

asec Services

Services offered by asec cover among others the following topics:

Basic and Applied Research in the Field of System Integration

- Microelectronic Systems/Microsystem Technology
- Energy self-sufficient distributed Microsystems
- Design of System-In-Package
- Design and Fabrication of Technology Prototypes and Functional Models
- Electromagnetic Reliability
- Analysis and Optimization of Emissions and Noise Immunity
- Modeling of EMC/SI-Effects
- Algorithms and Hybrid Hardware-/Software-Systems
- Image Processing
- Robot Design and Applications
- Wireless and Ad-hoc-Communication

Consulting of Small and Medium-sized Companies

- Analysis, Validation, and Selection of Technology
- Selection and Introduction of Tools for System Integration

Socioscientific Accompanying Research

Courses and Training

- Training Services
- Master's Degree Program in System Integration Engineering

Asec cooperates closely with Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration (IZM-ASE) in Paderborn.

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UNIVERSITÄT PADERBORN
Die Universität der Informationsgesellschaft

asec

Competence in System Integration



advanced system engineering center
universität paderborn

asec Core Competencies

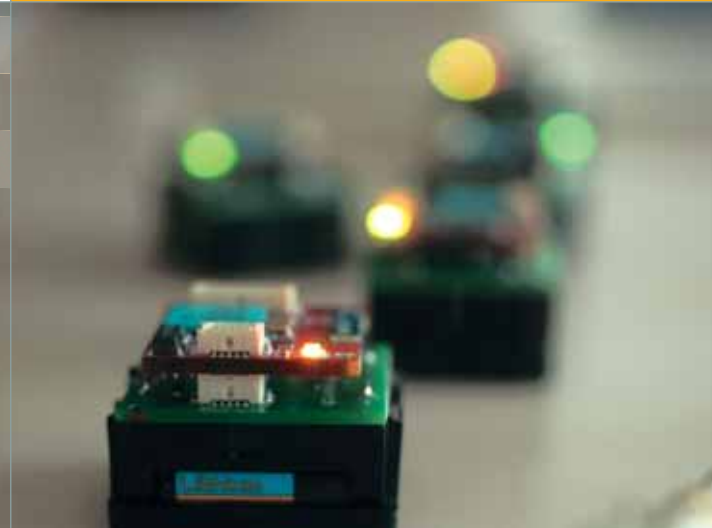
Microelectronic Systems

Components

- Sensor Concepts
- Microsensors
- Nano-Components
- HF-Communication

Integrated Circuit Solutions

- Miniaturization
- High-frequency Applications
- Hardware Design in GaAs-, SiGe-Bipolar- and CMOS-Technology
- Packaging/Bonding/CAD-Assistance
- Simulation Technology
- Cross-Layer Optimization
- Development of Prototypes
- Measurement Technology up to 110 GHz
- Sensor Integration for Microsystems



Industrial Image Processing

- Grey and Color Image Analysis
- Object Recognition and Identification
- Analysis of Surfaces for Quality Assurance
- Active Vision Systems

Smart Robotics

- Autonomous and Telesensory Robot Systems
- Service Robotics
- Driver Assistance Systems
- Virtual Prototyping

Consultation and Assistance in Development

- Courses
- Training
- Preliminary Studies and Feasibility Studies
- Comparison of Technologies
- Consultation in Conceptual Design
- Promotion of Research

The Advanced System Engineering Center (asec) is an interdisciplinary research institute of the faculty of computer science, electrical engineering, and mathematics of the University of Paderborn. It was founded to encourage research and development in the field of system integration.

Asec aims to bridge the gap between academic research and institutional or industrial users. It offers the possibility for cooperation by providing consulting, development, simulation, and fabrication in the fields of sensor technology, microsystems, circuit design, as well as signal and data processing.

The participating research groups guarantee expertise in the domains of system integration, microelectronics, wireless communication, robotics, and computer vision.

Systems

- Embedded Systems
- Real-Time Systems
- Minimization of Power Consumption
- Model based Development/Rapid Prototyping
- Hardware/Software Co-Design

Wireless Communication

- Wireless Sensor Applications and Sensor Networks
- Design and Implementation of Communication Protocols
- Application-Specific Architectures and Protocols for Communication
- Communication for Embedded Systems
- Integration of Embedded Systems into the Internet Context

