



**CAPRA ROBOTICS®**  
[ONE ROBOT - MULTIPLE APPLICATIONS]

BRIDGING THE GAP BETWEEN  
INDOOR AND OUTDOOR LOGISTICS



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# CAPRA ROBOTICS®

## EMPOWERING YOU TO NAVIGATE THE FUTURE OF LOGISTICS

At **CAPRA ROBOTICS®**, we do not merely provide robots; we offer transformation. Our development journey has been marked by a commitment to innovation, a dedication to excellence, and a relentless pursuit of empowering businesses like yours to thrive in the ever-evolving landscape of logistics. It is not just about moving goods from point A to point B; it is about delivering excellence in a safe yet speedy and accurate manner.

In the ever-evolving landscape of logistics, where time is money, precision is paramount, and innovation is the key to staying ahead, you need flexible solutions with the functionality of high-level tech and the reliability of robust material handling equipment. That is where **CAPRA ROBOTICS®** comes in.

We have empowered industry-leading companies and organizations, such as Danish Crown, VELUX, Deutsche Telekom, and the U.S. Air Force to transform the way they handle logistics processes. Our work has been recognized by internationally renowned Odense Robotics as Robotics Company of the Year in 2022 and by T-Systems with a Bestform Award in 2023 in their IoT category.

We believe in the power of one – a single mobile robot platform designed to serve a multitude of applications. Our highly adaptable robots can be customized to fit a wide range of logistics applications and provide you with dependable mobility for everything from traditional production

logistics to logistics of food processing plants. Its versatile and modular design grants you limitless flexibility.

As you read through the following sections, we encourage you to envision the possibilities that lie ahead. Imagine a logistics operation where robots work seamlessly alongside your team, enhancing productivity and ensuring the highest levels of precision. Look beyond the confines of the shop floor, to an interconnected campus where your indoor and outdoor logistics operations are unified by highly automated solutions.

If you're ready to take your business to the next level with the best mobility on the market, scan the QR codes on the back to learn more and schedule a demo. Let us help you take the first step toward a more efficient and automated future. Together, we will redefine what is possible in logistics.



# INTERLOGISTICS

## *BRIDGING THE GAP BETWEEN INDOOR AND OUTDOOR LOGISTICS*

In the world of logistics, where precision and efficiency are the lifeblood of operations, **CAPRA** ROBOTICS® emerges as a transformative force in logistics. We understand that your business faces the daily challenge of uniting indoor and outdoor logistics operations across the entire facility. But what if we told you that these logistics pains could be turned into gains?

Companies invest heavily in optimizing their intralogistics operations but hit a bottleneck when moving goods across the gate. These processes leave something to be desired when companies are still bound by tedious manual processes which leads to errors, delays, and increased operational costs. We are here to offer you the solution to this pain.



# UNIFY INDOOR & OUTDOOR OPERATIONS

By combining state-of-the-art satellite-based navigation with high-grade proximity sensors, **CAPRA ROBOTICS®** offers a system to unify your indoor and outdoor operations. Our solution bridges this gap by enabling you to move goods inside, outside, and between manufacturing buildings – with the same solution.



## SEAMLESS INTEGRATION

Our solution smoothly optimizes your current workflows and sets your logistics system up for success. The mobile robot is seamlessly integrated into existing operations, and transport orders to the robot are easily issued from a central management system – whether it is a WMS, MES, or ERP system, and handled by the CAPRA FLEET MANAGER.

## UP TO 500KG LOADS

Packing sizes range from SLCs 600x400mm to pallet footprints of 1200x1000mm and include racks and customer-specific packaging. Our solution supports top deck loads of up to 100 kg and carts with a load of up to 500 kg for high-priority logistics tasks.

Our robots are precision-driven, tirelessly handling the movement of goods across your facility, ensuring accurate inventory management and swift order fulfillment. By implementing our robots, you can streamline your logistics operations, reduce human errors, and boost productivity.

Start the journey of realizing your logistics potential, today.

# FOOD PROCESSING LOGISTICS

## REVOLUTIONIZING INTERNAL TRANSPORTATION IN FOOD PROCESSING

In the world of food processing, safety and efficiency are paramount. **CAPRA** ROBOTICS® is here to revolutionize your food processing logistics, taking your operations to new heights. Maintain the highest quality standards while optimizing logistics in your food production plants.

### FIT FOR ANY ENVIRONMENT

Food processing areas such as meat manufacturing pose a demanding environment for conventional indoor mobile robots. Slippery and uneven floors, drainage systems, moisture, and cold temperatures are among the most inhibiting challenges, which makes logistics processes in this environment hard to automate.

Our mobile robot and its navigation system have an IP65 rating and are designed to operate in varying climate conditions and effortlessly navigate in rain and uneven terrain. As a result, our robots are fit to transport goods safely and efficiently through even the most challenging and dynamic environments.





## AUTOMATING THE UNAUTOMATABLE

The capabilities and level of adaptability our robots bring to the table are unmatched. We're incredibly proud to be the sole provider capable of seamlessly executing these high-priority tasks.

The CAPRA has the capacity to revolutionize internal transportation systems by tackling tasks previously deemed unautomatable. This solution underscores our commitment to pushing boundaries and redefining possibilities in robotics.

## IMPROVED ERGONOMICS

Food processing often involves handling heavy raw materials and finished products. Our mobile robots assist workers by taking on the physically demanding task of moving these heavy loads. This reduces the risk of strains and injuries among employees, contributing to better ergonomics and improved health.

Incorporate automation to keep up with customer demand without sacrificing associate safety.

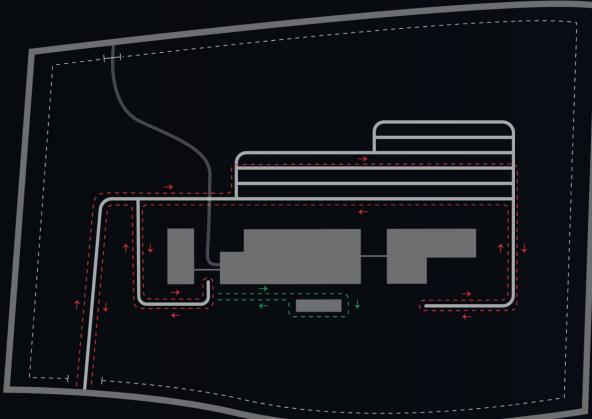
# CAMPUS LOGISTICS

## DEPENDABLE LOGISTICS FOR YOUR EVERY MOVE

Companies with multiple production buildings often move components, tools, and samples around the facility, but cost-effective transportation of those goods provides a challenge. Manually handling materials and equipment across a vast campus is time-consuming, leading to inefficiencies and resource wastage. To achieve efficient digitization and reduce manual labor in production processes, it is imperative to establish interconnected and automated value chains that span from start to finish.

## CONNECT EVERY CORNER OF YOUR FACILITY

**CAPRA ROBOTICS®** offers a groundbreaking solution to turn your logistical challenges into opportunities for growth. The Capra Mobile Robot offers a safety-compliant state-of-the-art navigation system that allows for driving between production sections with ease. This specific CAPRA solution is intended for pre-planned routes with low to no deviations.



## REAL-TIME TRACKING

Our solution offers the possibility to communicate with your company's ERP, WMS, or MES systems to ensure that the right products are delivered to the right place at the right time. The system tells you the exact location of the goods and can be used to locate missing goods or components. With real-time tracking and reporting, you gain unparalleled visibility into your operations. If your company has KPIs for increased productivity, increased ergonomics, and improved safety, consider using the CAPRA for your routine tasks.

Utilizing the CAPRA for Campus Logistics will support your transition towards more strategic, efficient, and cost-saving operations.

# EQUIPMENT & SERVICES

## THE CAPRA ECOSYSTEM

At **CAPRA ROBOTICS®**, we want to exceed merely providing you with exceptional robots. We want to provide you with an ecosystem of equipment and services that amplify your experience. We understand that adopting new technology is not just about the product; it's about the solution. That's why our additional equipment and service offerings are designed to be your tools on the road to excellence.

## WIRELESS CHARGING

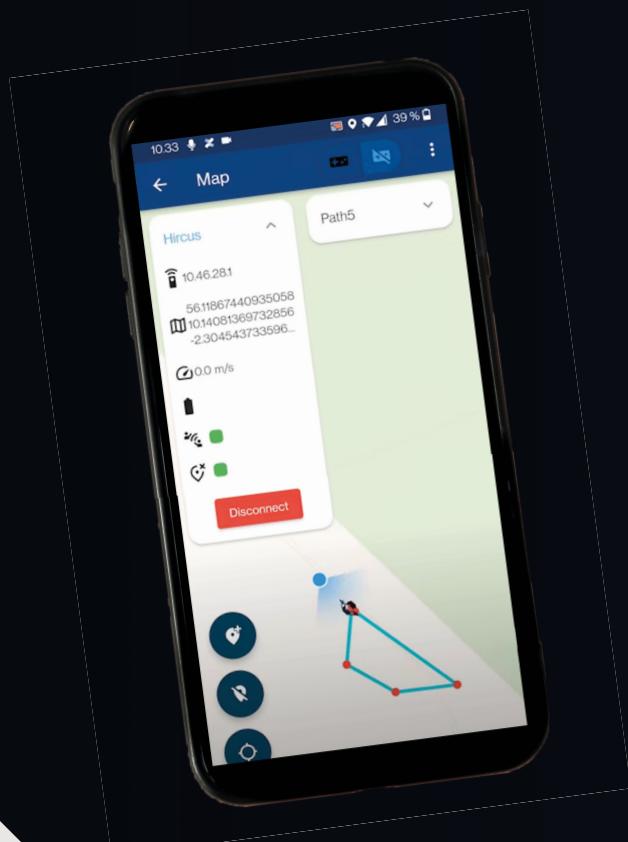
**Wirelessly Empowering Automation:** With the CAPRA CHARGING STATION, you can charge your robots automatically without any human intervention. Wave goodbye to days of manual charging that disrupts your logistics workflow. It's a revolution in convenience and efficiency, eliminating downtime and ensuring that your robots are always powered up and ready to tackle the next mission. It's not just about charging; it's about smart charging.



## THE CAPRA LINK

**One Size Fits All:** Designed specifically for the CAPRA mobile robot the CAPRA LINK – a universal trailer mount for various attachments – embodies this spirit of versatility. Whether you're transporting goods, materials, or equipment, this universal mount ensures that your mobile robots can effortlessly navigate with trailer solutions.

**Customizable Functionality:** The adaptability of the CAPRA LINK extends beyond compatibility. It can be customized to meet your specific requirements, whether you need automated trailer loading, unloading, or even additional cargo handling capabilities. It's a game-changer for industries that rely on trailer-based logistics.



## CAPRA COMMANDER APP

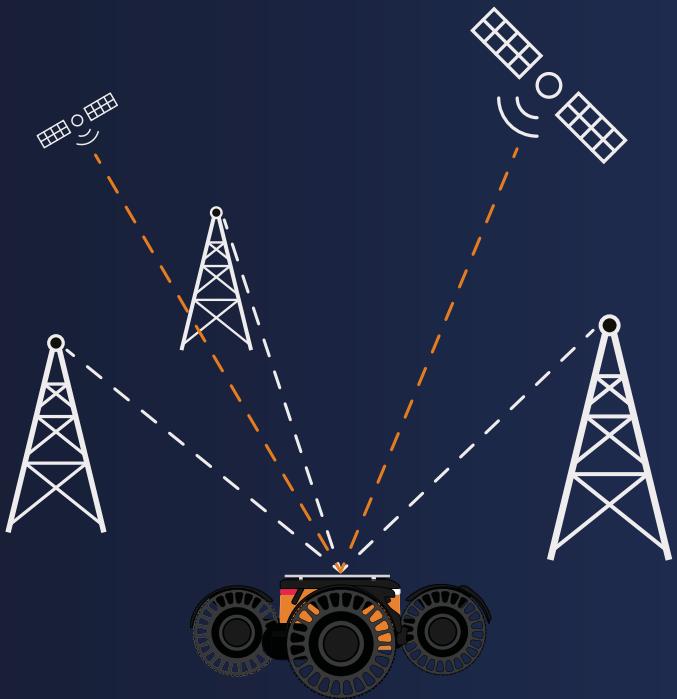
**User-Friendly Control:** We developed the CAPRA COMMANDER APP for you to speedily get started using our mobile robots. Regardless of experience, this intuitive app allows you to effortlessly demonstrate the capabilities of our robots. It's the perfect tool to easily showcase their agility and precision to your team and stakeholders.

**A Preview of Possibilities:** With the CAPRA COMMANDER APP, you can initiate mock missions, simulate real-world scenarios, and explore the various ways in which our robots can elevate your logistics operations. It's a glimpse into the future of your business, where automation, efficiency, and innovation merge.

# CONNECTIVITY AND PRECISE POSITIONING

**Seamless Connectivity:** We offer our customers state-of-the-art connectivity that ensure they are always receiving correction data via NTRIP. This connectivity paves the way for real-time data exchange, allowing you to monitor and manage your robots from anywhere in the world. It's the assurance that your logistics operations are always on track.

**Accuracy Unlocked:** Our precise positioning subscription offers unlimited RTK corrections for 4G NTRIP Client which enables your robots to navigate with unparalleled accuracy. This precision ensures that the robots do not deviate from the chosen path, thereby minimizing errors, and maximizing efficiency. It's a testament to our commitment to precision in every aspect of our solutions.



## SERVICE AND SUPPORT

**Unwavering Support:** Our dedicated support team is available to assist you every step of the way. Whether it's initial setup, troubleshooting, or ongoing maintenance, we are here to ensure that your mobile robot operates at its peak performance.

**Tailored Service Packages:** We offer customizable service packages to cater to your unique needs. Whether you require regular maintenance, software updates, or training in the product, our service packages can be tailored to fit your specific requirements. With **CAPRA ROBOTICS®**, you are not just getting a robot; you're getting a comprehensive solution.

# CAPRA FLEET MANAGER

## SCALABLE INTEROPERABILITY

Tasks generated in your central management system (WMS/MES/ERP) can be easily communicated to the robot via the VDA5050-compliant CAPRA FLEET MANAGER interface.

REST APIs are platform independent, meaning they can be used on various devices and operating systems. This flexibility is essential when dealing with robots that might have different hardware or software configurations.

Effortlessly control a fleet of up to +50 AMRs and/or AGVs.



ERP/WMS/MES

REST API

Capra Fleet Manager

Order Handling

Route Planning

Service Module

Supervisor

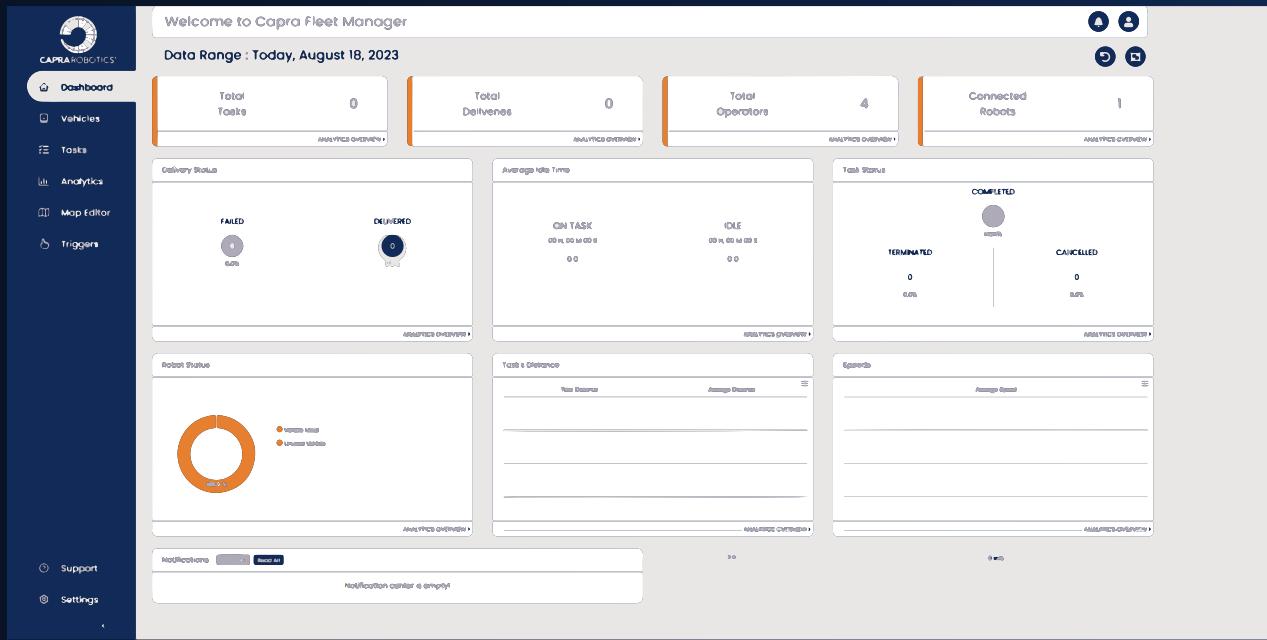
Dispatcher

Monitor

Secure Internet

Remote Console

IoT Communication



The CAPRA FLEET MANAGER controls the overall operation and performance of your robots, receives orders from external sources, and monitors the progress and status of its subsystems.

You can intuitively dispatch robots by the press of a physical or virtual button at the production line.

We employ industry-leading encryption protocols, and AWS Greengrass manages our security infrastructure. All HTTP connections are secured with SSL and the passwords are encrypted using a PBKDF2 algorithm with a SHA256 hash.

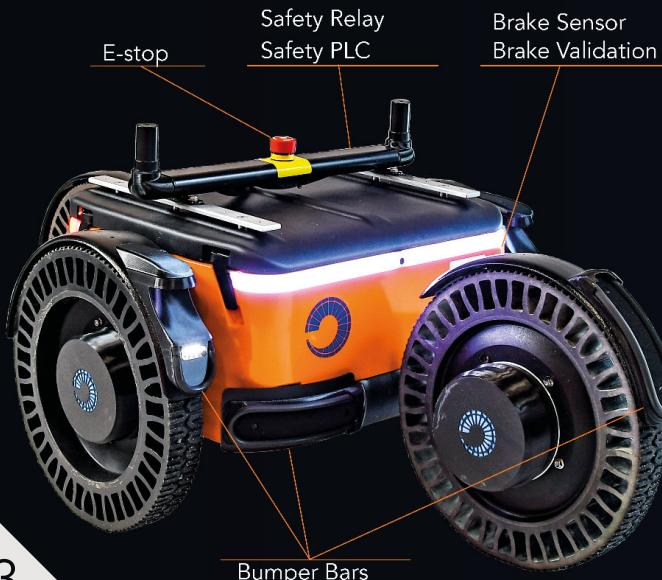
Our system allows for interaction with several external systems, such as, gate controls, light controls, and crossing signals.

# SAFETY & CYBER SECURITY

## PROTECTING YOUR ASSETS IN AN INTERCONNECTED WORLD

In today's interconnected world, cybersecurity and safety are paramount concerns for automated logistic flows. Maintaining an impenetrable safety system is our top priority, and the CAPRA is designed for safety and is thoroughly tested before shipment.

We have gone to great lengths to ensure that our solution is safe for use in busy industrial environments, with multiple safety protocols and features built into the design. The robot features state-of-the-art SIL2-certified radar sensors, the most dependable safety sensor for combined indoor and outdoor driving. The radar works in any weather and lighting conditions, can measure several objects simultaneously and have a response time of less than 100ms for optimal safety. Our solution is certified DS/EN ISO 3691-4:2020 and R15.08-1-2020 compliant at Performance Level D.



## CYBER SECURITY

Our mobile robots operate in a dynamic and diverse range of environments, including highly sensitive locations. Therefore, they are equipped with the latest firmware and software, which are diligently updated to combat emerging cyber threats with the latest encryption, communication, and multi-factor authentication.

We ensure the security of our operations through cutting-edge technologies and industry-leading encryption protocols, including:

1. Data security: Our systems feature data integrity checks, dynamic provisioning and revocation of permissions, and a zero-trust architecture to prevent unauthorized access.
2. Communication security: We use secure communication protocols like TLS, x509 certificates, and secure MQTT to protect data transfer. AWS Greengrass manages our security infrastructure.
3. Secure data exchange: We employ the DDS security standard and Vault for secure information transfer and storage of sensitive data such as authentication credentials.

With **CAPRA ROBOTICS®**, you can rest assured that your logistics processes are fortified against both physical and digital vulnerabilities.

# SPECIFICATIONS

DIMENSIONS & WEIGHT		INTERFACE & COMMUNICATION	
External Dimensions (LxWxH)	1106x600x373 mm	External Communication	4G router with Dual-band Wi-Fi (G/N/B) and Dual-SIM
Wheel Diameter	326 mm	I/O	M12 Ethernet connector
Clearance Height	126 mm		M12 Battery power (10A E-stop, 10A Continuous)
Weight	50 kg (with 2 batteries)	Manual Steering	Remote Control
ENVIRONMENT		EFFECT	
Operational Temperature Range	-20°C to +50°C*	Battery Type	Li-NMC
IP Rating	IP 65	Battery Capacity	Up to 4 units of 25.9V, 20 Ah each
Usage	Indoor & Outdoor	Operating Time	Up to +10 hours (with 4 batteries)
		Driving Range	Up to +50 km (with 4 batteries)**
		Charging Time	2 hours***
SPEED & PERFORMANCE		SAFETY	
Maximal Speed	6 km/h	Collision Avoidance	2 pcs. PLd-certified Radar Sensors
Turning Radius	465 mm	Safety Functions	4 safety functions according to ISO 13849-1 <ul style="list-style-type: none"><li>Brake validation</li><li>Bumper bars</li><li>Detection of manually triggered brake</li><li>Emergency stop</li></ul>
Chassis	4-wheel robot frame		
Motor Type	4 pcs. Hub motor of 250W each		
Payload Capacity	Up to 500 kg		

\* Lower than -10°C requires additional heating element

\*\* Depending on surface, incline, and payload

\*\*\* With wireless charger



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