Innovation in Guidance

Sensor technology for vehicle automation

www.goetting-agv.com
Four decades
developing ideas for tomorrow

Since 1965, Götting KG has stood for innovations. We are known for our ability to embrace new challenges. In the beginning, our company started with constructing and selling amateur radio equipment and has subsequently gradually moved into other technical areas. Since 1980 we have been producing equipment and systems for automation, traffic control and HF measurement engineering and general radio engineering. We also serve companies from the car manufacturing, electrical engineering and broadcasting industries. Major brands choose Götting KG products, particularly companies in the automotive, materials handling and plant engineering industries. In 2000, our FOX department expanded our range by automating mass-produced commercial vehicles: trucks, pay loaders and industrial tractors. And we have won many prizes for our excellent innovative achievements.

From left to right – C. Meyer, Technical Sales; B. Zeugner, Order Processing; T. Neugebauer, Head of Development; H.-H. Götting, CEO
Our company has been managed by the owner from the beginning. Today Hans-Heinrich Götting runs the business.

In many product segments, Götting KG is a market leader. And in the future this is the position we want to maintain. At the same time our goal is to include new markets in our portfolio.

Our varied range of sensors for track guidance of automated guided vehicles and driver assistance is unique. We are known throughout the industry for our ability to adapt and innovate. Götting KG combines two strengths: The tradition and the dedication of a second generation, family-run enterprise, as well as the experience and professionalism of an approx. 50-strong workforce. About 15 engineers track down productive innovations. We produce tomorrow’s technology every day, and stay in touch with the future of technology through our many connections with universities and institutes.
Götting KG launched its start into the field of sensors for track guidance of AGVs with guide wire technology. Guide wires have proved to be reliable and good value in many long-term applications. The range spans simple, slow and small AGVs as well as large vehicles transporting people at up to 100 km/h. As a result, Götting KG can offer an extensive portfolio of different generators, guide wire sensors and interpreter cards.

It is easier to apply lines to the roadway to guide vehicles than guide wire. Track recognition is carried out with modern cameras and image processing systems. Depending on the requirements, even interrupted lines do not constitute processing obstacles. The latest technology offers the ability to recognize coded tracks or optical markers.
Götting KG has been working on positioning systems using transponders as landmarks since back in 1985 and has demonstrated a high level of skill in this area. Using the transponders, either specific positions are determined along a line- or track-guided system, or virtual tracks are defined. The transponders are activated by the transponder reader/antenna, transmit their identification signal and their position is then detected with an accuracy of millimetres or centimetres. So the vehicle can identify the position lengthways and/or crossways.

If a high level of flexibility in track guidance is required, retro-reflecting optical markers at the edge of the roadway, e.g. on the walls, are an option. With the Götting laser scanners, in the space concerned the vehicle can identify its position and the direction it is going in with particular accuracy. As an alternative to laser scanners, Götting KG can also offer camera-guided processes. Instead of on the walls, the bearing markers can be placed to greater advantage on the ceilings.
Actively-transmitting markers / satellite navigation

By using radio procedures, exact positioning in any outdoor (satellites) and even in larger indoor spaces is possible. In this case, Götting KG can offer both the technology and customised integration. Depending on the process, position accuracies of just a few centimetres are possible.

Other products

Depending on the circumstances, environment and application involved, different sensors and data transmission systems are required for guiding vehicles. Thanks to its experience and with a variety of systems at hand, Götting KG can offer the best in customised and application-specific solutions here as well. Active and passive distance and odometry sensors are also integrated. The position is calculated on the track guidance computer and the vehicle is guided on the track. Götting KG's scope of radio data transmission systems ranges from the lowest frequency range (50 kHz) to the highest frequency range (several gigahertz.) We offer state-of-the-art technologies.

Navigation with satellites

Radio data transmission products / Leaky-wave cables
Due to the diverse demands placed on track guidance technology, all projects are different. Götting KG has the most extensive range of sensors for guiding vehicles and can therefore provide customers with the most suitable technology for their requirements.

We also support our customers in route control, including the associated control technology.
Automated guided vehicles: Creating versatility

Vehicle guidance components are used in the most varied of applications. The range covers basic requirements for line-guided vehicles (at affordable prices and in large numbers), to more demanding requirements for products that are particularly vibration-proof and have to be totally reliable, even in tough ambient conditions and at extreme temperatures.

As a result, even fast vehicles transporting people, cranes in seaports, or vehicles on rough terrain and in very hot or cold conditions, can be guided reliably.
Tried and tested under the toughest of conditions

- Reliable operation at high and low temperatures
- Insensitive to dust
- Smooth operation in wet conditions
- Perfect operation even under influence of vibrations and shocks
- Independent of lighting conditions

Top left: Inductively-guided AGVs

Top right: ULTra vehicle at Heathrow airport

Bottom: Inductively-guided, heavy-duty AGV transports vast aircraft wings
Reliability – from the planning stage to operation

Our customers come back to us again and again because we are flexible, offer extensive service and make our deliveries on-time. And there are many reasons for this:

- We manufacture equipment and components in our own production facilities. With our qualified experts, the necessary manufacturing equipment, measuring instruments and facilities, all our products are assembled, tuned and tested in-house. Our range covers individual solutions, pilot runs and mass-produced series. Our own component procurement department has good contacts with suppliers. Combined with our production planning department this ensures precise planning of the production sequence.

- Thanks to its structure, in addition to mass-produced products, our production department can very flexibly and quickly produce customised equipment in the most varied of types and to a high standard of quality.

- We closely co-operate with dependable production partners and test all our equipment in-house. Consequently, we have been able to achieve a high level of production quality in our entire product range for years.
• Our team is highly professional and versatile, so we can turn customers’ specifications into reality. If required, we can do radio measurements, site surveys or operation tests on site already during the planning stage. We also carry out commissioning on site and our after-sales service offers a quick response, due to direct contact between developers and customers.

Many of our products have been in operation in difficult industrial environments for more than 25 years.

• All Götting KG’s processes are ISO 9001 certified. Because of the tough demands we place on our suppliers, we can guarantee that the quality of our products is maintained. Before shipping our products, they are subjected to in-depth final inspections.
Götting KG has developed successful solutions for a whole host of projects. And we support any project as required by carrying out commissioning and extensive on-site service. We offer direct service, or via our partners, world-wide.

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