



MOTORCORTEX-AMR-APP

TURN-KEY MOTION CONTROL APP FOR YOUR AGV AND AMR



Motorcortex-AMR-App is a turn-key motion control software for Autonomous Mobile Robots (AMR) and Vehicles. The AMR-App provides the machine logic, vehicle kinematics, motion control, errorhandling and interfacing to hardware. Shorten your time-to-market and reduce software development time.

Fast EtherCAT communication gives you the freedom to connect many hardware devices and allows virtually unlimited expansion with i/o and additional axes. Integrate any Navigation System via the various APIs available.

All vehicle data is securely accessible from a webbrowser and via open APIs for all major programming languages. The data can be streamed to and from other applications and databases at thousands of samples per second. This enables new opportunities for data use such as AI, 3D visualization and data storage.

From your browser use the motorcortex.io portal to securely deploy the AMR-App to your fleet of Vehicles with a single click. Manage your machine configurations, configure your EtherCAT devices, collect, visualize and distribute data and simulate your AMRs including a Digital Twin for offline programming and debugging.

RECOMMENDED CONTROLLER HARDWARE

cpu architecture	4 Core Intel or ARM CPU
cpu frequency	1 GHz+
memory	2 Gb+
required disk space	4 Gb+
ethernet	2 x Gigabit Ethernet (1 x for EtherCAT)

CONTROL SYSTEM

operating system	Motorcortex MCX-RTOS, realtime Linux
update rate	1 kHz (typical, adjustable to cpu performance)
multicore support	yes
control modes	velocity control, position control
operation modes	automatic, manual control
navigation interface	UDP, OPC-UA, MQTT, ROS-Node
external axes	supported, velocity or position controlled
robot arm support	yes, stack with the Motorcortex-Robot-App
digital-twin	realtime physics built-in, EtherCAT simulation

HARDWARE CONNECTIVITY

industrial bus	EtherCAT
i/o	expandable via EtherCAT
tool-changing	yes, through EtherCAT Hot Connect
drive protocols	SERCOS (SoE), CiA402 (CoE)
safety integration	FSoE or conventional (with digital i/o)
usb devices	IMUs (Bosch, XSens), Joysticks/Gamepads

SOFTWARE CONNECTIVITY

middleware	Motorcortex
messaging	publish/subscribe, request/reply
API	C++, JavaScript, Python, C#
security	TLS, end-to-end encryption
framework support	ROS, Node-RED
protocol support	Websockets, UDP, MQTT, OPC-UA

USER INTERFACE

control dashboard	tablet with webbrowser
multitouch support	yes
number of clients	unlimited
user permissions	users authentication via logon screen
3D visualization	GLTF models (open standard)
customization	user interface fully customizable

AGV SOFTWARE FEATURES

agv kinematics	2-wheel differential, 2-wheel steering, 4-wheel steering, 4-wheel meccanum, tricycle, kiwi-drive
motion modes	velocity, position (target vehicle pose)
safety integration	FSoE or conventional; SLS, SOS, STO, SBC
user variables	unlimited, scalars or arrays
subprograms	yes, with arguments, object oriented
debug features	slow-motion, pause, command highlighting
data tracing	Motorcortex-DESK, python datalogger