RZ Ecosystem Partner Solution
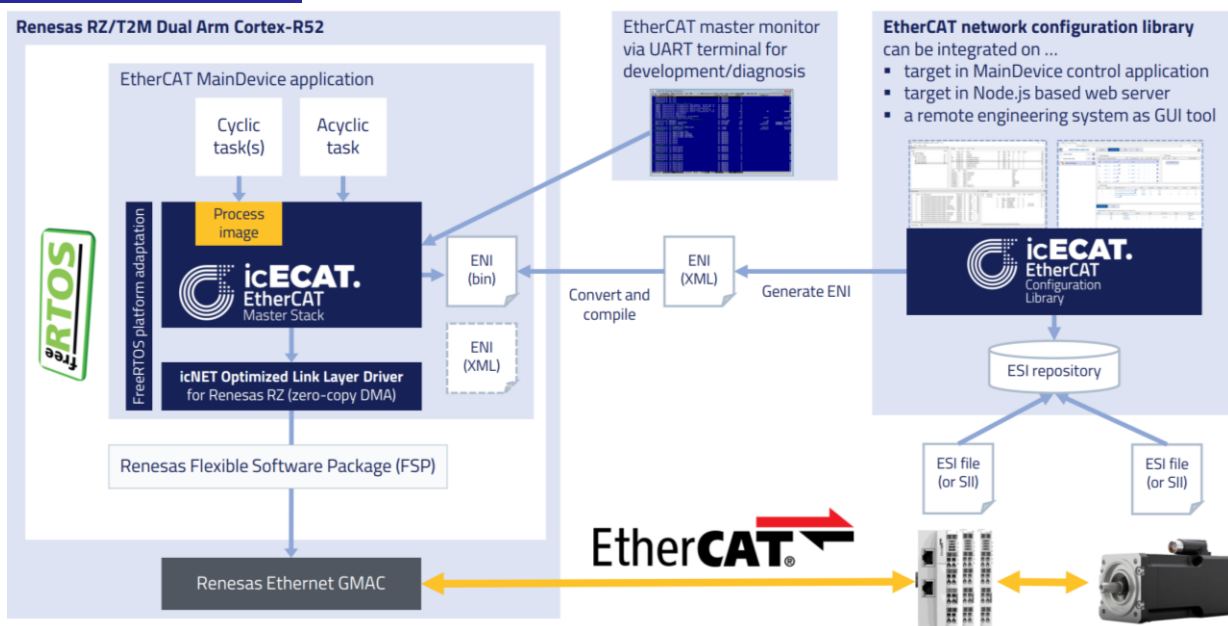# IBV EtherCAT MainDevice/Master

Solution Summary

The icECAT EtherCAT Master Stack library is a Software Development Kit (SDK) for developing EtherCAT MainDevice (master) systems. It includes platform support and an optimized link layer driver for Renesas RZ/T2M MPU device, enabling high-performance communication with minimal resource usage. IBV offers a project-based source code licensing without a runtime license fee.

Features/Benefits

- Feature set compliant to ETG.1500 EtherCAT Master Class A and Class B
- CoE, SoE, EoE, FoE, VoE, SDO Info Service
- Distributed Clocks (DC)
- Hot Connect (option)
- Cable redundancy (subset)
- Slave-to-slave communication
- Explicit Device ID
- Network configuration via ENI
- Tooling for embedded devices

Diagrams/Graphics

Target Markets and Applications

- Industrial automation, PLCs, CNCs
- Robotics
- Laser technology
- Test & measurement

www.ibv-augsburg.de/icecat
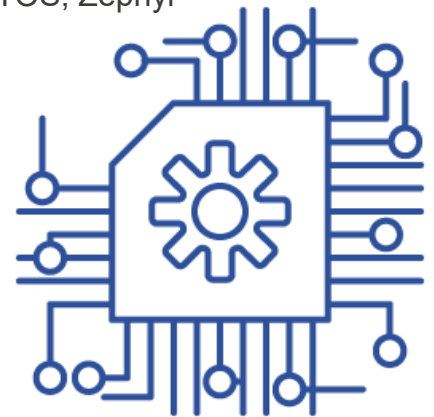
2025.07

Embedded Software Engineering by IBV
Custom software development for real-time and embedded applications

As a development partner, we designs and implements customer-specific software on modern microcontrollers and embedded processors. Our team of experts offers a wide range of experience to transform the requirements and challenges of your project into modular and robust future-proof software with efficiency.

Our technology know-how:
for Renesas products, Arm Cortex-A, Cortex-M and Cortex-R controllers:

- Embedded Operating Systems:
  Embedded Linux (Yocto, Buildroot, …), Xenomai, QNX, FreeRTOS, Zephyr

- Driver and BSP Development:
  Ethernet, Wi-Fi, Bluetooth, PCIe, USB, SPI, I²C, UART, CAN,
  SD card, eMMC, NOR, NAND, DMA, Graphics, boot loaders

- Industrial Ethernet / fieldbus integration:
  EtherCAT MainDevice and SubDevice, CAN, CANopen,
  TSN, OPC UA, PROFINET, Ethernet/IP, Modbus

- Embedded Security:
  Secure boot, certificate management, encryption,
  TPM, OP-TEE, secure firmware update

- Connectivity:
  Wi-Fi, Bluetooth, BLE, Ethernet, adaptation to cloud services like Microsoft Azure

Our services:

- Technology consulting for the selection of hardware and software platforms,
  also with consideration of real-time requirements

- Implementation of feasibility studies

- Software requirements analysis, software architectures and software design

- Porting of existing applications to other operating systems or a different hardware platform

- Development of complete embedded applications

Our software products and services for EtherCAT technology:

- icECAT EtherCAT Master Stack
- icECAT EtherCAT Configuration Library
- EtherCAT technology training

More information: https://www.ibv-augsburg.de