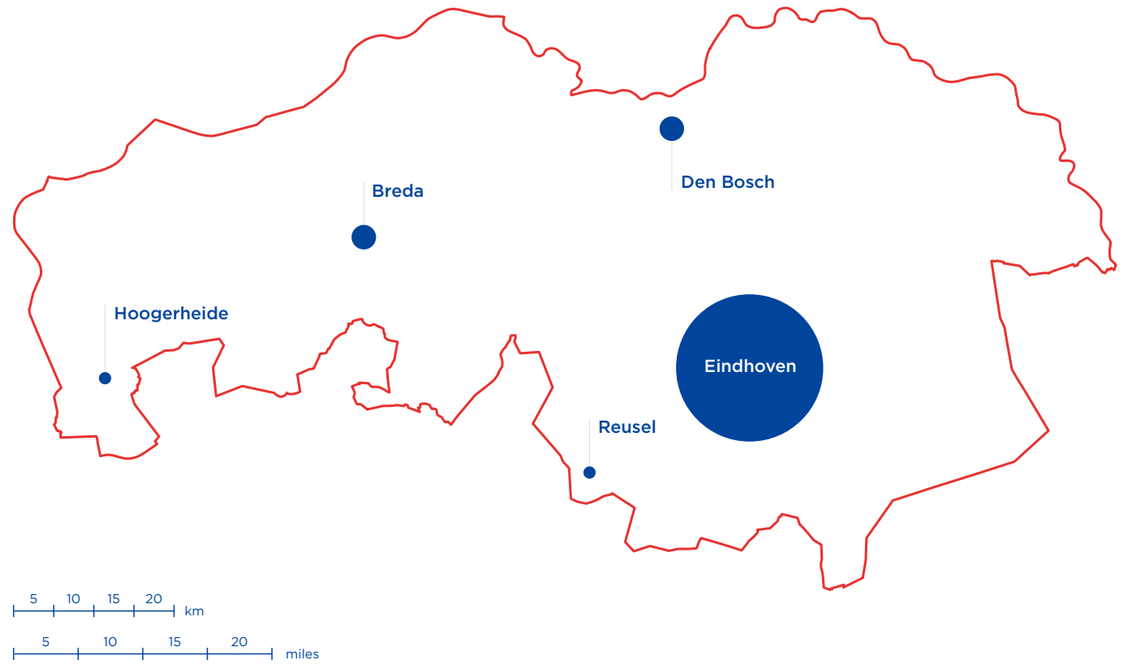
The tech giant has two Daisy robot facilities in operation, one in Austin Texas and another one in Breda, where broken devices from across Europe are sent to and are meticulously torn apart for their materials. The robot can identify 23 different models of iPhone and process one every 18 seconds. At full capacity, Daisy can disassemble up to 1.2 million iPhone devices a year.

As part of Apple’s broader sustainability initiatives. Breda is strategically chosen for several reasons: Central European Location, Close to Apple’s European Logistics and Existing Infrastructure and knowledge. Apple does not directly own or operate the recycling facility in Breda. Instead, the operations are managed in collaboration with Sims Lifecycle Services (SLS), a global leader in e-waste recycling.



# Our **knowledge ecosystem** in robotics

Brabant




## Eindhoven

- Eindhoven University of Technology (TU/e)
- Eindhoven Artificial Intelligence Systems Institute (EAISI)
- Fontys University of Applied Sciences
- Boost (talent)
- Holst Centre
- NLRobotics
- High Tech NL Robotics
- High Tech Campus Eindhoven (HTCE)
- TNO Holst center
- TNO remanufacturing lab
- Brainport Industries Campus (BIC)
- Robotics shared workspace
- NXTGEN Hightech

## Den Bosch

- The Jheronimus Academy of Data Science (JADS)
- Avans University of Applied Sciences

## Breda

- Avans University of Applied Sciences
- Breda Robotics Field Lab

## Hoogerheide

- Dutch Drone Centre Aviolanda (DDC)

## Reusel

- The Practice Center for Precision Agriculture

**The people in Brabant have an adaptive and collaborative culture. People are used to change and are working in a highly international environment for innovative OEM's, SME's, startups, scale-ups and knowledge and educational institutes. This contributes to a unique ecosystem that creates the business of tomorrow. Here are some of these institutes, organizations and locations:**

## Eindhoven University of Technology (TU/e)

TU/e has a strong reputation in the field of robotics. TU/e distinguishes itself in industrial and medical robotics, where it combines advanced control technology, AI and mechanical design. The "Brabant DNA", where collaboration, innovation and creativity are central, is a solid foundation for this expertise. TU/e has several leading research groups and collaborations within and outside the Netherlands. Below are some of the most prominent parts of TU/e in the field of robotics:

### AI and Robotics - Eindhoven Artificial Intelligence Systems Institute (EAISI)

EAISI unites all researchers at TU/e who work on the development of AI and robotics in all different applications such as autonomous vehicles, industrial automation, and smart robots. EAISI stimulates collaborations between the different researchers, but is the one-stop-shop for companies that want to explore collaborations with TU/e on AI and robotics. We will elaborate on a number of research directions here:

***Robotics (RBT) group***

This RBT research group focuses on advanced control technology, motion planning, precision control systems and mechanical design which are crucial to add value with robots in key high impact areas. These environments are often characterized by dynamic, complex and uncertain elements. Examples of these types of environments are: healthcare, agri-food and hospitality.

***Human-Robot Interaction - Human-Technology Interaction (HTI) group***

The HTI group studies how people and robots can collaborate in a natural and intuitive way. This research plays a key role in the development of social robots, care robots and cobots in industry. End-user acceptance and how to reach them are important themes in this.

***Soft Robotics***

The robots as we know them from the industry are often made of hard materials, such as metal and hard plastics. Various researchers at TU/e are finding innovative solutions using soft robots. These robots are extremely suitable for use in close proximity to people. Some applications that are being looked at are: grippers for soft fruit, surgery and elderly care.

### Teamwork and Competitions - Tech United and University Racing Eindhoven

Various TU/e student teams participate in international competitions such as RoboCup and Formula Student, with a focus on autonomous robots (for example robots for football or care) and autonomous racing cars. These projects offer students practical experience and contribute to the innovation of robot technology.

### System engineering approach

TU/e distinguishes itself in robotics research through its systems engineering approach. By designing, testing and using the robot system in a transdisciplinary and integral/holistic way, TU/e enables the application of robots in key high impact areas. This requires the development of innovative, efficient and robust robot systems and robot technology.

The Systems Engineering approach considers the robot and its environment as a whole system and will always consider the entire system and its properties when determining the properties of certain components, such as sensors, actuators or software. This requires close collaboration between different experts in mechanics, electronics, computer science, AI and human-machine interaction in every step of the design process. This multidisciplinary approach prevents silo thinking and ensures an integrated design.

**Example:** Microsurgery with Robot Support, without an integrated approach to autonomy (decision-making), control technology (for movement) and human-robot interaction it is impossible to develop a safe system that is accepted by medical specialists. Coordination with the end user is essential here.

### Collaboration with Industry

Collaboration with industry is in the DNA of TU/e, the university was founded in 1956 partly by industry. The spirit of collaboration is still palpable, TU/e is known for the high percentage of co-publications of scientific articles together with industrial partners.

In collaborations with industry, TU/e will analyze the underlying research questions and broaden the boundaries of science together. In doing so, great value is attached to the actual realization and implementation of new technologies according to the motto: we understand things by making them and we make things by understanding them.

Due to the strong integration of disciplines and the close collaboration with the high-tech industry in the Brainport region, TU/e is exceptionally good at developing robot systems for high-tech industries.

### Collaboration within and outside Europe

TU/e is active within European research networks and programs such as Horizon Europe and other EU initiatives. As a result, they collaborate with many top universities in Europe, including: ETH Zurich (Switzerland), TU Munich (TUM, Germany), Université de Technologie de Compiègne (UTC, France) and Imperial College London (UK). In addition, TU/e is part of the EuroTech Universities Alliance, a strategic partnership of leading European universities that stimulates collaboration between its six members and their employees.

### In summary

At TU/e, the complex challenges of tomorrow's robot systems are examined in a transdisciplinary and integral/holistic way, called Systems Engineering. TU/e is also characterized by a hands-on approach, which is reflected in the strong tradition of student teams such as Tech United and University Racing Eindhoven, which are among the absolute top of their international robot competitions. These teams translate the systems engineering approach directly into innovative robot designs. In combining the Systems Engineering approach and robotics, TU/e is definitely a European leader.

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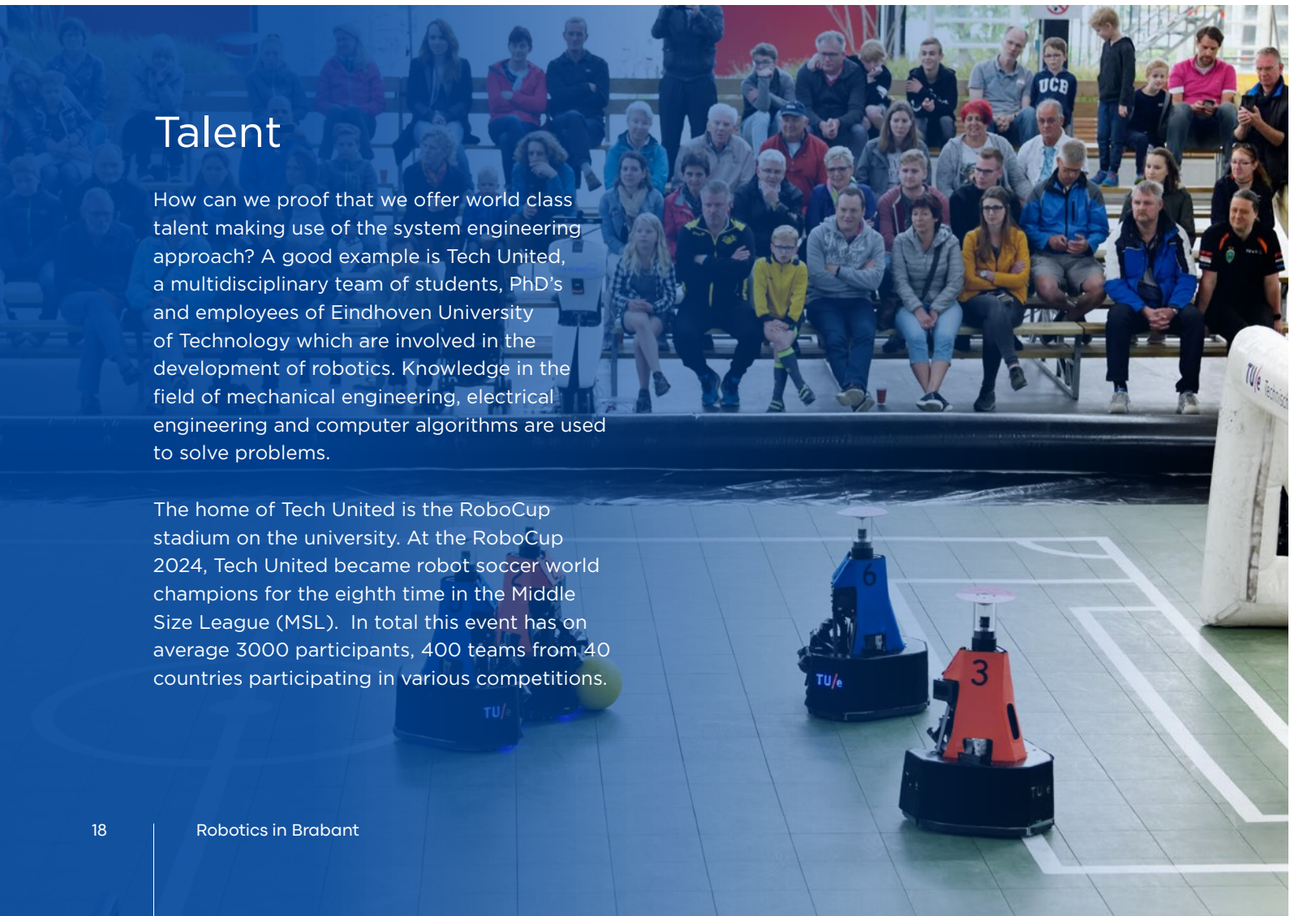



## Talent

How can we proof that we offer world class talent making use of the system engineering approach? A good example is Tech United, a multidisciplinary team of students, PhD's and employees of Eindhoven University of Technology which are involved in the development of robotics. Knowledge in the field of mechanical engineering, electrical engineering and computer algorithms are used to solve problems.

The home of Tech United is the RoboCup stadium on the university. At the RoboCup 2024, Tech United became robot soccer world champions for the eighth time in the Middle Size League (MSL). In total this event has on average 3000 participants, 400 teams from 40 countries participating in various competitions.



## The Jheronimus Academy of Data Science (JADS)

In 's-Hertogenbosch focuses primarily on data science and artificial intelligence (AI) education and research. Its emphasis on AI and data science is highly relevant to the field of robotics, particularly in areas such as machine learning, data analysis, and intelligent systems.

Through its educational programs and industry collaborations, JADS plays a significant role in advancing the integration of data science and AI into robotics and automation, thereby contributing to the development of intelligent robotic systems.

### Collaboration with industry

JADS collaborates with industry partners to apply data science solutions across multiple domains, including manufacturing and automation.

**For instance:** OMRON's Den Bosch facility, which focuses on manufacturing and automation solutions, has data scientists in its R&D team who are graduates from JADS. This collaboration contributes to the development of intelligent solutions, such as robots and smart self-learning production systems, that enhance manufacturing processes.

## Fontys University of Applied Sciences.

The Mechatronics and Robotics Lectorate focuses on applied research and educational innovation. Over the past four years, the application direction of the research has shifted further to Industry 4.0, Flexible Manufacturing and Manufacturing Logistics for SMEs in the manufacturing industry.

### Flexible Manufacturing

The subject of Flexible Manufacturing is about the flexible production of multiple products by 1 machine or robot, with as little changeover time as possible. So it's actually about making machines and robots multi-functional. Research is on new gripper technology, new applications, and communication between different machines.

### Human Robot Interaction

Is about how humans and robots can work together. Research is conducted on how to make robots exhibit intuitive behavior so that people can anticipate what the robot will do in order to make the robots safer.

### The Fontys IT InnovationLab

Is actively involved in robotics and actively collaborates with various companies in the field of robotics. These partnerships involve joint research projects, student involvement, and the development of innovative solutions.

## Avans University of Applied Sciences

Avans University of Applied Sciences is actively involved in robotics. They have a bachelor's mechatronics Program focusing on designing and building production machines and robots. Students learn about industrial robot cells, machine drives, and the application of image recognition and artificial intelligence.

They also offer a robotics Minor. In this minor, students gain knowledge and experience in developing robots and robotic systems that benefit society and industry. They work in multidisciplinary teams on practice-oriented robotics projects, often in collaboration with businesses and Avans research groups. Primary focus in robotics is in developing and implementing solutions for the manufacturing sector, sustainable agriculture and healthcare.

The Robotisation and Sensoring research group carries out applied, multidisciplinary research on using robotics to create a sustainable,

human-centered and resilient society and environment. Considering technology, people, the environment and design. Avans is a key partner of Breda Robotics.

## Boost (talent)

Is a student team support organization based in Brabant, connecting companies with highly skilled engineering students from Eindhoven University of Technology and other local institutions. It fosters innovation by facilitating collaboration between student teams and companies on for instance robotics projects. Robotics companies can benefit from access to top talent, academic resources, and opportunities for research partnerships. Additionally, by sponsoring or mentoring student teams, companies can enhance their visibility and brand presence among future engineers and innovators.

## Holst Centre

Is an independent research institute at the High Tech Campus in Eindhoven. It focuses on the development of advanced technologies for a wide range of applications, including robotics, the Internet of Things (IoT) and smart sensors. Examples of robotics projects at Holst:

**Smart Sensor Systems**
Holst Centre works on advanced sensor technologies that enable robots to better perceive and interact with their environment.

**Flexible Electronics**
Holst Centre works on flexible electronics and sensors that can be integrated into robots, for example for wearable robots or robots that require human interaction.

## Breda Robotics Field Lab

Smart Industry Field lab brings together companies, knowledge institutions and governments to accelerate the development and application of advanced robotics solutions. By becoming a member of Breda Robotics, companies benefit from a unique opportunity to be part of a thriving robotics community in a strategically located region.

Through collaborations with universities and colleges such as Avans University of Applied Sciences and Technical Universities such as Eindhoven and Delft, Breda Robotics offers access to a continuous flow of talent and innovative research projects. Breda Robotics focuses on sectors such as mechanical engineering, logistics, healthcare, production, maintenance and agri-food. Through practice-oriented R&D and pilots companies can accelerate their market introduction in Europe.

**Example:** A concrete example of collaboration is a healthcare project that Breda Robotics is working on, ZorgBOTS. This project focuses on developing innovative robotics solutions to reduce the workload in healthcare and enable more personalized care. ZorgBOTS focuses on two main areas:

**Logistics robots**
Robots that perform logistical tasks, such as moving goods within healthcare institutions. This allows healthcare workers to spend more time on direct patient care.

**Patient-oriented robots**
For example, a robot that can help with washing and caring for patients. This offers more independence for patients and helps healthcare workers in their daily work.

Breda Robotics offers companies:

- Innovation programs: Participate in joint projects and test technologies in real-life applications.
- Networking events: Build relationships with investors, customers and other technology companies.
- Lab facilities: Use advanced test facilities and workspaces.

## NXTGEN Hightech

Based in Eindhoven, focuses on advancing next-generation high-tech systems, with robotics as a key pillar alongside automation. The program supports the development of intelligent robotic systems—such as autonomous mobile robots and precision cobots—for sectors like manufacturing, agriculture, and healthcare. Companies can apply for project-based funding during specific calls, often in collaboration with other partners. These projects span both applied research and practical implementations, aiming to boost innovation and competitiveness in the Dutch high-tech industry. Typical grants range up to €1.75 million per project, with application periods and deadlines announced periodically. The initiative is centered at the High-Tech Campus Eindhoven, with activities also taking place at locations like the Brainport Industries Campus. NXTGEN Hightech is widely regarded as a subsidy program, but it also functions as a strategic innovation platform that connects industry, research, and government to accelerate high-tech development in the Netherlands.

## NLrobotics

As an independent industry and network association, NLrobotics is committed to


*Breda Robotics Field Lab*

accelerating robotics adoption in the SME sector. It connects SMEs that are ready for the next step in automation with leading integrators and robotics networks. The organization represents the interests of the robotics industry and provides a platform for inspiration, knowledge sharing, and concrete project initiation. Through inspiring events and facilitated demonstrations by members and partners, NLrobotics acts as a catalyst for the transition to advanced robotics.

## High Tech NL Robotics

Is a sector organization. Based out of the High Tech Campus in Eindhoven, they stimulate national awareness of robotization. They initiate collaboration between companies, knowledge institutions and governments by starting robotization projects in healthcare, agriculture, manufacturing industry and SMEs.

The Dutch ecosystem that they have mapped out consists of approximately 700 parties. They represent the robotics market by organizing trade fairs and projects, supporting subsidy programs and inspiring by initiating a look into each other's kitchens. They also know their way around European projects and international trade fairs. The robotics ecosystem offers members: Access to a powerful community of companies and knowledge institutions.  An overview of current developments in the Dutch robotics landscape and The opportunity to collaborate in concrete (research) projects.

## Dutch Drone Centre Aviolanda (DDC)

Is a certified test, evaluation and demonstration centre for drones, with access to the controlled airspace of Woensdrecht Air Base. Aimed at partners in both the public and private sectors, it supports the development of new drone technology and its applications. DDC also provides drone education for educators, students and business clients.

### Testing, Evaluation and Demonstrating

DDC offers comprehensive testing services for drones, at various locations, including the controlled airspace of Woensdrecht Air Base. The centre has obtained permits for automated beyond visual line of sight (BVLOS) flights, enabling extended-range operations. The centre has been instrumental in testing innovative drone applications, such as autonomous outdoor inspections of commercial aircraft.

For instance, Dutch aviation robotic inspection software developer Mainblades conducted the first European fully automated outdoor airport drone inspection at DDC, demonstrating the capabilities for advanced drone inspection and Belgian start-up ADLC validated drone delivery concepts and trained their flight crews at DDC.

### Training and Consulting

The centre provides training programs for drone operators and offers hands-on consulting services to assist organizations in integrating drone technology into their operations.

### Events and Demonstrations

DDC hosts events and demonstrations to showcase the capabilities of drones and foster collaboration among industry stakeholders. DDC collaborates with various organizations, including TU Delft, Robin Radar Systems and the Royal Netherlands Air Force, to advance drone technology and its applications.

The drone centre hosts several companies like:

***RPAS Services***
Provides various services such as testing new technology and drones, but also commercial services such as inspecting areas and objects and providing aerial photography and video. With a European permit to operate, they do this with registered drones and authorized drone pilots for clients in both the public and private sectors and for defense.

***uAvionix Europe***
Supplier of certified products for the drone and light aviation industry, developed and manufactured by US company uAvionix. Examples from the range include aviation certified Command and Control (C2) systems, transponders, Detect and Avoid systems and ground infrastructure for the integration of crewed and uncrewed aviation.

***UAV+***
Is a government-approved training institute that develops drone training courses and conducts exams (Drone Pilot A1/A3). Sister company Drones4 provides drone equipment and can build drones specific to the customers' applications.

***Orange Aerospace***
Creates prototypes, "one-off" drones and bespoke drone batch production. It is headquartered at Breda International Airport. Thanks to its excellent testing facilities, a flight unit has been opened at the Dutch Drone Centre.

## The Practice Center for Precision Agriculture

Located in Reusel, offers testing facilities and serves as an innovation hub for precision agriculture in open-field farming. The center aims to accelerate the adoption and application of precision agriculture in the Netherlands and beyond, enabling its benefits to be utilized on a larger scale. Robotics companies can collaborate with the Practice Center for Precision Agriculture by: Utilizing testing facilities, Participating in demonstrations and events to showcase innovations and Collaborate with educational institutions on research projects.

*Dutch Drone Center (DDC) in Woensdrecht*

The HTCE is the smartest square km$^2$ in Europe. This former Philips site is now the workplace for around 300 innovative companies with more than 12.500 smart people and over a 100 different nationalities.

*High Tech Campus Eindhoven (HTCE)*

## High Tech Campus Eindhoven (HTCE)

The HTCE is the smartest square km$^2$ in Europe. This former Philips site is now the workplace for around 300 innovative companies with more than 12.500 smart people and over a 100 different nationalities. 40% Of all patent applications in The Netherlands come from the Campus / Brainport region. 1 Billion euro in private R&D is being spend annually.

HTCE offers an urban test site and license under the Drone Hub HTCE for companies to test their drone use cases.

HTCE has interesting hubs like the AI Innovation Center with partners like Amazon Web Services and HP & NVIDIA, and residents like Axelera AI and Airvision, the latter offers a platform that simplifies the development of computer vision models, making AI more accessible for robotics companies.

Another one is the 3EALITY Hub. An innovation center dedicated to spatial computing and immersive technologies. It offers robotics and other companies access to a collaborative ecosystem where they can develop and showcase applications that blend the digital and physical worlds, utilizing technologies like augmented reality (AR) and virtual reality (VR).

The AI Innovation Center and the 3EALITY hub focus on the adoption of solutions and applications of emerging technologies.

## TNO (Netherlands Organization for Applied Scientific Research)

Is a Dutch independent research organization that focuses on innovation and applied science to solve societal and industrial challenges. For robotics companies, TNO offers expertise in autonomous robots, robot manipulation and grasping, robot vision and perception, human-robot interaction, bio-inspired robotics, robot learning and Ai, robotics in healthcare and industrial robotics.

They help by providing R&D, prototyping, testing, and optimization services. They have a number of fieldlabs in the province of Brabant;

**TNO Helmond**
Automotive campus for autonomous driving cars/busses and trucks.

**TNO Holst center**
High Tech Campus Eindhoven for medical devices and health care robots.

**TNO remanufacturing lab**
Is a test and experimentation facility (TEF) for the manufacturing industry, located at the

Brainport Industries Campus in Eindhoven. As a technology supplier, you can develop and test your AI technology and robotics at the TEF. As a manufacturing company and system integrator, you can experiment with the available technologies for your specific challenge and application.

## Brainport Industries Campus (BIC)

The Brainport Industries Campus (BIC) in Eindhoven, serves as a pivotal hub for robotics companies, fostering innovation and collaboration within the high-tech manufacturing sector The philosophy of BIC centers on creating a collaborative environment where businesses, educational institutions, and research organizations converge to drive technological advancements. This approach aligns with the Triple Helix model, emphasizing the synergy between industry, academia, and government to foster innovation.

The Brainport Digital Factory at BIC is a collaboration of over 20 innovative software companies, research organizations, and educational institutions focused on making industrial digitalization practical and cost-effective. It provides robotics companies with access to advanced manufacturing technologies, including AI-driven automation, digital twin simulations, and smart production facilities. The factory supports prototyping and testing in a real manufacturing environment and offers connections to a strong supply chain network. Additionally, locations such as Brainport Industries and the Experience Center Factory of the Future at BIC contribute to the region's robotics ecosystem by facilitating collaboration between high-tech companies, research institutions, educational institutions, and startups.

BIC employs approximately 2.000 people and hosts around 500 students per day, 2000 students in total. Educational institutions such as Fontys University of Applied Sciences, Avans University of Applied Sciences, and Summa College (Vocational training) are integral to the campus, collaborating with companies to develop new products and innovations.

Expansion plans for BIC include the development of Cluster 2, which is more than twice the size of the existing campus of 105.000m2. Construction is expected to commence in the first quarter of 2026. First tennant expected end of 2026. This expansion aims to further strengthen BIC's role as a central hub for the high-tech manufacturing industry in the Brainport region.

## Robotics shared workspace in Eindhoven

A former Philips site at Strijp-T is rented by Robotics company Avular and has been amazingly restored. They offer sub-lease with very flexible contract duration terms. Mujin Robotics also started out here, before they moved into a much bigger space. Some other tenants are Sara, Sita Robotics and Cboost. On the ground floor, you can set up a space for testing, assembling, and demonstrating hardware. Additionally, it features the largest indoor drone cage in Europe and offers the possibility to set up office space and rent storage space.

*Brainport Industries Campus (BIC)*

*BIC expansion location of 225.000m2*

# Compliance & Incentives

## Validation/ CE **marking process**

**Ensuring compliance can be daunting without third-party assistance of specialized experts in the field of product compliance. Due to the size of the Netherlands, its well-known international orientation, physical infrastructure through Port of Rotterdam and Airport Amsterdam Schiphol and it's renowned digital infrastructure, is easy to connect both physically and online with relevant stakeholders like regulatory consultants, independent test labs, semi-governmental bodies like the Netherlands Enterprise Agency or the Dutch normalization institute (NEN).**

Robot manufacturers wanting to place their products in the EU market, must ensure that their products comply with essential safety and health requirements of Machinery Directive (to be replaced by the Machinery Regulation), Low Voltage Directive, EMC Directive and (for robots with wireless connectivity) Radio Equipment Directive. Compliance is confirmed by affixing a CE mark.

The CE marking process for industrial robots and robot systems follows a series of structured steps to ensure that the product comply with European safety, health, and environmental requirements.

Below is an overview of these steps:

### Identify applicable directives

Determine which EU directives apply to your robot. For robots, the Machinery Directive (2006/42/EC) is often relevant. Other Directives such as the EMC, Low Voltage and Radio Equipment Directive could be applicable as well.

### Conduct a risk assessment

Identify all potential risks that may arise from the use of the robot and evaluate the associated risks. This process is known as risk assessment.

### Ensure compliance with essential safety and health requirements (ESHR's)

Determine applicable ESHR's and establish conformity through application of EU harmonised standards

### Compile technical documentation

Collect all relevant documents that demonstrate compliance with the applicable requirements. This includes mechanical drawings, electrical schematics, bill of materials, risk assessment, list of applicable ESHR's, test-, validation-, and inspection reports, safety information such as assembly instructions and user manuals.

### Perform conformity assessment

In most cases, self-certification is allowed; for high-risk products, a Notified Body must be engaged to complete the conformity assessment.

### Prepare the EU Declaration of Conformity

This document confirms that the robot complies with all relevant EU directives and standards. It must be signed by the manufacturer.

### Assign an EU Responsible Person

As of 16th of July 2021, a so-called responsible person should be assigned to perform certain tasks. The Responsible Person must be situated in the EU and it's main tasks are to verify if your EU declaration of Conformity and technical documentation have been drawn up and to keep both at the disposal to market

surveillance authorities. Non-EU manufacturers would normally appoint an EU authorized representative for this. Without having a Responsible Person assigned a product cannot be placed on the market.

### Affix the CE marking
Once all previous steps have been completed and compliance has been confirmed, the CE marking can be affixed to the robot.

## Institutions that can be relevant

### NEN (Netherlands Standardization Institute)
NEN offers standards (ISO, IEC and EN) and guidelines for the design and safety requirements of robots.

### TNO (Applied Scientific Research)
TNO offers technical expertise, research and validation services, specifically for complex technologies such as robotics and AI.

### RDW (Dutch Vehicle Authority)
Is responsible for the approval and registration of vehicles in the Netherlands, including robots that are considered vehicles and are driving on the public road.

### Netherlands Enterprise Agency (RVO)
Government Agency that helps with information on for instance EU law and CE certification on different markets and contacts. English page on government.nl

### NANDO
Website from the EU; here you can find a list of Notified Bodies.

## Service providers

For companies seeking guidance with the CE marking process for robots, several commercial service providers are available in the Netherlands. These providers can help you navigate the CE marking process and ensure that your robot complies with all necessary regulations and standards. Some examples are:

### Certification Company
Specializes in European (CE) and international product certifications. Offer testing, inspecting, certification, and regulatory services. Assessments are performed by Certified Machinery Safety Experts (CMSE®) and Certified Cybersecurity Compliance Officers (CCCO®). Acts as an official EU Responsible Person. Example Focus products are: industrial machinery (including robots, robot systems and cobots), electrical and electronic equipment and medical devices.

### Certification Experts
Provide support for CE marking of electrical and electronic equipment, including robotics. They assist in meeting European product legislation and obtaining the necessary certifications.

### Pilz Nederland
Offers support for the CE marking process for new or modified machines being imported or put into operation in the EU.

Others are: D&SC, PoI-Safety, MAAK Advocaten, VTA Nederland, Avier Ingenieurs, HMPA, ITBB Ingenieurs- en Adviesbureau, SiRATEX Consultancy.



# Incentives

### WBSO (Research and Development Promotion Act)
This is a tax incentive for companies that conduct research and develop technology, including robotics. It reduces wage costs for R&D among other things.

### MIT scheme (SME Innovation Stimulation)
This subsidy is intended for small and medium-sized enterprises (SMEs) that want to innovate in collaboration with other companies. It can be used for feasibility studies, R&D collaboration projects, and innovation consulting, also in the field of robotics.

### Innovation credit
Is a loan for innovative projects in the technology and knowledge-intensive sectors. For example, to developing new robot technologies. The scheme focuses on projects that entail risks, but at the same time have great potential to open new markets or improve existing markets. It is therefore intended for companies that are in the early stages of developing a product or technology and where the chance of success is difficult to predict.

### SLIM-subsidie
The scheme mainly focuses on knowledge and innovation development within companies, including technical innovations such as robotics, provided that the project contributes to increasing the knowledge and skills of employees.

### Horizon Europe
Is the European Union's main research and innovation programme. It aprovides financing for various technologies, including robotics, through international collaborative projects. Target group: Research institutions, companies, and partnerships in the EU.

### Eureka Eurostars
This program focuses on innovative SME companies that want to collaborate internationally in the field of technology and research, such as robotics.

### Example AgroBOTS Project

**Project Duration**
July 2020 – January 2024

**Lead Partner**
High Tech NL Robotics

**Subsidy**
€2.5 million from REACT-EU via the EFRO fund for Southern Netherlands

The agricultural sector in the Netherlands faces significant challenges due to the growing global population, increased demands for food quality and traceability, and the scarcity of arable land. At the same time, there is a shortage of labor and stricter regulations on crop protection and fertilizers.

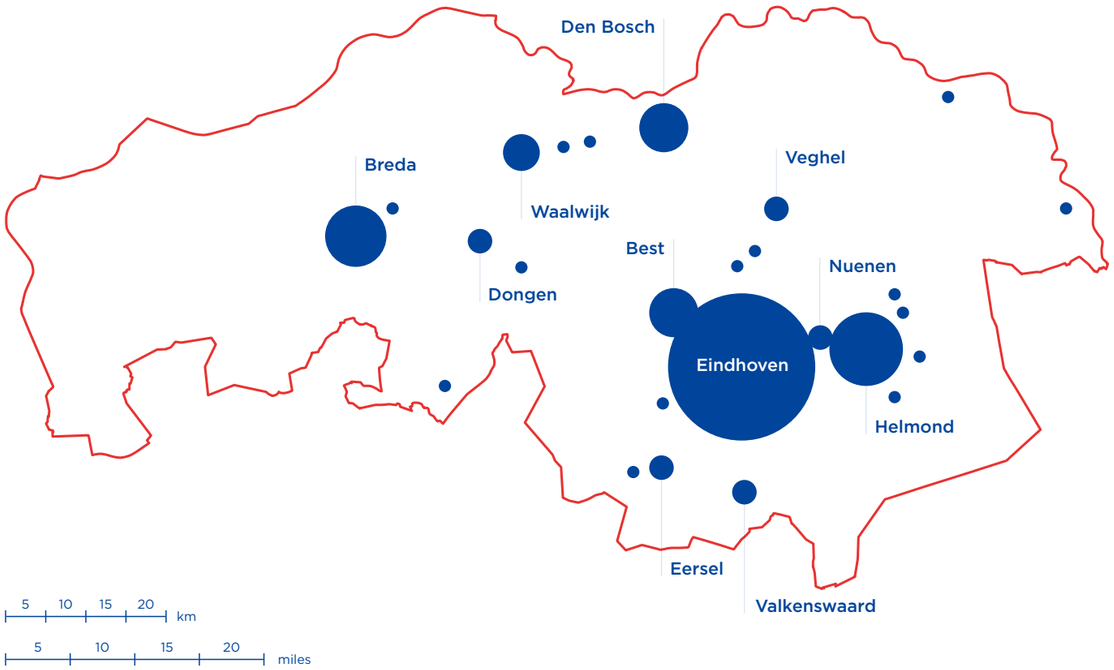
To support the sector, the AgroBOTS project focuses on robotics and smart data management to make agricultural work easier, more efficient, and sustainable. The project aims to develop nine innovative solutions for open-field crops using robotics and artificial intelligence.

**Partners**
Avular robotics, Demcon, Loop Robots, Odd.Bot, Technolution, Tective Robotics, Trabotyx, Van Eijck, Oomen, Aris, BioTrio de Nieuwe Weg, Brom Mechatronica,, CJ Huiberts & Zn, Eindhoven University of Technology (TU/e), Landgoed Velhorst, and VOF Van der Spek, Brabant Development Agency (BOM), REWIN, FME, ZLTO supported by Berenschot.


# The full high tech **value chain** is present in **Brabant**

*The auditorium at Avular Robotics shared workspace location. Below Europe's largest indoor drone cage at Avular.*

# Brabant




## Eindhoven

- VDL Enabling Technologies Group (VDL ETG)
- Newcircle Technologies
- Prodrive Technologies
- NTS Group
- KMWE
- NXP Semiconductors
- Sioux Technologies
- Bosch
- Bosch Rexroth
- Neways Electronics
- Frencken
- Additive Industries
- Shapeways
- Sorama
- Festo
- Advantech
- Nobleo Technologies
- Beckhoff
- Vision Partners B.V.
- Zimmer Group Benelux B.V.
- DVC Machinevision
- Aris B.V.
- LeydenJar Technologies
- Axelera Ai
- VBTI
- ViNotion's
- LiveDrop's
- Aircision's technology
- Airvision.ai
- RASP
- Noosware
- TMC
- ACE Development & Engineering
- Etteplan (Eindhoven/Son en Breugel)

## Helmond

- MTA
- AAE
- Motis
- Delta Electronics
- Apex Dynamics B.V.
- Amecha B.V.

## Breda

- Eltrex Motion
- VDL Steelweld
- Steffens RVS Techniek B.V.
- Pliant B.V.
- Cobot Handling Systems

## Best

- Demcon
- Philips
- Affix Engineering B.V.
- VIRO

## Den Bosch

- SCHUNK
- Isotron Systems B.V.
- Lenze B.V.
- Pepperl+Fuchs
- Vezet Group

## Dongen

- Van Uitert B.V.
- Peeters Robotic Solutions B.V.

## Other locations

- Kumatech B.V. (Bakel)
- Hellings Machinebouw & Engineering (Sint-Oedenrode)
- Hittech Comac (Deurne)
- Sentech B.V. (Nieuwkuijk)
- Murrelektronik (Oosterhout)
- InnoTractor B.V. (Tilburg)
- Simac (Veldhoven)
- Just Automate B.V (Drunen)
- i-Comfort (Baarle-Nassau)
- VDL TIM Hapert B.V. (Hapert)
- KOAT B.V. (Someren)
- Sanders Machinebouw B.V. (Liempde)
- Acotech Robotics (Linden)
- Black Box Engineering B.V. (Gemert)
- Marel Benelux B.V. (Boxmeer)

## Waalwijk

- Refitech B.V.
- Van Wees Waalwijk Machines B.V.
- Elektrolas Lastechniek B.V.

## Nuenen

- AVERobotics B.V.
- ERTEC B.V.

## Valkenswaard

- Brom Mechatronica (Valkenswaard)
- Seratech B.V.

## Veghel

- Actemium
- Abemec B.V.

## Eersel

- F3-Design B.V.

**The region is home to 4 OEM's (out of 5 in the Netherlands), 14 1st Tier suppliers and over 300 2nd and 3rd Tier suppliers. Here are a few examples of companies that provide engineering, integrating, software and parts services to robotics companies.**

**MTA** (Helmond)
Specializes in the development, industrialization, and cost-effective series production (5 tot 1000) of high-tech mechatronic systems, offering comprehensive support to robotics companies throughout the entire product lifecycle.

**AAE** (Helmond)
Acts as an integrator and supplier of advanced automation and robotics systems. They specialize in designing and building robotics solutions for industries such as semiconductors, medical, and consumer goods. They recently expanded its presence in North America with the acquisition of Solara Automation, enhancing their global capabilities in automation.

**VDL Enabling Technologies Group (VDL ETG)** (Eindhoven)
Their expertise encompasses engineering, prototyping, customer-specific process automation, and series manufacturing of highly-complex products. This includes the development and production of complex mechatronic systems, precision components, and high-level assemblies.

**Brom Mechatronica** (Valkenswaard)
Specializes in the innovation and development of mechatronic machines, modules, and test systems. Their expertise spans mechanics, dynamics, control engineering, electrical engineering, and software, enabling them to manage the entire development process from concept to series production.

**Hellings Machinebouw & Engineering** (Sint-Oedenrode)
Specializes in developing and producing internal transport, handling, and packaging solutions. While their primary focus is on the food sector, their expertise in automation and system integration can be valuable to robotics companies seeking specialized machinery or collaborative projects.

**Motis** (Helmond)
Specializes in developing, building, implementing, and retrofitting machines, offering comprehensive services to robotics companies. Their expertise includes mechanical, electrical, and software engineering, enabling them to design and construct custom machinery tailored to specific needs. They also provide maintenance services.

**Hittech Comac** (Deurne)
Specializes in assembling mechanical and mechatronic machines, modules, and equipment. requirements. They assemble the robots for H2L robotics and In partnership with Qlayers, they produce and assemble the 10Q robotic systems used for automated coating of storage tanks and wind turbines.

**Demcon** (Best)
Specializes in high-tech mechatronic systems

*Sorama equipment at a module of Avular Robotics.*


*Boston Dynamic's Spot equiped with Sorama technology.*

## Sorama: Giving robots a way to see sound – For instance the Boston Dynamics Spot

Sorama from Eindhoven build an advanced cameras that can localize sound with high precision. They do this with microphones that capture sound waves from different directions and display them visually.

This technology has various applications, from leak detection in industry to detecting noise pollution in urban environments. New York uses Sorama's cameras to combat noise pollution.

Sorama integrates its technology into various devices, including handheld scanners and robots - such as those from Boston Dynamics for inspections - but cameras can also stand alone. Additionally, the company is working with Avular Robotics from Eindhoven to integrate its sensing technology into its groundrobot.

and products, offering comprehensive services to robotics companies. Their expertise spans the entire product development process, from initial research and conceptualization to engineering, prototyping, and series production. Demcon provides solutions and services to a variety of industries, including manufacturing, healthcare, energy & climate, agri/food, and defense and security.

**SCHUNK** (Den Bosch)
Specializes in providing advanced gripping systems and automation solutions. Schunk opened a CoLab in's Hertogenbosch in 2023. In the robot application center, customers can test and validate their automation solutions.

**Newcircle Technologies** (Eindhoven)
Provides services to robotics companies focusing on automation and computer vision. They specialize in reflective 3D object detection, enabling precise robotic manipulation and product classification. Additionally, they offer pick-and-place automation systems and generate synthetic data to train AI algorithms, optimizing industrial robotics processes.

**Prodrive Technologies** (Eindhoven)
Expertise in motion control and power electronics enables them to design and manufacture high-end mechatronic systems, including custom drives, motors, and integrated mechatronic solutions. These systems are essential for precise motion and control in robotic applications.

**NTS Group** (Eindhoven)
Designs, manufactures, and assembles complex (mechatronic) systems and mechanical modules for the high-tech industry. They offer expertise in precision engineering and system integration, which helps robotics companies develop advanced robotic systems.

**KMWE** (Eindhoven)
Provides high-tech manufacturing and engineering support to robotics companies. Their services include precision production and assembly of critical components, prototype development, supply chain management, and strict quality assurance processes. They also collaborate with robotics companies to implement technological innovations like AI and machine learning, helping to streamline operations and accelerate innovation.

**NXP Semiconductors** (Eindhoven)
Develops semiconductors and microcontrollers that are crucial for robotics applications. Their products provide the computing power and connectivity needed for robot control and sensor networks, enabling robotics companies to integrate reliable and efficient hardware solutions.

**Sioux Technologies** (Eindhoven)
Offers services in multidisciplinary systems development and assembly services with specialised expertise in extreme positioning, Inspection and Analysis (electron beam, X-ray, optics), applied A.I. and advanced software and applied mathematics development. They support robotics companies with their advanced solutions for intelligent control systems and intelligent software for robots.

**Bosch** (Eindhoven)
Is active in various sectors, including industrial automation and robotics. They offer components and systems for automation, such as sensors, actuators, and control systems, which robotics companies can integrate into their products for enhanced functionality.

*Schunk opened a CoLab in's Hertogenbosch in 2023. In the robot application center, customers can test and validate their automation solutions.*



**Bosch Rexroth** (Eindhoven)
Provides automation solutions for various industries. Their expertise in precision motion and control technology helps robotics companies develop accurate and reliable robotic systems.

**Philips** (Best)
Focuses primarily on medical technology and has developed robotic systems for surgical and diagnostic applications. Their expertise in medical robotics can help other companies in the sector develop advanced medical robots.

**Neways Electronics** (Eindhoven)
Supplies electronic components and systems for various industries, including the robotics sector. They offer customized electronic solutions that are essential for the control and functionality of robots.

**Frencken** (Eindhoven)
Is a supplier of advanced technological components and systems, with expertise in mechatronics and precision engineering. They support robotics companies in the development and production of complex robotic systems by providing high-quality components and modules.

**Additive Industries** (Eindhoven)
Is relevant for robotics companies due to their advanced 3D metal printing technology, which allows for the fast and precise production of complex, custom metal parts. This technology is ideal for creating robust, lightweight, and functional components essential for robotic systems.

**Shapeways** (Eindhoven)
Is a digital manufacturing platform specializing

in 3D printing services for various industries, including robotics. They offer a wide range of materials and finishes, enabling robotics companies to quickly produce prototypes and custom parts.

**Sorama** (Eindhoven)
Specializes in sound imaging technology. They develop advanced acoustic cameras and sensors that visualize and locate sound. This technology can assist robotics companies in detecting and analyzing sounds in various environments, which is essential for applications such as sound recognition, quality control, and preventive maintenance.

**Festo** (Eindhoven)
Is a supplier of automation technology, offering products like pneumatic actuators, sensors, and motion control systems for robotics companies. They provide innovative solutions for building and optimizing robotic systems, including robotic arms and intelligent sensors.

**Delta Electronics** (Helmond)
Is relevant for robotics companies due to their expertise in energy-efficient solutions and automation technologies. They offer a wide range of products, such as motor controllers, inverters, energy management solutions, and industrial automation systems, which are crucial for the development and optimization of robotics.

**Advantech** (Eindhoven)
Is a global leader in industrial computers and embedded systems. They provide hardware and software solutions that serve as the backbone for industrial automation and robotics. Their products, such as industrial PCs, IoT devices, and networking solutions, help robotics companies build robust and scalable robotic systems with advanced connectivity and control features.

*Pixelfarming cultivates sustainable crops using agricultural robots and the power of nature.*

**Nobleo Technologies** (Eindhoven)
Is active in autonomous mobility and is working on accurate localization for the robot.

**Beckhoff** (Eindhoven)
Is highly relevant for robotics companies due to their automation technologies, which are crucial for building and controlling robotic systems. They offer a wide range of PLCs (programmable logic controllers), motion control systems, control software, and control hardware that help robotics companies develop precision movements and automated processes.

**Kumatech B.V.** (Bakel)
Specializes in designing, producing, and integrating Automated Guided Vehicles (AGVs) and other logistics automation solutions into existing business operations. Rather than building robots from scratch, they focus on optimizing internal logistics by incorporating automation technologies from various suppliers

**Apex Dynamics B.V.** (Helmond)
Specializes in the manufacturing of high-precision planetary and spiral bevel gearboxes, as well as racks and pinions. Their products are widely used in robotic applications where high torque, low backlash, and precision motion control are essential.

**Isotron Systems B.V.** (Den Bosch)
Is a supplier and integrator of industrial automation solutions, particularly in motion control, vision systems, and safety solutions that support Industrial robotic applications.

**Lenze B.V.** (Den Bosch)
Has expertise in motion control and drive technology. Their products, like servo drives, motors, and automation systems, are used in a variety of automated machines and robotics applications.

**Sentech B.V.** (Nieuwkuijk)
Specializes in the design and assembly of customized sensor solutions. In the robotics industry, they offers a range of sensor technologies that enhance automation processes. Their expertise includes integrating sensors into robotic systems for applications such as mobile mapping, inspections, and traffic systems.

**Pepperl+Fuchs** (Den Bosch)
Is a supplier of industrial sensors and automation solutions widely used in the robotics industry. Their technology, including LiDAR scanners, encoders, and vision systems, supports factory automation, AGVs/AMRs, and collaborative robots. They collaborate with major robotics companies like ABB, KUKA, Fanuc, and Universal Robots.

**Refitech B.V.** (Waalwijk)
Specializes in the engineering and serial production of composite components. In the robotics industry, they offers high-quality carbon fiber components, including panels, tubes, and connectors, which are essential for building lightweight and durable robotic structures.

**Murrelektronik** (Oosterhout)
Focuses on decentralized automation technology, providing modular solutions for controlling and monitoring machines and systems. They supply components like I/O systems, power supplies, connectors, and network technology that are essential

for automation and robotics applications in industries such as automotive, manufacturing, and logistics.

**Vision Partners B.V.** (Eindhoven)
Provides 3D vision solutions that enable robots to accurately perceive and interact with their environment. Their 3D vision systems are utilized in applications like bin picking, packaging, and machine loading, enhancing automation processes.

**Zimmer Group Benelux B.V.** (Eindhoven)
Provides advanced automation technology solutions that are integral to robotics applications. Their offerings, including handling, linear, damping, and process technologies, optimize robotic systems for precision, efficiency, and durability. They serve a wide range of industries, including automotive, logistics, manufacturing, and packaging.

**DVC Machinevision** (Eindhoven)
Offers high-performance machine vision components, such as industrial cameras, lenses, lighting, and software, essential for robotics applications. Their systems enable robots to accurately perceive, inspect, and interact with their surroundings, supporting tasks like quality control, packaging, and assembly. Industries, include manufacturing and logistics.

**Aris B.V.** (Eindhoven)
Specializes in advanced machine vision systems for the agri-food sector, focusing on applications such as grading, sorting, phenotyping, and robotic handling of natural products. Their systems are utilized in various industries, including horticulture and meat processing.



## Outsourced manufacturing/ assembly & (co) development

MTA Group specializes in the development, industrialization, and cost-effective series production (5 tot 1000) of high-tech mechatronic systems, offering comprehensive support to robotics companies throughout the entire product lifecycle.

Examples are:

- Blood drawing robot for Vitestro
- Microsure robot for surgery
- Pruning robot for horticulture

**LeydenJar Technologies** (Eindhoven)
Makes high-energy-density batteries. For example, drones equipped with LeydenJar's advanced batteries can benefit from increased flight durations and reduced downtime.

**Axelera Ai** (Eindhoven)
Provides high-performance, low-power AI acceleration for robotics, enabling real-time edge processing for tasks like object detection, SLAM, and navigation without relying on the cloud. Its cost-effective, energy-efficient chips integrate easily with AI frameworks, making advanced perception and autonomy accessible for robotics companies.

**VBTI** (Eindhoven)
Specializes in Deep Learning solutions for robotics, enhancing automation in industries like agriculture and manufacturing. Their technology has been integrated into robotic systems, such as VDL Cropteq Robotics' cucumber pruning robot, which combines AI, vision, and mechatronics. By providing advanced AI-driven automation solutions, VBTI helps robotics companies improve efficiency and adaptability in their applications.

**InnoTractor B.V.** (Tilburg)
Offers digital technology solutions that can support robotics and drone companies by providing advanced IoT platforms capable of enhancing performance, efficiency, and data management.

**ViNotion's** (Eindhoven)
Vision systems and AI solutions are applied in robotics for autonomous vehicles, enabling precise navigation and obstacle detection.

In industrial settings, their technology enhances robotic tasks like quality control, material handling, and assembly automation. Additionally, ViNotion supports agricultural and logistics robots by improving crop monitoring, harvesting, and warehouse efficiency through advanced image processing and real-time data analysis.

**AVERobotics B.V.** (Nuenen)
Specializes in designing, installing, and maintaining customized robotic automation solutions. They integrate robotic arms, vision systems, and other components to streamline processes like material handling, assembly, and packaging for clients. Serving industries such as manufacturing, automotive, food processing, and logistics.

**LiveDrop's** (Eindhoven)
Offline, secure data transfer technology can enhance drones and robots by enabling reliable, secure communication in remote or signal-blocked areas. It ensures safe data transmission without internet, improving flexibility, scalability, and security for autonomous operations.

**Aircision's technology** (Eindhoven)
Works on data transmission for robotics and drone companies by providing high-speed, secure, and reliable communication links, especially in remote or infrastructure-limited areas. This capability is crucial for applications requiring real-time data exchange, such as autonomous operations, surveillance, and remote monitoring.

**Airvision.ai** (Eindhoven)
Is a Dutch startup specializing in computer vision solutions, particularly for drone applications. They offer a no-code platform that enables organizations to develop and deploy custom computer vision models without requiring extensive technical expertise.

**RASP** (Eindhoven)
Provides advanced software and hardware solutions for industrial robotics, focusing on production planning, scheduling, and supply chain management. Their technology integrates automation, collaborative robots, and vision systems to optimize manufacturing processes.

**Noosware** (Eindhoven)
Specializes in AI cloud services and robotic application platforms that simplify the development of robotics solutions. Their platform enables developers to access robots' sensors and actuators with high-level commands, making it easier to create diverse applications. Additionally, they helps manage fleets of robots in warehouses.

**Simac** (Veldhoven)
Provides support to robotics companies by optimizing robotic systems with machine vision, mechatronics, and cybersecurity, improving efficiency and security.

**TMC** (Eindhoven)
Is a technology consultancy firm that specializes in providing high-end engineering services across various sectors, including robotics. They focus on delivering advanced technological solutions by integrating mechanics, software, dynamics, control engineering, and electronics.

**Just Automate B.V** (Drunen)
Specializes in automation solutions with robots and cobots, focusing on palletizers, machine loading, grippers, and quick-change systems. They are a distributor of various brands.

*Preceyes develops surgical robots that enable eye surgeons to perform complex treatments on the retina.*



**i-Comfort** (Baarle-Nassau)
Is a Dutch distributor and importer of audiovisual and robotics products, offering solutions like interactive touchscreens, projectors, and robotics systems for educational and industrial purposes.

**Cobot Handling Systems** (Breda)
Is an integrator specializing in collaborative robots (cobots) for various industries, focusing on automating tasks while ensuring safe human-robot collaboration. They provide solutions including robot integration, gripper technologies, and system optimization. Their expertise helps businesses integrate cobots into existing workflows for enhanced efficiency.

**VIRO** (Best)
Is an engineering company specializing in industrial automation, machine design, and product development. They act as an integrator and supplier. VIRO offers expertise in designing and integrating robotics into manufacturing environments to optimize production.

**VDL TIM Hapert B.V.** (Hapert)
Specializes in mechanical processing, including CNC turning and robotic CNC machining. They offer advanced solutions like mechanical work, assembly, and automation. A key integrator and supplier in the supply chain, known for precision and efficiency.

**Van Wees Waalwijk Machines B.V.** (Waalwijk)
Specializes in custom automation solutions, including mobile and collaborative robots, enhancing flexibility and efficiency in production processes. They serve various industries by integrating tailored robotic systems.

**KOAT B.V.** (Someren)
Acquired by Kind Technologies,  specializes in automating internal transport and product processing systems for the greenhouse horticulture sector. This acquisition led collaboration between KOAT and Crux Agribotics, a subsidiary of Kind Technologies, aimed at developing robots for fully automated harvesting, sorting, and packaging of vegetables and fruit.

**Amecha B.V.** (Helmond)
A system integrator, specializes in designing, building, and optimizing custom automation and mechatronic solutions, including robotics, for the manufacturing industry.

**Actemium** (Veghel)
Part of VINCI Energies, specializes as an integrator and supplier in industrial robotics, offering comprehensive solutions from consulting to maintenance. They serve various sectors, including manufacturing, logistics, and healthcare.

**Pliant B.V.** (Breda)
Specializes in high-tech 2D and 3D vision solutions, focusing on sectors like agro & food, industrial production, recycling, and offshore. They merged with Gearbox, combining expertise in vision software, AI algorithms, and robotics to enhance automation solutions. They operate as a system integrator and supplier, offering advanced visual inspection and sorting technologies.

**ERTEC B.V.** (Nuenen)
Specializes in automating small-series production for metal and plastic processing companies, enhancing efficiency through solutions like real-time order planning and robotics. They act as an integrator and supplier in the robotics sector.

**Abemec B.V.** (Veghel)
Established Abemec Digital to focus on robotics and autonomous systems in agriculture. Abemec serves as the official importer of FarmDroid (Denmark) in the Netherlands.

**Van Uitert B.V.** (Dongen)
Specializes in designing, producing and integrating robotic systems for filling and packaging lines with a focus on product transport and handling.

**Seratech B.V.** (Valkenswaard)
Specializes in custom machine construction, offering services in engineering, automation, and prototyping. They integrate 6-axis robots into production processes, providing comprehensive solutions from design to installation and training for various industries.

**Peeters Robotic Solutions B.V.** (Dongen)
Provides tailored industrial robotics solutions, including palletizing and pick-and-place systems, serving small and large manufacturers globally. They offer services such as consulting, programming, installation, maintenance, robot rentals, and training, working with renowned robotics brands like ABB, Fanuc, Kuka, and Universal Robots.

**Sanders Machinebouw B.V.** (Liempde)
Specializes in designing and manufacturing custom machinery with integrated robotics, across sectors like pharmaceuticals and food. As a system integrator, they collaborate with partners such as Yaskawa Benelux and EKB Industriële Automatisering.

**F3-Design B.V.** (Eersel)
Specializes in automating internal transport and packaging processes through innovative solutions like the Nipper, an autonomous pallet truck that navigates factories independently without requiring floor loops. Their products enhance efficiency, safety, and sustainability in production environments. They operate as both integrators and suppliers in the robotics industry.

**Elektrolas Lastechniek B.V.** (Waalwijk)
Specializes in welding automation, integrating robots and cobots to enhance production processes. They collaborate with ABB Robotics as a system integrator for welding solutions in Southern Netherlands.

**Vezet Group** (Eersel)
Specializes in providing solutions for mechanical and electrical systems, with experience in maintaining and modifying industrial machines and robots. They serve as integrators, offering both new and refurbished robots for applications such as picking, packing, palletizing, and handling. Their expertise lies within production environments.

**Affix Engineering B.V.** (Best)
Specializes in industrial robot programming and machine vision, offering services like process optimization and project management. They collaborate across various sectors, including automotive and logistics, providing innovative automation solutions. As integrators, they work with all robotics companies, including ABB, Comau, Fanuc, Kuka, and Universal Robots.

**Acotech Robotics** (Linden)
Specializes in designing and building custom robotic systems tailored to various industries. They create robots for tasks such as cutting,


*Eindhoven city center*

welding, and other automation needs in sectors like manufacturing and healthcare. As a robotics integrator.

**Eltrex Motion** (Breda)
Specializes in drive and positioning technology, offering high-quality components and complete solutions for machine building in the Benelux. They act as an integrator for robotics.

**Black Box Engineering B.V.** (Gemert)
Specializes in industrial automation and robotics, offering integration services for AGVs, machine building, and predictive maintenance.

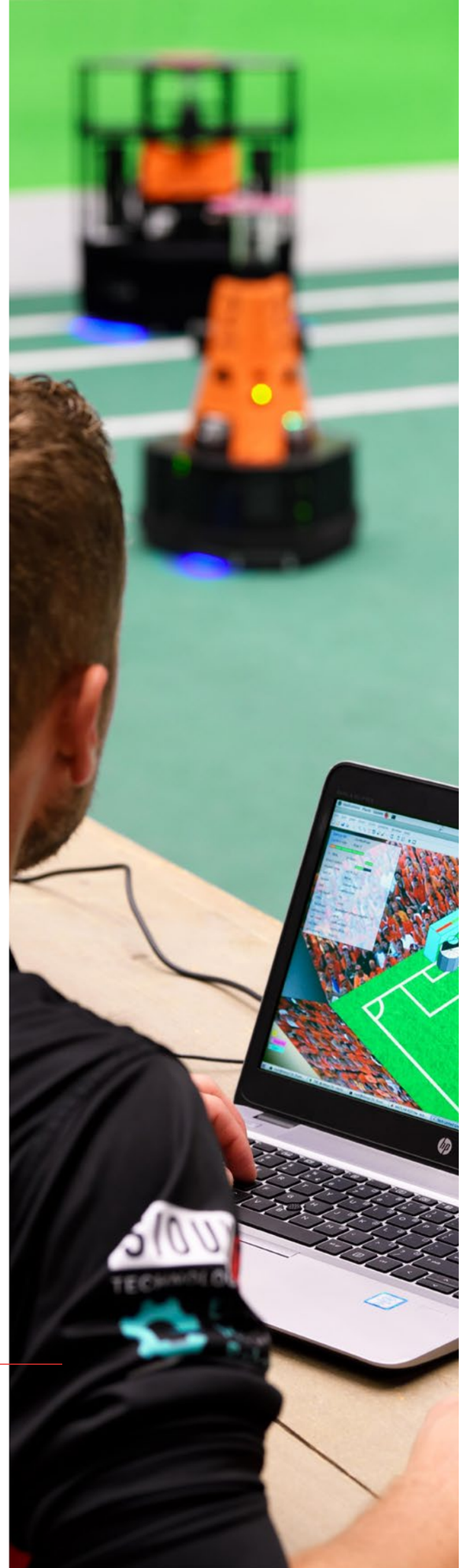
**VDL Steelweld** (Breda)
Specializes in designing, producing, and integrating robotic production systems, primarily for the automotive industry. They serve major automotive clients globally, offering innovative solutions like Automated Guided Vehicles (AGVs).

**ACE Development & Engineering** (Eindhoven)
Offers integrated solutions in industrial automation, including custom machine development and electronic systems for various industries such as automotive, manufacturing, and medical technology.

**Marel Benelux B.V.** (Boxmeer)
Is a leading supplier of advanced machinery and software for the food processing industry, with a strong emphasis on robotics. They play a significant role in automating food production processes.

**Steffens RVS Techniek B.V.** (Breda)
Specializes in integrating collaborative robots (cobots) into production lines. Recognized as a Universal Robots Certified System Integrator, they offer services from concept to installation. Focus on companies in the food and pharmaceutical sectors seeking automation solutions.

**Etteplan** (Eindhoven/Son en Breugel)
Provides robotics solutions focused on improving manufacturing efficiency through automation. Services include designing and integrating robotic systems, including assembly automation and robotic handling.



*Soccer robots Tech United Eindhoven*

# Contact

This guide is made by Brabant Development Agency (BOM). BOM provides comprehensive support to help you discover new business opportunities, build your network in Brabant and helping businesses turn their innovative plans into reality on a global scale. Our department works in partnership with the Netherlands Foreign Investment Agency (NFIA) to support foreign companies in establishing or expanding their operations in the Netherlands and Brabant.

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