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WE R&D.

Executive Summary

Motius GmbH

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Motius Silicon Capabilities

RISC-V system integration specialists who bridge the gap between application requirements and custom silicon.

We de-risk ASIC decisions through FPGA prototyping and support production with proven embedded systems expertise.

[View Case Studies](#)[Our Approach](#)[View Use Cases](#)

What Makes Us Different

We've Manufactured Our Own Chip

Successfully designed, taped-out, manufactured, and validated a custom chip through the complete ASIC lifecycle (Game Engine Chip, 2022-2024)

4 RISC-V Projects Proven

Experience with Andes, Synopsys, and Western Digital RISC-V cores across multiple FPGA platforms

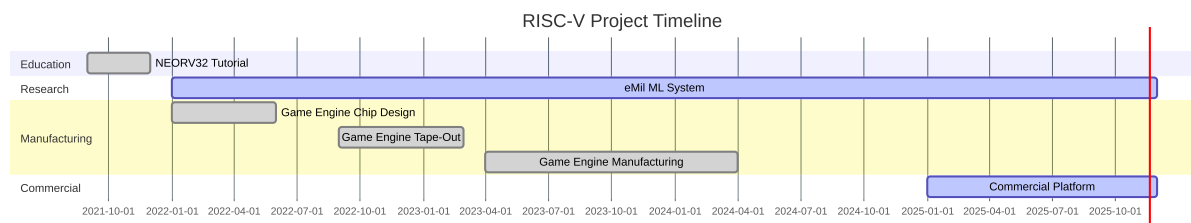
2M+ Units Shipped

Production-ready embedded systems expertise with CE, EMC, and IEC 61508 SIL2 certifications

German/EU Manufacturing Network

Established partnerships with Fraunhofer IIS, RoodMicrotec, Racyics, and major foundries

Our Silicon Journey



Track Record

Projects

- **50+** Embedded systems projects
- **10+** FPGA implementations
- **4** RISC-V integration projects
- **1** Custom chip manufactured
- **3** Production-certified devices

Technologies

- **3** RISC-V CPU cores integrated
- **3** Custom IP cores developed
- **3** AMD Xilinx FPGA families
- **40** Manufactured chips received
- **18-24** months real tape-out timeline

Certifications

- **2M+** Consumer electronics units shipped
- **CE/EMC** Multiple product certifications
- **IEC 61508 SIL2** Safety-critical systems
- **Automotive** Multiple OEM projects
- **Red Dot** Design award winner

Current Active Work



Commercial RISC-V Platform (2025)

Trade show demonstrator with dual RISC-V CPU integration (Andes + Synopsys ARC-V). Full peripheral ecosystem on AMD Xilinx Kintex-7 & Ultrascale+ FPGAs with automated synthesis workflows.



eMil ML System (2022-Today)

Government-funded research on ML optimization for RISC-V. Custom FFT accelerator for edge computing with Western Digital EH1 core. FPGA functionality phase ongoing.

Core Capabilities

Capability	Description
RISC-V CPU Integration	Integrate commercial RISC-V IP cores into FPGA platforms with validated functionality
Custom IP Development	Design application-specific IP modules (CRC, FFT, game engines) in HDL
FPGA Implementation	Target multiple AMD Xilinx families with optimized resource utilization
Peripheral Ecosystems	Integrate DDR, SRAM, UART, SPI, I ² C, GPIO, JTAG, AXI/Wishbone buses

ASIC Preparation	Prepare FPGA prototypes for tape-out with PDK compliance and design rules
Silicon Manufacturing	Coordinate foundry relationships, tape-out, and post-silicon validation
Production Integration	PCB design, firmware development, certification (CE, EMC, IEC 61508 SIL2)

Value Proposition

For Automotive & Industrial Companies

Sweet Spot: Mid-size manufacturers (€50M-500M revenue), 5,000-50,000 units/year

We help you:

- Evaluate if custom silicon makes business sense
- Prototype in FPGA to validate requirements
- De-risk ASIC decisions through proven reference platforms
- Partner with design houses for tape-out
- Handle production integration with certified embedded systems

For IP Providers & SoC Designers

We provide:

- Reference platform development for your RISC-V IP
- Customer demonstration and validation support
- Application expertise in automotive and industrial domains
- Integration services for end customers

Why Motius

Most semiconductor consultants have either: - FPGA experience only (no silicon manufacturing), **OR** - ASIC design experience (but not full lifecycle ownership)

Motius has proven end-to-end capability:

Requirements → FPGA Prototyping → Tape-Out → Manufactured Chips → Production Integration

This complete lifecycle experience, combined with 2M+ units shipped and safety certifications, positions us uniquely as the **application bridge** between customer needs and silicon reality.

Quick Facts

Founded	Motius GmbH, Munich, Germany
Focus	RISC-V system integration, FPGA-to-ASIC, production embedded systems
Industries	Automotive, Industrial Automation, Medical Devices, Smart Infrastructure
Technologies	RISC-V (Andes, Synopsys, WD), AMD Xilinx FPGAs, Open-source toolchains
Certifications	CE, EMC, IEC 61508 SIL2
Manufacturing	German/EU foundry network + open-source flows

Explore Our Silicon Projects

Detailed case studies of our RISC-V projects, from manufactured chips to commercial platforms

[→ Case Studies](#)

Learn How We Can Help

Our approach: services, capabilities, partnerships, and ASIC development blueprint

[→ Our Approach](#)