



The Mobile Robot Company

Knowledge Center — Mobile Robot Terminology · 2026-08-04

<https://info.mobilerobot.com/documentation/concepts/mobile-robot-terminology>

Mobile Robot Terminology

Mobile robotics comes with a dense vocabulary. This page explains the key terms in context — what they mean, how they differ, and how they apply to the J1600. For short definitions of every term, see the [glossary](https://info.mobilerobot.com/documentation/concepts/glossary/) (<https://info.mobilerobot.com/documentation/concepts/glossary/>).

AGV, AMR, and the tier in between

An **AGV** (automated guided vehicle) is the conventional automation category: vehicles that follow predefined guidance and typically require expert configuration, controlled processes, and integration work. An **AMR** (autonomous mobile robot) is the broader label for robots that navigate by sensing the environment rather than following fixed guidance; it is also used for the J1600 and comparable machines.

The J1600 occupies a tier between manual pallet jacks and classic AGVs: a [dual-mode](https://info.mobilerobot.com/documentation/concepts/dual-mode/) (<https://info.mobilerobot.com/documentation/concepts/dual-mode/>) vehicle that runs as a familiar manual tool and as a self-driving robot. Immediate human takeover is central to the category — see [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/) (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>).

Pallet jacks and lowlifters

A pallet jack (pallet truck) moves palletized loads at or near floor level. **Lowlifter** is the warehouse-truck class the J1600 competed in as an IFOY applicant — trucks that lift loads for transport rather than for high-bay stacking. The J1600 picks and drops manually up to 1,600 mm and delivers autonomously at floor level.

SLAM, LiDAR, and navigation

LiDAR is a laser ranging sensor. **SLAM** (simultaneous localization and mapping) is the technique of building a map while simultaneously tracking the vehicle's position in it. The J1600 uses [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) on an industrial NVIDIA Jetson AI computer: it learns the

environment continuously while an operator drives, then localizes and plans routes to saved destinations without tracks, wires, or reflectors.

[Navigation sensing and safety sensing are distinct](https://info.mobilerobot.com/safety-compliance/safety-overview/navigation-sensors-vs-safety-sensors/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/navigation-sensors-vs-safety-sensors/>). The 3D LiDAR and RGB AI camera belong to the navigation stack; personnel protection uses two separate 2D safety LiDARs, [certified components](https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/>), and a safety controller.

Protective fields and Performance Levels

A **protective field** (safety field) is the monitored zone around the vehicle in which detected persons or obstacles trigger a safe reaction. The J1600's field covers 360 degrees and [expands with speed](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/>). A **Performance Level (PL)**, from EN ISO 13849-1, grades a safety function's reliability from PL a to PL e; J1600 safety functions range from [PL b to PL d](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/>). See [how J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).

Teach and repeat

Teach and repeat means an operator demonstrates destinations by driving to them and saving them, and the robot then repeats the travel autonomously — no code, no configuration project. It is the J1600's standard task-creation method; see [teach and repeat](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>).

Fleet managers, VDA 5050, and WMS

A **fleet manager** orchestrates multiple robots: assigning missions, coordinating traffic, and managing charging. **VDA 5050** is the interoperability interface that lets robots from different vendors run under one compatible fleet layer — see [VDA 5050 explained](https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/) (<https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/>). A **WMS** (warehouse management system) manages inventory and warehouse processes; full automation projects typically integrate WMS, fleet manager, and robots, while basic J1600 use requires none of them.

Brownfield and greenfield

A **brownfield** site is an existing facility whose layout and processes were not designed around new automation — the opposite of a purpose-built greenfield site. The J1600 targets [brownfield use](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/) (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>): 3D mapping handles changing layouts, and human takeover absorbs the [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) that would otherwise require engineering.

Dig deeper

- [Glossary](https://info.mobilerobot.com/documentation/concepts/glossary/) (<https://info.mobilerobot.com/documentation/concepts/glossary/>) — compact definitions, A to Z.
- [Pallet automation fundamentals](https://info.mobilerobot.com/documentation/concepts/pallet-automation-fundamentals/) (<https://info.mobilerobot.com/documentation/concepts/pallet-automation-fundamentals/>) — the market context behind the categories.
- [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>) — the product these terms describe.