

Photo: Jürgen Lösel

MIXED SIGNAL DESIGN SERVICE

The process of designing analog circuit components in the mixed signal IC design involves highly complex boundary conditions in terms of design and technology. Today's level of automation is still very low and renders developments susceptible to errors, difficult to reproduce and offers only few options for reuse. For its services in the design of mixed signal IPs and ASICs, Fraunhofer IIS/EAS uses innovative and custom-developed processes for automation.

Take advantage of our many years of experience in designing circuits in the most varied technologies of numerous foundries from 0.6 μm to 28 nm. Profit at the same time from increased reliability of design and reduced development time.

Your Benefits

- Reliable and sustainable design service for mixed signal ICs with broad technology portfolio

- Design reliability thanks to automated, flexible IP components
- Shorter development times with focus on high quality
- Circuit optimization at system, circuit layout and post-layout level
- Technology transfer with new automation approaches (horizontal and vertical)

Our Services

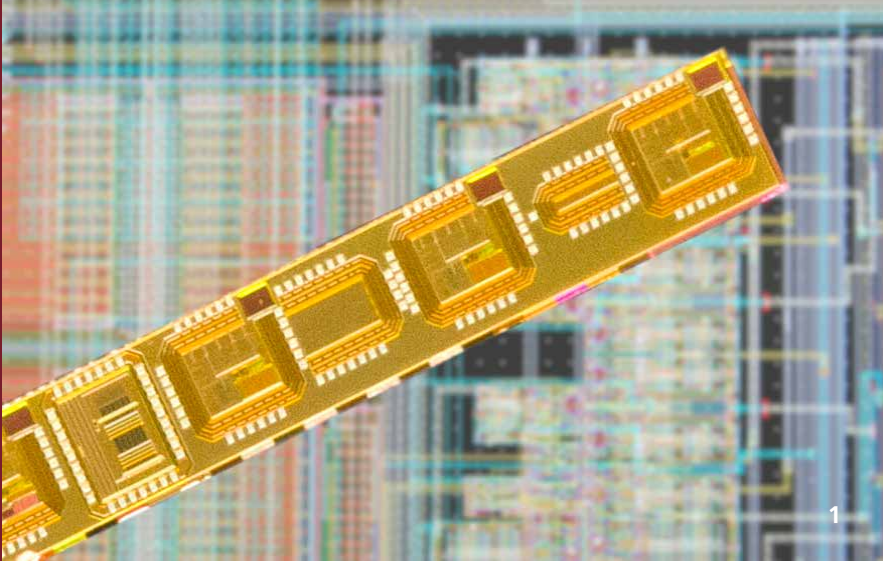
- Design of customized mixed signal IPs and ASICs
- Technology transfer and migration
- Yield optimization (design for yield)
- Rapid adaptation to change requests/supply of IP variants
- Reuse of existing circuit designs
- Establishment of in-house, modular, automated component library

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Our Concept

- Innovative »Intelligent IP Mixed Signal Design Flow« (IIP Design Flow) with unparalleled degree of automation, especially for the time-consuming, error-prone analog design
- Integration of existing developer experience
- Maximum level of automation due to flexible structure of the module design, taking into account requests for specifications and technologies
- Consistent use of up-to-date, effective EDA methods

Our services are designed for companies that demand high quality in the use of future-oriented methods for their mixed signal designs. Our services are used successfully in areas of applications, such as the automotive industry, industrial electronics and medical technology.

Our Design Expertise (Selection)

- Analog-to-digital converter with high level of precision, fast conversion rate or very low power consumption for a broad range of applications
- Energy efficient and intelligent sensor front-ends for multiphysical parameters, such as for use in industrial sensor and medical technology
- Low voltage circuits with supply voltage < 1 V, for uses including alternative energy supplies

About Us

The Fraunhofer Institute for Integrated Circuits IIS is one of Germany's most important research facilities for the development of microelectronic systems. Backed by many years of experience as a supplier of technology- and manufacturer-independent IC design technologies, we can fabricate small quantities of custom ASICs in addition to our all-round service from conceptual design to the launch of series production. The scientists in the Design Automation Division EAS in Dresden develop methods and tools to reliably design increasingly complex electronic and

heterogeneous systems. The result is an optimized and accelerated implementation of product requirements in integrated circuits, complex heterogeneous systems or devices.

The tools and methods developed are used advantageously in the design services offered. One essential claim applicable to all these activities is to close the gap between new manufacturing technologies and system design.

1 *SMART Sensor ASIC, designed with the »Intelligent IP Mixed Signal Design Flow«*

