Inertial solutions for critical missions

LITEF

Leading Inertial Technology

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Where others reach their limits we start. We have been developing inertial sensors and navigation technologies that redefine what is physically possible since 1961.

At our company headquarters in Freiburg im Breisgau, around 600 employees work on the further development of our core technologies, MEMS and FOG. This company location combines research, development and production under one roof – for short distances from the idea through to the product.

The company is certified by EASA and the German Military Aviation Authority (LufABw) as a design and production organisation as well as a repair station. Thanks to multiple production sites and strategically diversified supply chains without dependencies on sensitive procurement markets, LITEF guarantees the highest reliability, quality and supply availability for customers worldwide. In our own cleanrooms, we develop and produce ourselves the chips we use and thus ensure maximum independence and long-term delivery capability.

WHAT SETS US APART

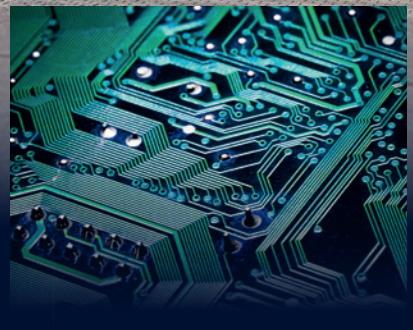
Our technologies and products are developed for challenging missions and environments in which traditional solutions fall short.

For more than 60 years we have been developing highly complex systems independently.

With our work in numerous clubs, committees and registered associations, we are able to lead the way for the industry – on a regional, national and global scale.

We understand your specific challenges and develop customised solutions together.

As a company within the Northrop Grumman Corporation, LITEF develops innovative, ITAR-free technologies and products for groundbreaking solutions in Freiburg.



At home in your application

AVIATION

We design advanced inertial systems so that modern aircraft keep their course safely, fighter jets manoeuvre precisely or helicopters navigate in the worst visibility conditions.

Military aviation
Military operations require systems that operate safely and reliably even in the most extreme conditions. Our solutions guarantee precise heading and positioning information even when GNSS signals are disrupted or unavailable.

Civil aviation
Whether aeroplane or rotorcraft, manned or unmanned – our systems ensure precise stabilisation and navigation with the greatest possible safety. We help aircraft manufacturers enable more efficient flying while meeting the highest safety standards.

LAND OPERATIONS

Robust, deception-proof and highly accurate navigation is essential for modern military operations, as they are increasingly affected by electronic interference and unreliable GNSS availability. Our modular and fully compatible portfolio for land-based applications is precisely what is needed, and meets the highest NATO standards.

MARITIME

We offer a flexible, highly dynamic Navigation Data Integrator (NDI) especially for surface vessels and submarines in complex maritime applications. It provides reliable data even in the most difficult conditions. Intelligent data integration results in a precise and reliable navigation that clearly displays the course, position, speed and other essential information on the LITEF bridge system.

MISSILES & STABILISATION

Our systems combine advanced technologies to improve system accuracy, resistance to interference signals, and long-term operability without additional maintenance costs. They enable highly precise stabilisation of, for example, electro-optical systems on helicopters or platforms with high shock and vibration loads.

INDUSTRY

For automated applications and autonomous systems, we offer highly sensitive and extremely robust sensors for acceleration measurement, and for positioning and measurement tasks.

CUSTOMISED SOLUTIONS

Standard products are not always suitable. This is why we develop solutions which are precisely tailored to your requirements. Whether it's new interfaces, modified housings or extended functionalities – we integrate our technology seamlessly into your platform: from software protocol customisation to mechanical integration. We have all the competencies at our site to develop requirements and solutions for your project together with you.

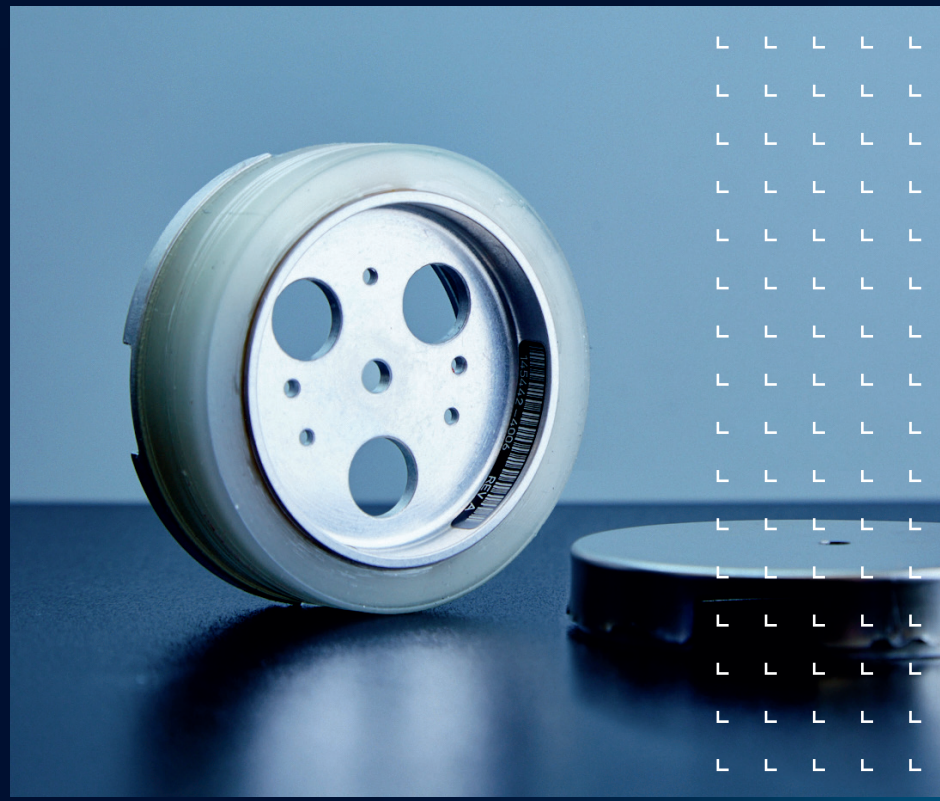
Pioneer of the latest inertial sensor technology

FOG

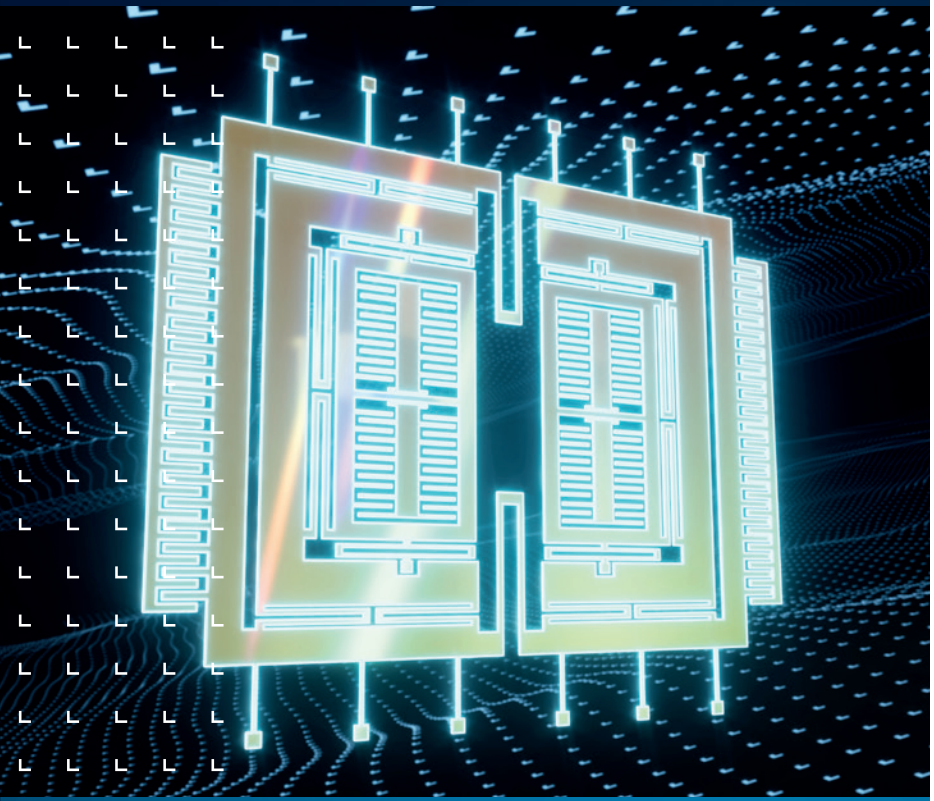
Fibre Optic Gyroscopes (FOGs) measure rotation using light interference in a glass fibre coil. The result is extremely robust, precise and durable systems for navigation and stabilisation. We were the first company to develop FOG systems for demanding conditions, and since then we have been driving the technology further and pushing boundaries.

This is what FOG can offer:

- Robustness without compromise thanks to a structure without moving components
- Extreme environmental resistance – especially against shock and vibration
- Highest accuracy with flexibly scalable measuring ranges
- Exceptionally dynamic detection of even the fastest changes in movement
- Thanks to modular design, individually adaptable to the measurement range and accuracy requirements
- High performance and compact design thanks to optimised light wavelength (830 nm)
- Minimal start-up times and immediate availability thanks to highly integrated electronics
- ITAR-free technology according to stringent aviation standards



With more than six decades of experience in the development of inertial systems, we continuously define new standards – from mechanical gyros via fibre optic technology to micromechanical sensors.

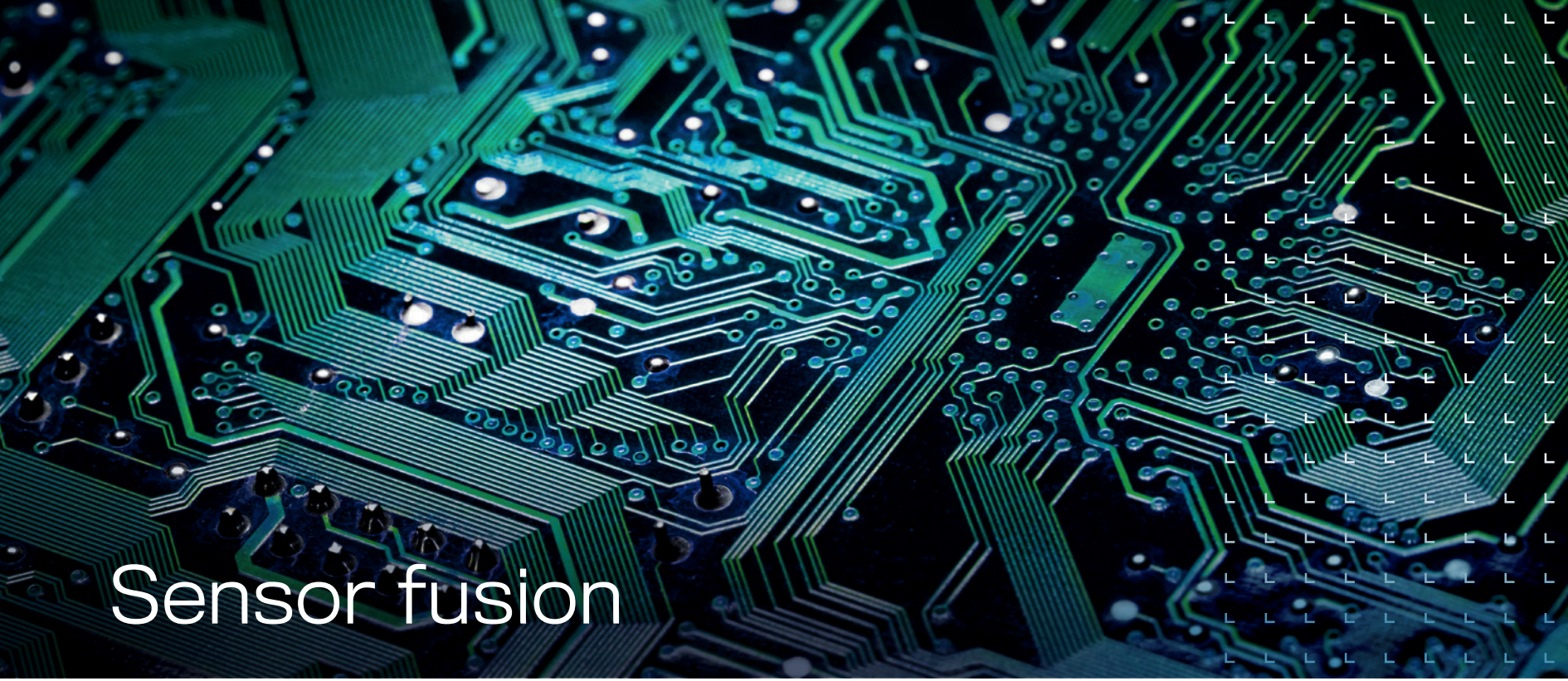


MEMS

MEMS (Micro-Electro-Mechanical Systems) enabled a miniaturisation that revolutionised inertial sensor technology. We are working to develop classic MEMS IMUs with the precision of optical systems. Our goal: compact, robust and cost-effective sensor solutions based on MEMS that enable precise gyro compassing. This means reliable north finding and use without external reference systems such as GNSS or magnetic field sensors. Currently, we offer inertial measuring units (MEMS-IMUs) in addition to 1-axis MEMS gyroscopes and 3-axis MEMS acceleration sensors.

This is what MEMS can offer:

- High-precision measurements of motion, position and acceleration
- Compact design thanks to micromechanical components
- Low energy consumption thanks to low moving masses and low voltages
- High resistance to external influences
- High long-term stability and temperature stability
- Cost-effective solution for high technical requirements



Sensor fusion

More data means more navigation options. Whether swarm navigation or tactical alliances – together with our partners we are testing different sensor fusion concepts under real-world conditions and develop powerful networked solutions with collective intelligence.

This is what our sensor fusion solutions offer:

- Aviation-certified integrity thanks to FDE algorithms and detection concepts
- Protection against interference and manipulation attempts through anti-spoofing technology
- Autonomous navigation capabilities in case of satellite failure
- Smart systems with FOG precision, MEMS robustness and GNSS availability
- Intelligent data exchange for swarm and compound navigation
- Hybrid performance optimisation for measurement results with minimum latency and maximum signal-to-noise ratio

Maintenance & repair

From the first diagnosis to the last manoeuvre: our technicians know every screw and every feature of your system and can help quickly and purposefully.

This is what our service team can offer:

- 360° support that assists you from maintenance and repair to optimisation.
- Our service team will go to where you need us.
- We are a certified repair station for military and civil aviation equipment.

Technology with a future

SUSTAINABILITY

Our products are manufactured with high quality standards. The goal: to design each sensor to be especially durable and to produce it with as few resources as possible.

As a regionally rooted company, we have always attached great importance to a responsible approach to our employees and the environment. This is reflected in our employee welfare programmes, solutions for more energy efficiency, sustainable supply chains and our social commitment.

QUALITY MANAGEMENT

Perfection starts with the details. When people entrust their lives to our systems, there is no room for compromise.

Our quality management systems fulfil the requirements of the national and international standards, norms, regulations and laws surrounding quality, the environment, occupational safety and information security.

Just a few of our certifications & approvals:

- EN 9100
- ISO/IEC 27001
- EASA
- FAA (14 CFR Part 43 and 145)
- LBA Production organisation
- LBA Maintenance organisation
- German Military Aviation Authority (LufABw)

Interested?
Let's talk!

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Do you have questions or a specific request?
Contact us by email or phone.
We look forward to hearing from you.

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Northrop Grumman LITEF GmbH, based in Freiburg, is a German company within the global Northrop Grumman Corporation. As a company, LITEF has its own ITAR-free technology and product portfolio. The company is certified by EASA and the German Military Aviation Authority (LufABw) as a design and production organisation as well as a repair station. Thanks to multiple production sites and strategically diversified supply chains without dependencies on sensitive procurement markets, LITEF guarantees the highest reliability, quality and supply availability for customers worldwide.