

**BECOM**  
it's possible.



**Imagine the possibilities.**

# FIT FOR THE FUTURE – WITH NEW ACCENTS



We are driven to make life in our society a little easier and safer each day by inspiring people with new innovative technologies. With interpersonal relationships and the right competence in the right place, we are able to achieve the seemingly impossible, both within the company and towards our customers. Our greatest motivation is to create something in order to produce great and innovative solutions and products.

## BE SUSTAINABLE – BE INNOVATIVE – BECOM

“It’s a great feeling when we solve problems together with the customer and support in growing their market.”

“When I walk through an access control gate at the airport and discover one of our products, then it makes me rather proud.”

# THE CORE OF OUR CORPORATE PHILOSOPHY

...includes holistic sustainability, environmental and energy management. At BECOM, as a globally active and value-oriented family business, there is one thing at the forefront of all decisions right from the start: RESPONSIBILITY. Responsibility towards our staff, our region, our products and solutions,

for society and the environment and for our planet. For many years BECOM has been following a comprehensive environmental protection concept and sustainable energy management, which is realised in all sectors on the basis of the UN Sustainable Development Goals.

## ZERO CO<sub>2</sub> IS POSSIBLE!

- **57.6 %** Savings in effective energy consumption over the last 10 years
- **0 %** CO<sub>2</sub> emissions (in production and infrastructure at our headquarters)
- **0 %** Fossil fuels achieved
- **Sustainable** products and services
- Consideration of a **fully circular economy** (e.g. circulation instead of disposable packaging...)
- **Code of Conduct**

- **Extensive investment in future technologies** (e.g. smart control, LED lighting, photovoltaic installations...)
- **Sustainability Report** in accordance with GRI standards
- **Waste management concept** (e.g. water dispenser instead of bottles...)
- Certifications: **ISO 9001, ISO 14001 und ISO 45001**

# WE MAKE IT POSSIBLE

Since 1984, BECOM has been the reliable electronic engineering, manufacturing and service partner for industrial customers. From the very first concept idea, to development and validation, right up to series production, our customers receive everything from a single source. Thanks to international locations and partners, customers around the globe today benefit from the high quality solutions, services and know-how provided by our experts.

In recent years, we have increased our investment in embedded and sensor solutions in order to be able to react flexibly in terms of our time to market. In addition, our in-house research and development ensures that our partners can benefit from technological advances on the market. In the field of embedded systems, our customers benefit from a modular product range. BECOM's stability and range of services complement its innovative strength, thus guaranteeing customers long-term availability and highly efficient production processes.

BECOM has remained a sustainable family business to this day. With roots in Burgenland, the group offers unbeatable quality and world-class solutions. Thanks to healthy yet continuous growth and a flair for innovative developments, BECOM is the top choice for customers from all industries.



**KR Ing. Johann Bock**  
Owner/Manager



**Ing. Mag. Johannes Bock**  
Owner/Manager



**DI Roman Bock, MSc**  
Owner/Manager



**Ing. Manfred Hofer, MSc**  
Manager




**DI Helmut Freiler**  
Manager




**Ing. Bernhard Wieser, MSc**  
Manager



**Christian Werfring, MSc**  
Manager

 Turnover  
**> 100 million**

 R&D-Quota  
**5.00 %**

 Employees  
**≈ 600**

# FROM IDEA TO SOLUTION



The best guidance at every stage of the process – from the development department to our own accredited test laboratories and process-optimised production right up to backstage services, BECOM offers the perfect environment for successful projects.

From the first idea to a product ready to enter production, BECOM makes it possible. Teams of experts find innovative solutions for unique challenges and complex processes.

Highly efficient production, automated processes and innovative logistics make BECOM the ideal partner for electronics solutions in the automotive, medical technology and industrial electronics sectors.

With support throughout the development process and standalone design solutions, BECOM offers much more than measurement technology. Testing is performed by EMC experts in our firm's own accredited laboratories.

BECOM is a reliable partner before, during and after each stage of the process. From project and material management to after-sales services, our clients always get more than just a product.

## RESEARCH & DEVELOPMENT

- System development
- Hardware development
- Software development
- Mechanical development
- PCB design
- Process development
- Development of test methods
- Embedded systems
- Sensor technology

## PRODUCTION

- SMT production
- THT production
- Robotics
- Coating
- Potting
- LED centering
- Assembling / Box build
- Traceability
- Inhouse automation solutions

## VALIDATION

- Accredited EMC laboratory for EMC for ISO/IEC 17025
- Environmental testing
- Electrical testing
- Test load stands
- Thermography measurements
- Authorized calibration body for ISO/IEC 17025

## BACKSTAGE SERVICES

- Project management
- Product lifecycle
- New product introduction / NPI
- Obsolescence management
- Product changes
- Risk management
- Logistics
- After sales services
- Feasibility evaluation



# RESEARCH AND DEVELOPMENT

From ideas and the first development stages up to production-ready products and more – BECOM’s teams of experts guide our clients in the fields of hardware, software and mechanics throughout the entire development and added-value chain. Innovative solutions in developing systems and functions are just as feasible as in optimising processes and developing test methods to accompany manufacturing.

Based on the V Model, SPICE for Automotive Systems and agile development methods, our experts develop hardware, software and mechanics for clients in the industrial electronics, automotive and medical industries. The Product Development and Process Development departments at BECOM work closely together and jointly create efficient, world-class solutions and innovative technologies.

## Innovative logistics solutions

Developed by BECOM especially for palletizing and pick&place, the TOREO-P650 sensor solution combines the advantages of ToF and stereo technology in one product. This makes it unique on the market, offering users a decisive competitive advantage.

## Solutions for every challenge

- Embedded systems / control units
- Sensor technology
- LED applications
- Charging technology in the electro-mobility sector
- Power electronics

## Fit for the future

In the field of automation, BECOM’s world-class developments in sensor technology and robotics demonstrate its superior innovative strength.



# INDIVIDUAL EMBEDDED SOLUTIONS

From your idea to a common system architecture. BECOM develops and supplies highly reliable Embedded Systems for professional applications in almost all common industries. With various pre-developed technology components and platforms we help

you to accelerate your product innovations and market introduction dates. All phases of the product life cycle are covered - from initial conception and consultation to the system design and through to industrialization and maintenance.

**Your idea paired with our toolkit and our advice help you to realise the system architecture.**

## Embedding Ideas

- Sensor integration, processing and fusion
- ARM-based processor platforms
- Support of common operating systems
- Driver development
- Middleware
- FPGA solutions
- HMI / User Interfaces
- Connectivity
- Box build at module level

## Embedded Know-How

- Design experience in the sectors of
  - Medical Technology
  - Intralogistics
  - Automotive
- EMC-compliant Design
- Thermal & Energy Management
- Security by Design
- Battery Management



# PRODUCTS

BECOM aspires not only to develop innovative technology, but also to integrate it seamlessly into client solutions and our own products. As an experienced partner with a long track-record of innovation, BECOM guarantees long-term availability and offers experience in production, industrialisation and backstage services alongside expertise in cutting-edge technology. BECOM guides its clients through the entire development and integration process, from the design of

optical systems through the testing phase right up to validation and mass production. 3D cameras based on time-of-flight and constructed using a modular system make it considerably easier for BECOM to develop and realise complex sensor technologies. From highly flexible prototyping to individually produced solutions, new applications can be realised more quickly and simply than ever before.

## Maximum performance

Time-of-flight cameras developed by BECOM boast both maximum performance and a robust design. They are consequently ideal for a multitude of applications, being suitable for use in demanding outdoor conditions where they are exposed to solar radiation and the effects of the weather.

## Fields of application

Automation, automotive sector, buses and trains, driverless transport systems, building technology, Industry 4.0, logistics, medicine, identification systems, safety systems

On our website all our other products are listed.



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# VALIDATION

BECOM has been the first-choice for EMC compliance and environmental assessments for more than a decade. Clients from industry, the railways, the automotive sector, telecommunications and IT rely on our ISO/IEC 1705 accredited test laboratories. With support throughout the development process and standalone design solutions, BECOM's experts offer much more than 'just' measurement technology. Results can be interpreted immediately if so desired and used to create solution and design proposals.

BECOM guides its clients through every phase of a project, from system develop-

ment, PCB design, routing, signal integrity to problem solving in existing systems right up to the final approval and validation stage. Providing support from the earliest preliminary and planning phases avoids the need for potential redesigns later on in the development cycle.

BECOM also offers all-inclusive services for setting up and running tests, from the test case preparation using LabVIEW, monitoring and controlling the tests, automating the functionality tests and climatic chambers right up to generating test reports and developing the electronics for selecting test specimens.

## EMC test laboratories

- 450m<sup>2</sup> with areas for HF, electronic tests and ESD
- Semi anechoic chamber (SAC) with 4m height scanner – full compliance –
- Absorber cabins with test load stands
- CISPR 25 absorption chamber 6x5m – full compliance
- Shielded room – performance-related HF tests
- Pre-compliance absorption chamber for small test specimens

## Climatic test laboratory

- Various temperature or climatic chambers
- Temperature: -70°C to +180°C
- Relative humidity: 0% to 100%
- Temperature shock: -75°C to +200°C
- Climate stress screening: temperature gradients of up to 15°K/min





# PRODUCTION

Highly flexible and always on time. At BECOM, a team specializing in automation solutions guarantees effective operations and extremely efficient production processes at three production sites. Cutting-edge production facilities enable the fully-automated, semi-automated or even manual production of electronic components and devices.

With our own test centres and multi-stage quality management, BECOM guarantees the highest quality throughout the entire production process. Thanks to an intelligent

logistics system, BECOM is able to ensure optimum traceability throughout the whole operation. Our in-house development teams and innovative machine-machine and human-machine interfaces give our clients a decisive edge in Industry 4.0. As a result of investments in people and technology in all of our facilities, today BECOM is a trailblazer in the fields of automation and digitization. Solutions developed by us in-house in both of these sectors guarantee optimal quality from the development stage right up to the end products.

## The right solution to every challenge

### Production

- SMT production
- THT production
- Robotics
- Coating
- Potting
- LED centering
- Press-fit technology
- Fully automated depanelisation
- Assembling/Box build
- Mechanical processing
- Traceability
- Conceptual design and implementation of product-specific automation solutions

### Testing

- AOI
- X-Ray
- SPI
- ICT-Testing/Flying probe tests
- Functional tests
- Boundary scan tests
- Burn In/Run In
- EOL
- Calibration
- Adapter construction

# BACKSTAGE SERVICES

It is only when every process is running smoothly in the background that a project can truly be deemed successful. Alongside classic services such as development, validation and production, today BECOM also performs such services as NPI, feasibility assessments, logistics and material and obsolescence management.



<b>Feasibility assessments</b>	Teams of experts sound out feasibility in technical, economic and organisational fields and devise alternatives where they are needed.
<b>Introduction of new products</b>	From the first draft right up to production and quality assurance, BECOM focusses on the functionality, usability and EMC of new products from the outset.
<b>Obsolescence management</b>	BECOM uses its experience to focus on planning for the long term with regard to material and product availability, and offers reliable long-term availability through stable partners.
<b>Logistics</b>	Intelligent solutions for production, material and shipping logistics as well as a state-of-the-art logistics centre guarantee just-in-time delivery.
<b>After sales service</b>	BECOM provides support beyond the production and delivery stages, for example with material availability, replacement parts, end-of-life management and obsolescence management.
<b>Risk management</b>	By assessing the technical feasibility, hedging on price fluctuations, developing suppliers, employing a buffer strategy and securing second sources, BECOM is able to mitigate against risks.



# AUTOMOTIVE

Since the turn of the millennium, BECOM has been wowing the automotive industry with innovative solutions and reliable production at three manufacturing sites worldwide.

BECOM is at your service throughout the entire life cycle of a product – from conceptual design, development and validation

to industrialisation and production – in the areas of embedded systems/control units, sensor technology and LED applications. International locations and unbeatable quality standards have made BECOM a Tier 1 and Tier 2 partner for countless top brands in the automotive sector.

## BMW relies on BECOM

BECOM is a long-standing Tier 1 supplier and innovation partner for BMW. Our customized embedded solutions and LED applications can now be found in millions of vehicles worldwide. BECOM's automation solutions in the industrialization process secure a decisive competitive advantage.

## References

BMW, BMW Motorrad, Mercedes Benz, Citroen, Ducati, Ford, Jaguar, Landrover, Linde, MAN, Peugeot, Scania, Volvo



# INDUSTRIAL ELECTRONICS

Industrial electronics is one of the cornerstones of BECOM's business operations. BECOM combines optimal process development, highly-efficient production and exceptional product quality to make the firm the go-to choice for clients and partners from all branches of industry. With seasoned experts, innovative production processes and accredited test laboratories, BECOM provides guidance throughout the entire

lifecycle. For highly complex components – such as for engine test stands – BECOM complies with above-average standards. Situations in recent years have shown that innovative digitization solutions are needed in the area of occupancy management and people counting, but also in the area of logistics. Here, too, BECOM is a driver of innovation, offering the perfect solutions.

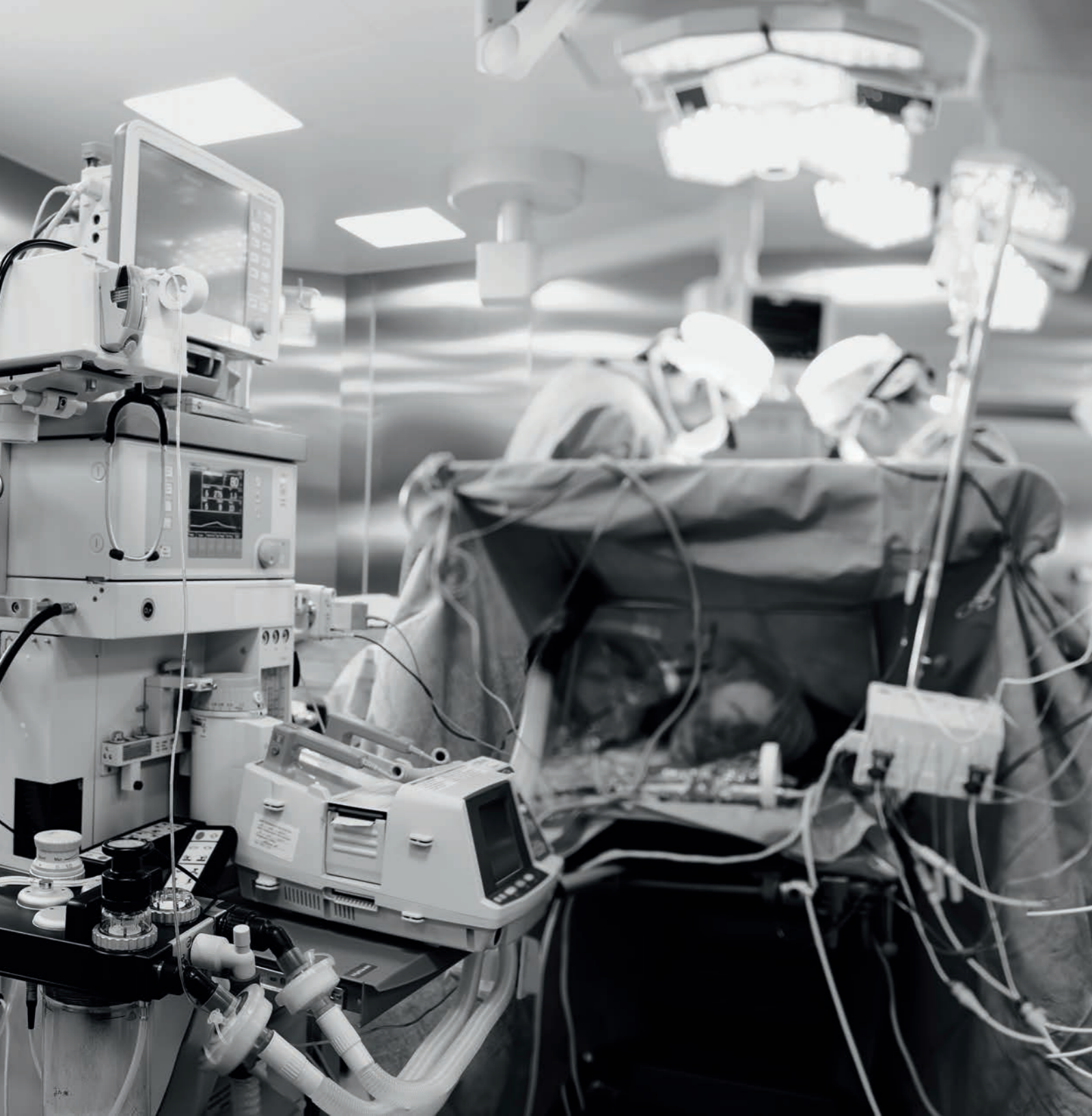


## Innovative strength

One of BECOM's **innovative logistics solutions** is the TOREO-P650 sensor system, which combines the advantages of ToF and stereo technology in one product. This makes it unique on the market, offering users a decisive competitive advantage, especially in the field of palletising and pick&place. **Innovations in occupancy management and people counting:** BECOM also has the ideal solution here, for example in the area of access control. The ToF products used here ensure that personal data is not recorded while simultaneously increasing pedestrian traffic flows many times over, e.g. at airports.

## References

Electronics for engine test stands (AVL), sensors for automated warehouses (SSI), innovative logistics solutions (MHS), sensors for ToF cameras, electronic controls for cranes (Palfinger), electronics for power station controls (Andritz Hydro), LED boards for overhead displays (Swarco Futurit), occupancy management for access control (Digicon), electronic controls for trains (Zelisko), electronics for fingerprint readers (Idencom), electronic sensors for coffee machines and automated water taps (Aquis), robotic lawnmowers (Stihl), electronics for high-quality refrigerators and freezers (Liebherr), control electronics for high-bay warehouses (KNAPP), smart-home applications (LUPUS)



# MEDICINE

Innovative solutions and wide-ranging expertise make BECOM the ideal partner for developing and producing Class I, II and III medical products. Thanks to established contacts within the authorities, BECOM provides its clients with reliable advice and guidance concerning every test and approval process.

Our own in-house test facilities and specially trained personnel guarantee optimal safety for clients and patients at every stage of the working process. BECOM is able to win over established major clients and innovative start-ups in equal measure with flexible structures and many years of experience.

## Innovative strength in the healthcare sector

Thanks to a new embedded system, BECOM is supporting anonymous, effective care in the healthcare sector, for example in fall detection. BECOM is also entering the second round with the new KoCoBox Med+, thanks to KoCo Connector GmbH relying on our extensive know-how. The product is industrialised and manufactured under strict, certified processes.

## References

Neuro Appliance, Otto Bock, Roche Diagnostics, Schrack Seconet, KoCo Connector

## Standards and directives

- ISO 13485:2016
- ISO 60601 series (general standard for electronic medical devices)
- ISO 62304 (medical device software)
- MDD 92/43/EEC (EU directive on medical products)
- IVDD 98/79/EG (EU directive on in vitro diagnostic medical devices)
- RL 90/385/EWG (EU directive on active implantable medical devices)
- Medical Devices Act of the respective country issuing approval

# LOCATIONS



Sales



Development/  
Validation



Production

## NORTH AMERICA



**IVP, Inc. USA**  
Los Angeles, USA

## ASIA



**BECOM Electronics (Heyuan) Co. Ltd.**  
Heyuan, China

## EUROPA



**BECOM Electronics GmbH**  
Hochstraß, Austria



**BECOM Systems GmbH**  
Vienna, Austria



**BLUETECHNIX Lab GmbH**  
Vienna, Austria



**BECOM Electronics Hungary Kft.**  
Környe, Hungary



**IVP Group Germany GmbH**  
Buchenbach, Germany



**Vertriebsbüro Hamburg**  
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