

# Norbert Schwarz

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An accomplished Project Manager, Hardware and Software Engineer, specialized in the development of breath analyzers with extensive experience in defining product specific requirements, embedded hardware and software design, including integration of different sensor technologies for measuring breath alcohol and combustible gases.

## Summary of Qualifications

- Long term experience in the development of breath analyzer, based on customer requirements, including compliance with national and international standards for metrological and legal requirements.
- Strong knowledge of infrared and fuel cell sensor technologies for detecting breath alcohol and combustible gases.
- Comprehensive knowledge of developing hardware and software for gas detection devices.
- Realization of crypto graphical requirements for data privacy, integrity and authenticity.
- Solid management skills, demonstrated proficiency in leading and mentoring teams.
- Extensive experience in considering approval, service quality and production concepts of gas detection devices.

## Professional Experience

**Draeger Safety, Luebeck, Germany**

**1980 – Present**

Manage and development of gas detection devices for detecting combustible gases and breath analyzers for police authorities world wide.

This includes:

- Specification of customer requirements.
- Design of embedded hardware for Motorola 68HC11 and Renesas M16 derivatives for controlling infrared and fuel cell sensors for detecting combustible gases and breath alcohol.
- Design of embedded software for controlling infrared and fuel cell sensors.
- Design of applications for Windows CE OS.
- Design for electromagnetic compatibility and electrical safety according national and international standards. (CE-marking)
- Integration of an embedded crypto graphical system, based on a CardOS, 4.3b operating system
- Realization of production, service and quality related requirement.
- Product Management with responsibility for costs of development, product quality and time to market and profitability.

## Education

University of Applied Science, Luebeck, Germany

**Bachelor of Science Degree, 1980**