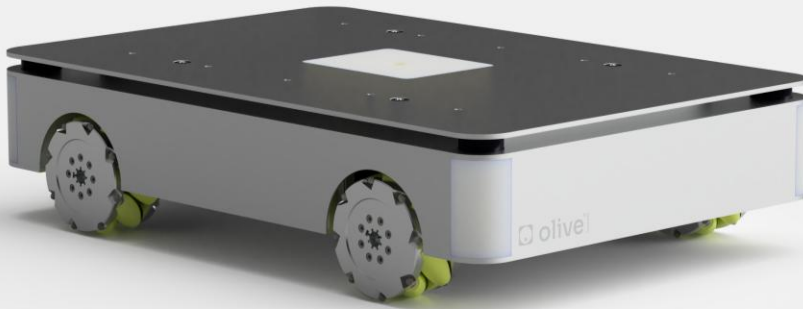




olixBot™ ANT1

Mobile Robot Platform (AMR)

Holonomic Drive | ROS 2 Native | 60 kg Payload | 2.0 m/s Speed | Nav 2 | SLAM



AMR R&D

SLAM & mapping

Sensor fusion

Indoor logistics

Teleoperation



Technical Document No. 1777726097 | SKU# OLVX-A1-OMNI-NAV-001 | Revision V0.3 - Apr 2026

Olive Robotics GmbH

Daimlerstrasse 7, 85521 Ottobrunn, Germany



© 2026 Olive Robotics GmbH - All rights reserved.

www.olive-robotics.com
contact@olive-robotics.com

Platform Overview

Compact form factor. Sensor-rich. ROS-native by design.

What ANT1 is

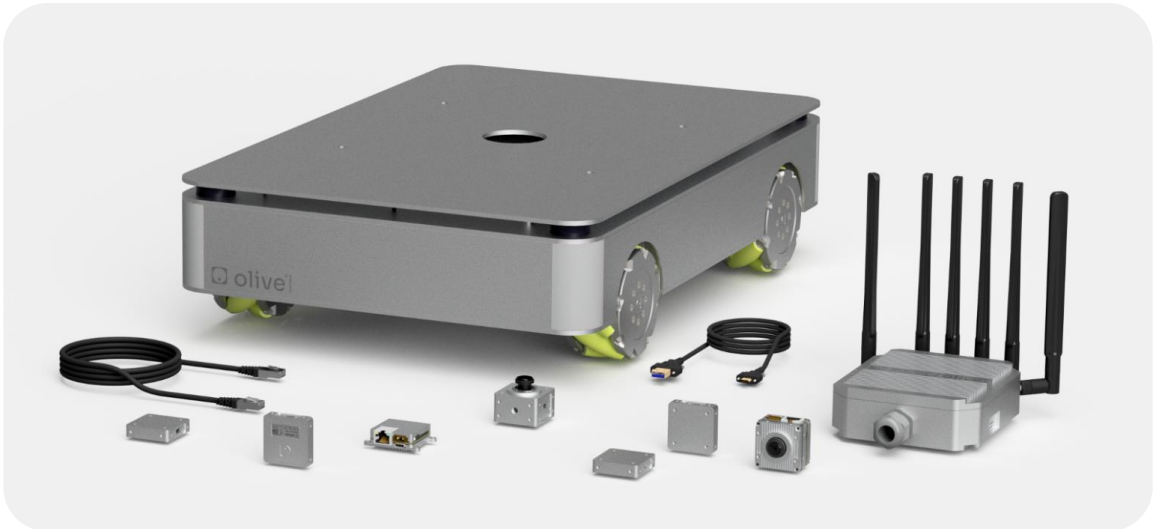
ANT1 is a low-profile robotic base for teams that need fast integration without giving up on mechanical access, distributed sensing, and reproducible software bring-up.

Why ANT1 matters

Holonomic motion, ROS 2 native middleware, a 24 V LiFePO4 subsystem and corner perception modules give a compact platform ready for autonomy research, indoor logistics and GNSS-denied environments.

Integrated architecture

Embedded compute and Linux stack, four drive corners, modular sensor nodes, hard E-stop, serviceable front I/O, and accessory power rails for additional perception or payload hardware.



Design priorities

1. Clean mechanical packaging for payloads and front service access
2. Deterministic ROS 2 bring-up without driver sprawl
3. Redundant perception around the chassis perimeter
4. Safe power distribution for onboard compute and accessories
5. Clear path from lab prototype to customer demo platform

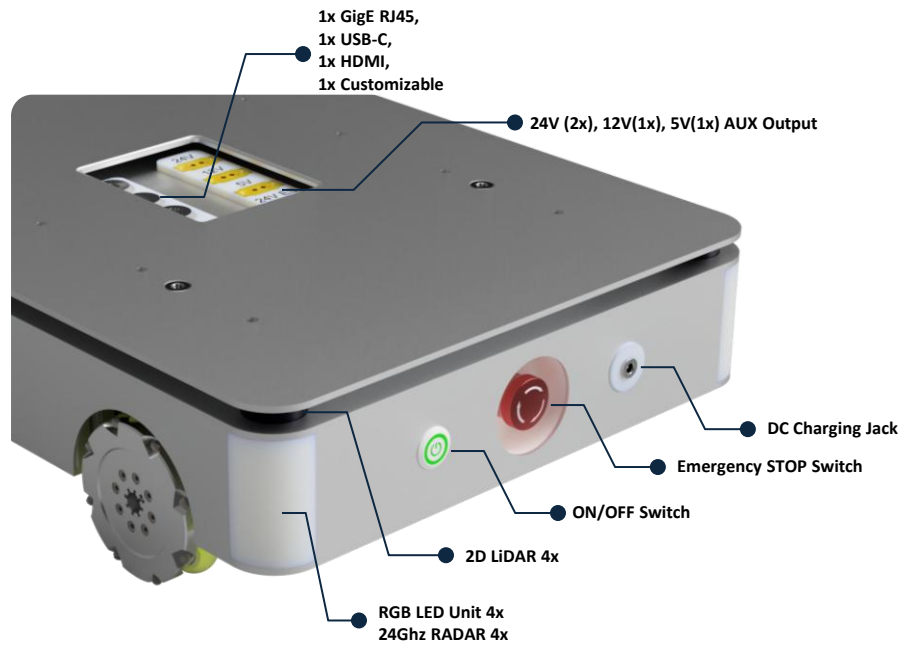
Key customer-facing positioning

ANT1 is best understood as a configurable base platform rather than a fixed one-BOM robot. The specifications listed below target a standard indoor holonomic configuration; final mass, compute and accessory mix remain configuration-dependent.

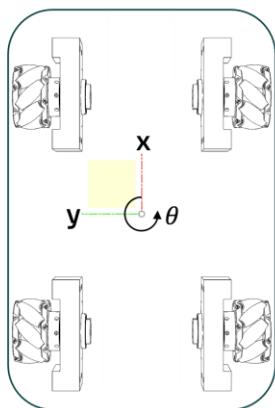
ANT1 Versions

Feature	Core	Pro	Ultra
Omnidirectional Base	✓	✓	✓
ROS2 Teleoperation	✓	✓	✓
LiDAR/Radar System	—	✓	✓
Localization / Navigation Stack	—	—	✓
Fleet Management System	—	—	✓

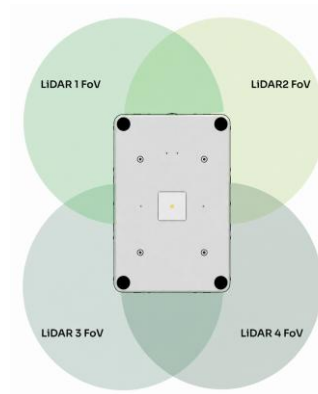
Interface and Sensor Overview



Infinite motion & Zero Blind Spots



Full x-y- θ mobility through its precision omni-wheel



360° Awareness with 4 LiDAR's

Software Integration Stack



ANT1 is built on native ROS 2 with Nav2-based autonomous navigation, with support for integration into Open-RMF fleet management system.

Product Details

1. Product Overview

The olixBot™ ANT1 is a compact, high-payload, ROS-native autonomous mobile robot designed for industrial automation, research, and advanced robotics development. It combines holonomic omnidirectional mobility, native ROS 2 / DDS communication, and a modular sensor architecture to enable rapid deployment of autonomous navigation, SLAM, and AI-based perception systems. ANT1 is optimized for indoor and semi-structured environments, offering precise motion control, deterministic real-time behavior, and seamless integration into modern robotics software stacks.

2. Key Features

- Holonomic 4-wheel omnidirectional drive (X-Y-θ)
- Native ROS 2 & DDS integration (no external drivers required / open source)
- Up to **60 kg payload** in compact form factor
- Integrated **emergency stop & software controlled safety systems**
- Multi-sensor ready: LiDAR, RADAR, Camera, IMU, Encoders
- Designed for **Nav2, SLAM, Open-RMF**
- Optional wireless charging & perception extensions (available soon)



3. System Information

Item	Description
Product Name	oliveBot™ ANT1
Internal Former Name	Gisela Base Robot
Product Type	Autonomous Mobile Robot (AMR) Platform
Manufacturer	Olive Robotics GmbH
Country of Origin	Germany
Intended Use	Industrial automation, R&D, autonomous navigation, perception research
Software Framework	ROS 2 (DDS-native)

4. Platform Specifications

- Mechanical

Parameter	Value
Dimensions (L x W x H)	600 x 400 x 115 mm
Platform weight (without payload)	< 16-24kg, configuration dependent
IP Rating	IP54
Operating Temperature	-10° - 50°C
Payload Capacity	60kg nominal / up to 80kg max
Ground clearance	≥ 50mm
Chassis material	Aluminum frame
Mounting Interface	T-slot aluminum rails
Max inclination	±5°
Operating surface	Indoor / industrial floors

- System and Electrical

Battery	LiFePO ₄ , 25V, 384 Wh
Charger	29.2V, 10A; 135 x 90 x 50 mm (L xW xH); 0.7 kg;
Up time	6 - 10h typical runtime (configuration dependent)
Charging Time	~2hr; Fast Charging
Aux outputs	2x24V, 1x12V, 1x5V (≤ 6A each)
I/O	GigE RJ45, USB-C, HDMI, Customizable (e.g. RJ45, Serial, CAN, USB)
Safety	E-stop, over-discharge protection

- Locomotion and Drive System

Topology	4x holonomic omni-wheel
Wheel diameter / width	100mm / 54mm
Motors	BLDC brushless gear (4x10Nm, 110KV)
Max Speed (rated)	Up to 2.0 m/s
Max Speed (theoretical)	2.12 m/s
Software Stack	ROS2 + DDS, WebUI, OTA, Nav2 , OpenRMF Adapter

5. Sensor Specifications

- Lidar

Parameter	Value
Output Data Rate	Up to 10 Hz
Ranging Scope	0.03 – 25m
Ranging Accuracy	±15mm@0.03m-2m, STD 5mm ±20mm@2m-8m, STD 15mm ±30mm@>8m, STD 25mm
Angular Resolution	0.167°@10hz -> ~21600 Datapoints per Second
Operating Temperature	-10° to +50°
Ambient light interference	Up to 60Klux
Wavelength	895nm~905nm (Typ 905nm)
Particularity	Glass wall detection

- Radar

Sensor Type	24 GHz FMCW milimeter-wave radar module
Frequency Band	24GHz ISM band
Output Data Rate	
Range	Up to 6m
Operating Temperature	-10° to +50°C
Distance Resolution	0.75m
Detection Angle / Coverage	± 60°
Particularity	Person Detection

- IMU

Sensor Type	6D IMU (3-axis accelerometer, 3-axis gyroscope)
Output Rate	Up to 1000 Hz
Operating Temperature	-40°C to +85°C
Orientation Accuracy	± 3° pitch /roll, ± 5° yaw
Range	Accel: ±2 g, ±4 g, ±8 g, ±16 g Gyro: ±16 dps to ±2048 dps
Noise Density	Accel: 200 µg/√Hz Gyro: 15 mdps/√Hz

- Camera

Sensor Type	5MP HD Camera Module
Interface	USB 2.0
Operating Temperature	-20° to + 70°C
Resolution	5 Megapixels
Maximum Resolution	2592 × 1944
Pixel Size	1.12 μm × 1.12 μm
Field of View	76°
Focus	Autofocus
Focus Distance	60cm
Object Distance	15 – 150cm
Frame Rates (MJPG)	640 × 480 @ 30 fps; 1600 × 1200 @ 30 fps; 1920 × 1080 @ 30 fps; 2592 × 1944 @ 30 fps
Frame Rate (YUV)	640 × 480 @ 30 fps; 1600 × 1200 @ 15 fps; 1920 × 1080 @ 5 fps; 2592 × 1944 @ 5 fps
Effective Focal Length	1.79mm
Microphone	Integrated Microphone

6. ROS 2 Native Messages

All topics are in the namespace of /olive/olixAnt1/id001/...

- Robot Control

Topic/Service Name	Type	Description
/cmd_vel	geometry_msgs/msg/Twist	Drive the Robot via Velocity
/joy	sensor_msgs/msg/Joy	Joystick input data

- Sensor Data

/odom	nav_msgs/msg/Odometry	Get Robot estimated pose
/battery	sensor_msgs/msg/BatteryState	Get Battery Status
/led1/rgb - /led4/rgb	stds_msgs/msg/ColorRGBA	Publish current RGB Color State
/scan	sensor_msgs/msg/LaserScan	Merged Scan of all 4 LiDARs
/scan1 - /scan4	sensor_msgs/msg/LaserScan	Scan of each LiDAR
/radar1 - /radar4	sensor_msgs/msg/PointCloud	Radar Data of each Radar
/tf	tf2_msgs/msg/TFMessage	Publish dynamic coordinate frames
/tf_static	tf2_msgs/msg/TFMessage	Publish static coordinate frames

- Waypoint Server

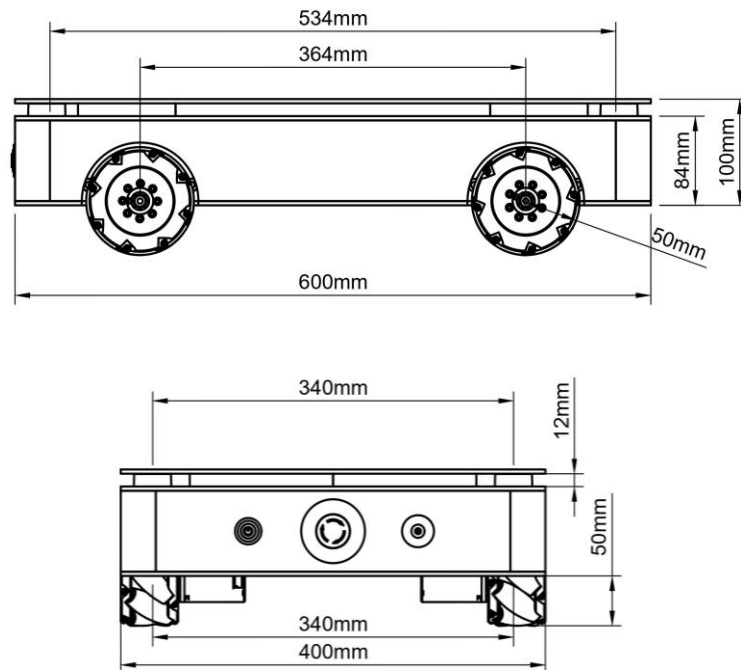
All service interfaces has prefix: `waypoint_server_interfaces/`

<code>/waypoints</code>	visualization_msgs/msg/MarkerArray	Waypoint Visualization in Rviz2
<code>/save_waypoint</code>	srv/SaveWaypoint	Service to save a waypoint
<code>/save_waypoint_pose</code>	srv/SaveWaypointPose	Service to save current ANT1 pose as waypoint
<code>/list_waypoints</code>	srv/ListWaypoints	Service to list all available waypoints
<code>/move_to_waypoint</code>	srv/MoveToWaypoint	Service to move to a saved waypoint
<code>/delete_waypoint</code>	srv/DeleteWaypoint	Service to delete a waypoint

- Mapping and Navigation

We are using the default Nav2 Mapping and Navigation Topics and Services

5. Physical Dimensions





Olive Robotics GmbH

Daimlerstrasse 7, 85521 Ottobrunn, Germany

www.olive-robotics.com

contact@olive-robotics.com

Technical Document No. 1777726097 | SKU# OL VX-A1-OMNI-NAV-001 | Revision V0.3 - Apr 2026

Disclaimer - This document and the information contained herein are provided by Olive Robotics GmbH ("Olive Robotics") for informational purposes only. While every effort has been made to ensure the accuracy and reliability of the content at the time of publication, all information is provided "as is", without warranties of any kind, either express or implied, including but not limited to warranties of merchantability, fitness for a particular purpose, non-infringement, or accuracy. No representation is made, and no liability is assumed, for the completeness, accuracy, or reliability of the information, specifications, figures, or performance characteristics described herein. Users are solely responsible for evaluating the suitability of the information and the products described for their intended use. Olive Robotics reserves the right to modify, correct, enhance, or otherwise amend its products, specifications, documentation, and this publication at any time and without prior notice. This document supersedes all prior documentation relating to the subject matter contained herein. Use of any Olive Robotics product must comply with all applicable laws, standards, and regulations, and is subject to the terms and conditions of sale and/or licensing in effect at the time of purchase or use. For the latest version of this document or for additional product support, please visit www.olive-robotics.com or contact an authorized representative of Olive Robotics GmbH.