![Motorcortex logo]

MOTORCORTEX
Embedded Realtime Control Software for Robotics and Automation

The ease with which we use our phones and computers with their freedom to communicate, beautiful graphics and vast amounts of data we receive and transmit, and the availability of apps; all this we should expect in machine automation too. Motorcortex Embedded Machine Control Software does just that. It consists of **Motorcortex.Cloud**, a browser-based portal to manage your machine software, configuration and data and **Motorcortex.Embedded**, the App-based multi-axes control system that quickly makes your machine work.
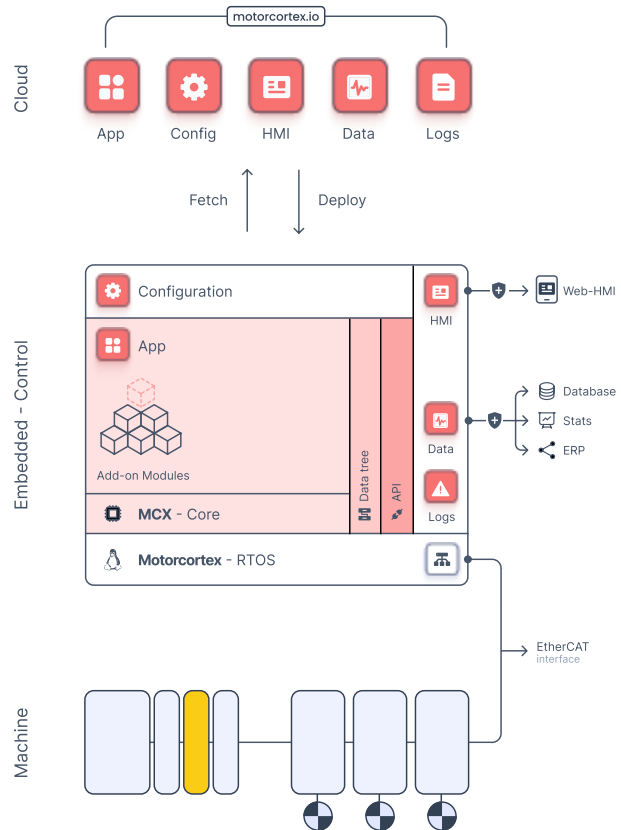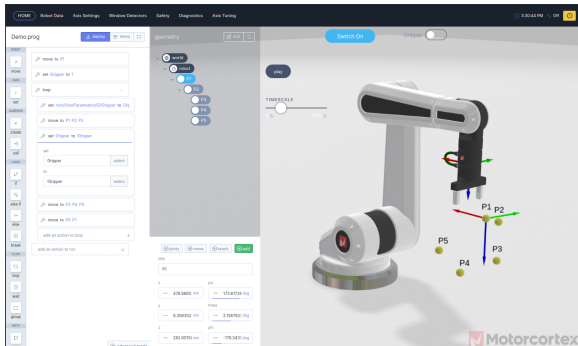
In automation, cost and time-to-market are directly related to the required amount of application-specific code. **Motorcortex.Embedded** is highly modular and uses ready-made Apps for (Mobile-)Robots and Production Machines that only need to be configured instead of developed. Apps and Modules can be stacked, to form a complete machine control software application. All the required functionality is already included and proven.

Motorcortex Apps come with a build-in Digital-Twin and automated testing examples to make develop- ment, testing and commissioning of the application much easier and less time consuming. Simulate your machine with the included default or customized Digital Twin for offline programming and debugging. For special use-cases software can easily be extended or modified, the validation scope therefore remains small.

If you choose to develop an application yourself, Motorcortex provides the Tools and Building-blocks that help you quickly build your custom embedded software.

The backbone of Motorcortex is the Real-Time Data-Tree that contains all software and machine data. The Data-Tree is securely accessible from a webbrowser and via open and free APIs. Data can securely be streamed with more than 500.000 datapoints every second, enabling new opportunities for data driven optimization and visualization. Motorcortex is already controlling machines and gathering data in high-end business suchs as aerospace, robotics, semiconductor, medical, production industry, entertainment and agriculture.

Motorcortex.Cloud All you need is a Browser. Use the motorcortex.io cloud portal to manage and store your machine control project apps, machine configurations, user interfaces and data. Purchase your Apps and Modules from the webstore and deploy them to your fleet of machines with a few clicks. Motorcortex.Cloud comes with a set of web-based tools to manage your machine projects, easily setup your machine configuration and configure your EtherCAT devices. Online diagnostics tools help to configure, collect, visualize and diagnose real-time machine data. Interactively create your own web-based user interface with the GUI builder. The GUI can be deployed to the embedded controller and can be securely accessed from a HMI, tablet or smartphone.

CONTROL SYSTEM	
operating system	Motorcortex MCX-RTOS, realtime Linux
update rate	1 kHz (up to 4 kHz)
development	cmake, CLion, MS-Coder, Simulink-Coder

HARDWARE CONNECTIVITY	
i/o	expandable via EtherCAT
drive protocols	SERCOS (SoE), CiA402 (CoE)
safety integration	FSoE or conventional (with digital i/o)
usb devices	IMUs, Joysticks, Gamepads

SOFTWARE CONNECTIVITY	
middleware	Motorcortex
messaging	publish/subscibe, request/reply
API	C++, JavaScript, Python, C#
security	TLS, end-to-end encryption
framework support	ROS, Node-RED, Matlab/Simulink
protocol support	Websockets, UDP, MQTT, OPC-UA
digital-twin	Hard-Realtime and EtherCAT-simulation

USER INTERFACE	
user permissions	users authentication via login screen
3D visualization	GLTF models (open standard)
customization	fully customizable Web-based user interface

For more information and a free trial visit **https://motorcortex.io/**

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