Versatile Robotic Platform

YGGY-540

Public Spaces & Industry

- Industrial Standards & Quality
- 100 kg Payload
- Navigation in Crowded spaces
- 3D & AI Technology
- Ultra-Modular
- High Performance, Cost-Effective



Designed & made in France

Introduction

YGGY-540 is a versatile robotic chassis for indoor robots, integrating mapping, localization, navigation, obstacle avoidance and automatic return to the charging station.

A next-generation platform thanks to:

- Advanced 3D obstacle detection
- Real-time adaptive intelligence
- Ultra-simple maintenance: key components can be replaced quickly using only a screwdriver
- The ability to operate as part of a synchronized robot fleet



Key benefits



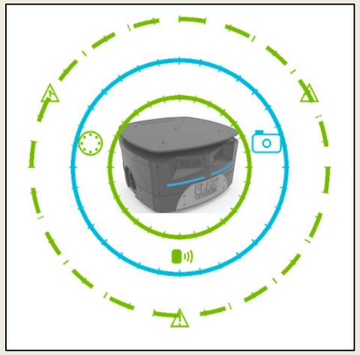
Service availability close to 100%

Fast, easy maintenance. Each key robot component can be replaced by the customer in under 3 minutes.



Quality & service life

Major components come from renowned manufacturers and are recognized as among the most durable on the market.



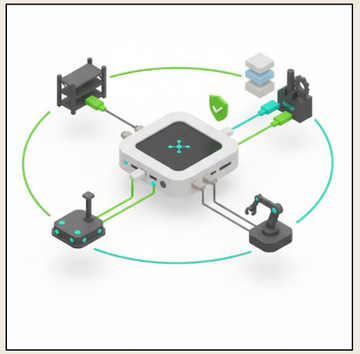
Safety beyond the standards

Triple safety level based on a multi-sensor system and 3 detection stages



Enhanced ROS2 Navigation

Accurate autonomous navigation with 3D obstacle avoidance through data fusion



Powerful fleet manager

Manage a heterogeneous fleet of robots and connect to existing management tools



Outstanding ROI

YGGY-540 delivers unmatched value for money in terms of quality and performance..

Advanced capabilities

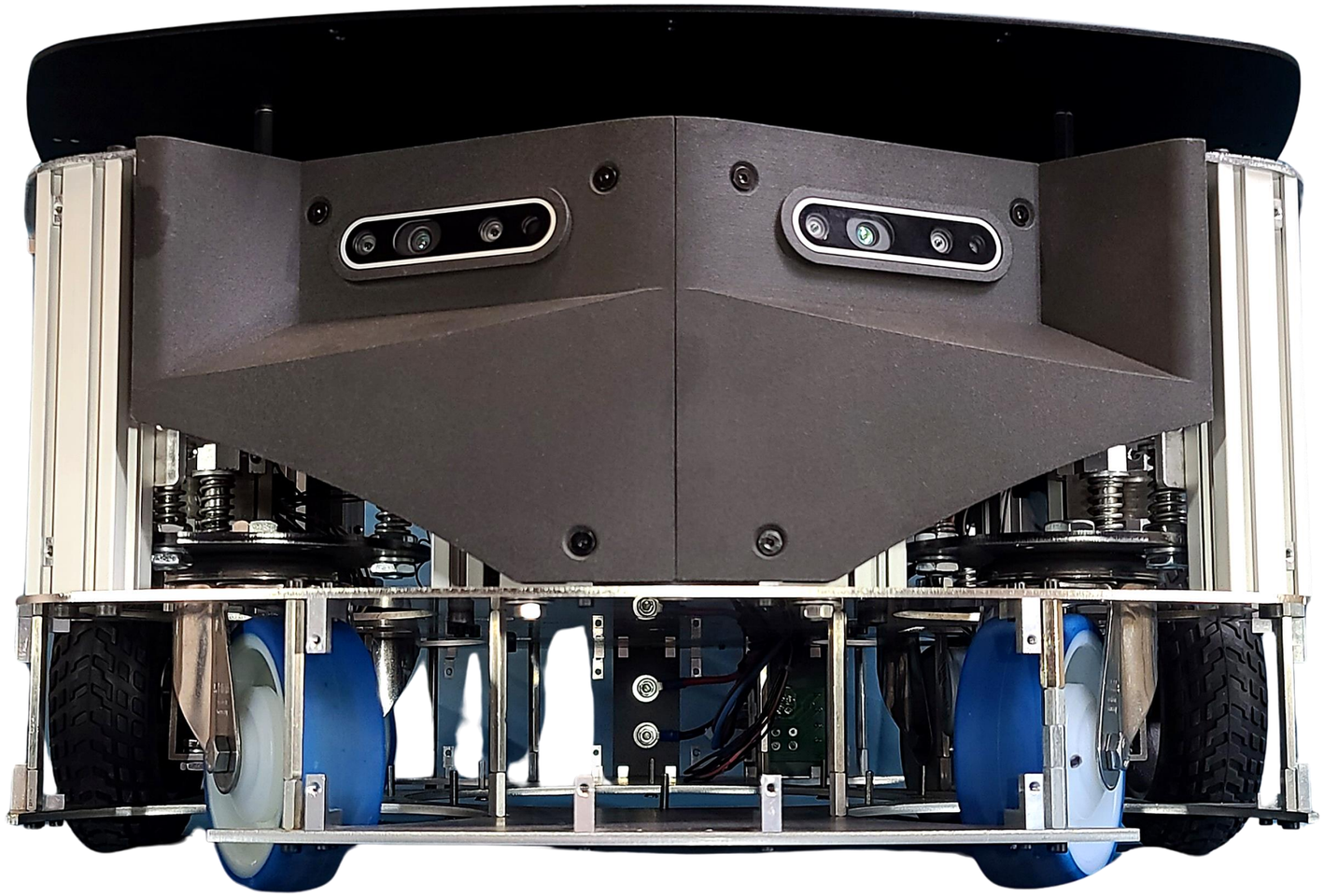
Precision, agility and intelligence

Centimetre-level alignment accuracy
Perfect positioning and alignment to fixed points thanks to onboard vision.

Agile navigation
AI navigation for smooth travel through narrow and confined spaces.
Handles highly dynamic environments

Smart traffic management
Real-time coordination between multiple robots for collision-free crossings and routes optimizing delivery times.

Plug & Play: fast and easy deployment
Tablet with intuitive.



High-Performance Navigation

YGGY-540 is built on ROS2
Its ROS2 localization and navigation system has been enhanced by Ipsum Tek to deliver state-of-the-art, highly reliable path-planning capabilities.

It can notably switch between an industrial mode, where speed and performance are critical, and a social mode, allowing it to operate safely in crowded environments.

In the latter case, it prioritizes safety in spaces with many moving obstacles.



Quality at Every Level

Li-ion Removable Battery
For 24/7 operation.
By Batteries-Prod (France)

Automatic charging
Docking / charging station

Scanning laser
30 m long range SLAMTEC system.
Optional :
SICK safety LiDAR (Germany).



Comprehensive, fully documented API
Easy integration with dedicated support

Robust, high-grip drive wheels
with cast aluminum rims and rubber tread

User panel
Access to electronic connections

Brushless drive
By NANOTEC (Germany)

3D cameras
3D obstacle detection
By Intel (USA)

High-load capacity wheels
By Blickle (Germany)

Shock absorbers on all 6 wheels
Optional : for carrying fragile item

Modularity

YGGY-540 is supplied in a minimal but yet fully functional configuration, providing a high-performance development platform at the best possible price.

Wide range of options can be added during the integration step :

- Full set of covers
- SICK safety LiDAR (for industrial use)
- Li-ion battery for 24/7 operation (swap replacement)
- External desktop charger
- Automatic charging station
- Control tablet (for setup and configuration)
- Teleoperation
- Vision-based alignment module for external elements
- Application-specific modules (e.g. lift interface)
- Fleet Management System (FleetGenius®)
- Custom Fleet Manager adaptations
- Rear vertical Rexroth profile (instrument-ready mast)
- Shock-absorbers for wheels



Floor Management

Ability to use lifts and operate across multiple floors

Inter-floor navigation and obstacle avoidance enable smart delivery services in commercial environments such as hotels, restaurants, office buildings, shopping centers and public spaces.

YGGY-540 can be equipped with a module enabling it to control connected lifts and use them autonomously.

Its multi-floor mobility allows YGGY-540 to switch automatically between different floor maps.



Integration

A rich, fully documented integration API enables seamless integration into any advanced robotics application.

Ipsum Tek provides high-level support, with direct access to the engineers involved in developing the platform.

Through the API, integrators can control all robot functions via a secure WebSocket protocol over Ethernet. This enables a wide range of client applications, including Python, Java, JavaScript and Rust.

Direct Wi-Fi access is also available for communication with remote interfaces such as tablets or dedicated GUIs.

In addition, an RS422 output is provided to control all types of external modules.



Safety & Standards

When equipped with a safety LIDAR,
YGGY-540 complies with the latest safety standards.

YGGY-540
ISO EN 12100:2010, ISO EN 13849-1 :2023, ISO 3691-4:2023, EN 60204-1:2018, IEC 61496-1:2020

SICK SAFETY LIDAR (FUNCTIONAL SAFETY)
ISO EN 13849-1:2015, ISO EN 13855:2010, DIN CLC/TS 62046:2009, CEI TS 62998-1:2019, ANSI/ITSDF B 56.5:2012
Performance Level PLd

CHARGING STATION & CHARGER
ISO EN 12100, CE marking, FCC compliant, RoHS directive

BATTERY
IEC 62619:2022, GB 31241-2014,
CE marking, FCC compliant, RoHS directive
Transport approvals : UN38.3, MSDS

Fleet Manager

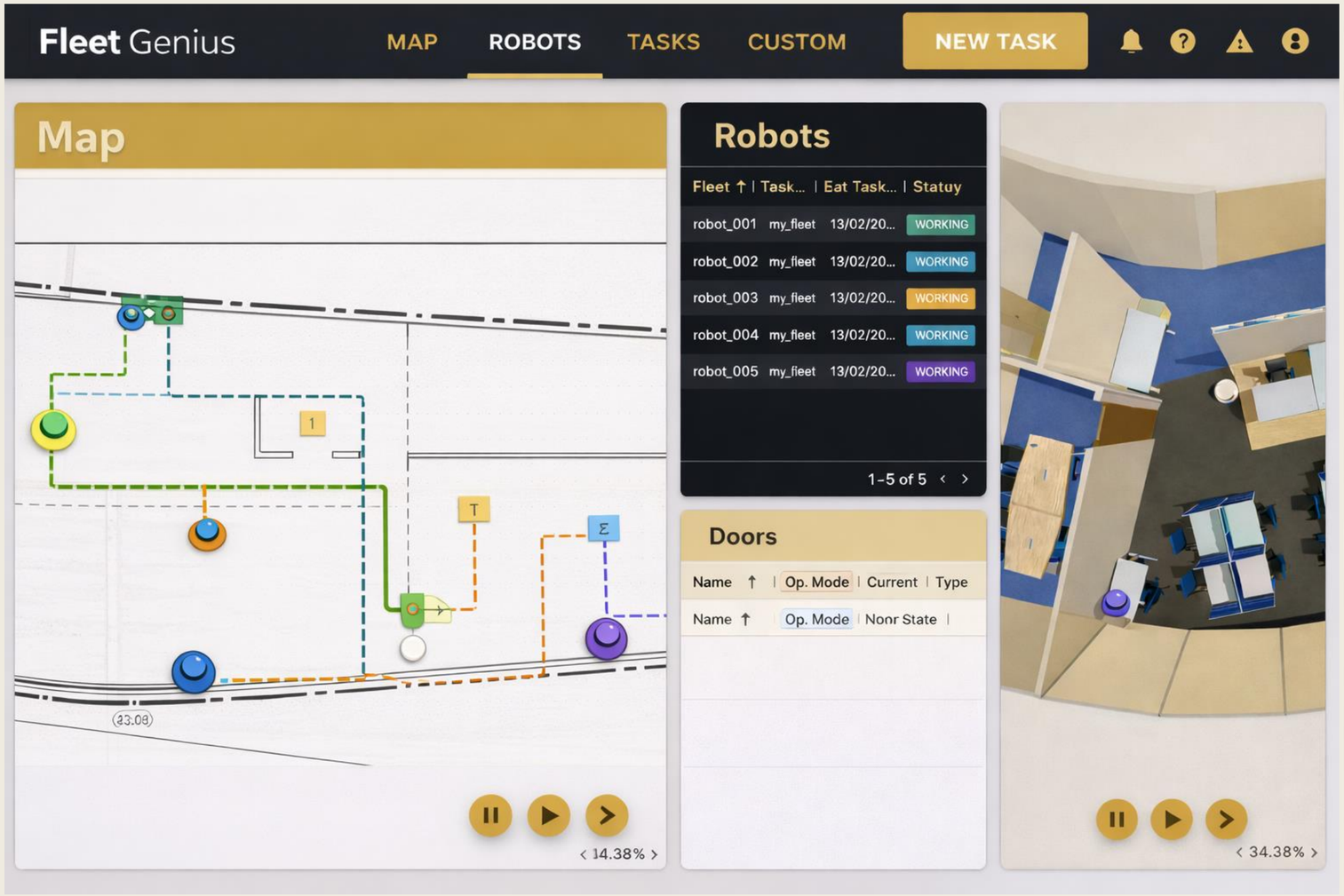
YGGY-540 can operate as a robot fleet with centralized management.

Our **FleetGenius©** fleet management software enables fine-grained control of a heterogeneous fleet of mobile robots.

Key functions

Optimized preferred routes, traffic control, bottleneck management, collision prevention, automatic task dispatching, interoperability with doors, lifts, work cells, etc.

Fleet genius
AI ROBOT NETWORK MANAGER



Origins

AN INNOVATION BY IPSUM TEK

YGGY-540 is built on VECTURA.I , a modular architecture of interoperable hardware, software & AI building blocks.

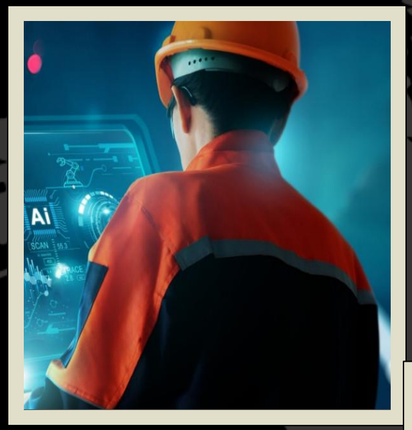
An architecture that ensures innovation, scalability, modularity and technological continuity.

YGGY-540 means :

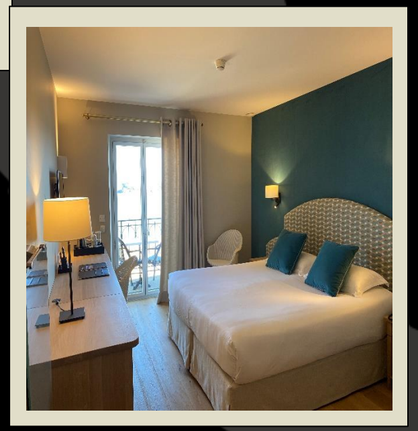
- 50,000 hours of R&D
- 100+ configuration variants
- A mobile robotic base deployed in 80+ units

Application areas

With unmatched versatility,
YGGY-540 adapts to most sectors
where robots are required



Industries, factories, Logistics, warehouses & 3PL



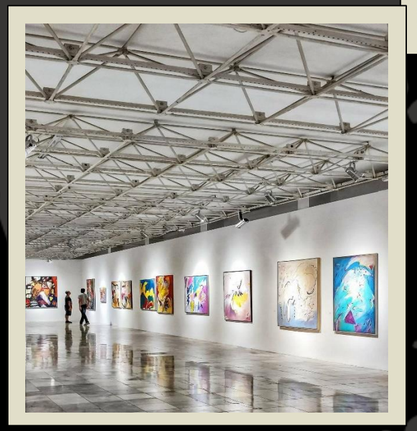
Hotels & Restaurants



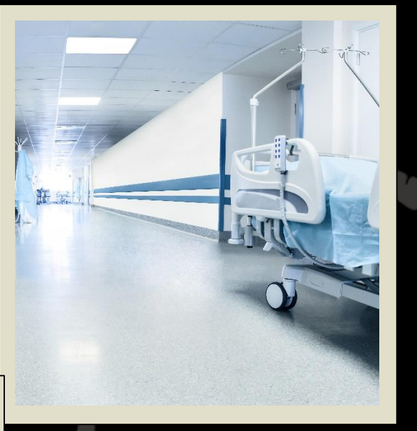
Shops & Retail Outlets



Care & Nursing Homes



Public Venues



Healthcare

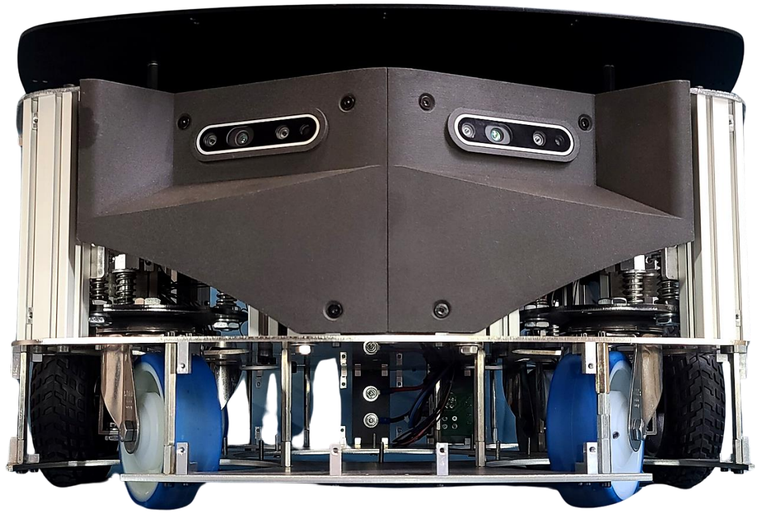
Specifications

Key Specifications

- Width 560 mm, length 570 mm
- Overall height above floor: 310mm
- Max payload: 100 kg
- 6-wheel chassis with differential drive
- Brushless motors, long MTBF, 24V / 100W
- Maxi speeds: 1 m/s and 180°/s
- Maxi slope (at 0.3 m/s² and full load): 3°
- Maximum step height: 12 mm
- Maximum gap clearance: 20 mm
- Removable LiFePO4 battery 24V / 800Wh
- Maximum autonomy: 42 hours (not moving)
- Typical autonomy: 24 hours
- Autonomy under intensive use: 12 hours
- Charging time (20%–80%): 2h30 min
- For indoor use only

Included in the standard YGGY-540 package

- YGGY-540 robotic platform, without covers
- Equipped with a SLAMTEC S2 LiDAR – 30 m range
- Removable 24V / 800Wh LiFePO4 battery
- 8A external charger
- “Getting Started” documentation
- API documentation
- Certificates of compliance
- Integration support contact



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