



BETA ROBOTS

Mobile Robotics for Intralogistics

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OUTLINE

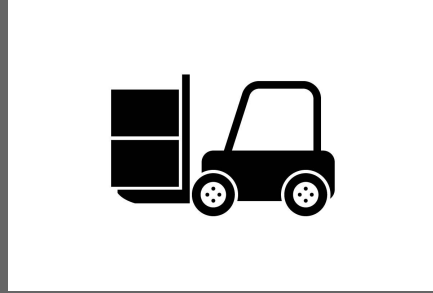


1. Introduction
2. Vehicle Architecture
3. Kinematics
4. Navigation System
5. Localization System
6. Application
7. Manufacturers

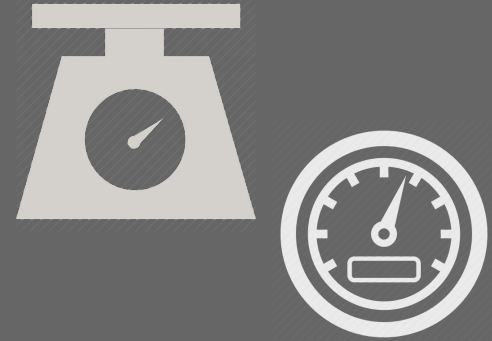
1. INTRODUCTION (i)



Mobile Robotics



Intralogistics



Beyond Load & speed

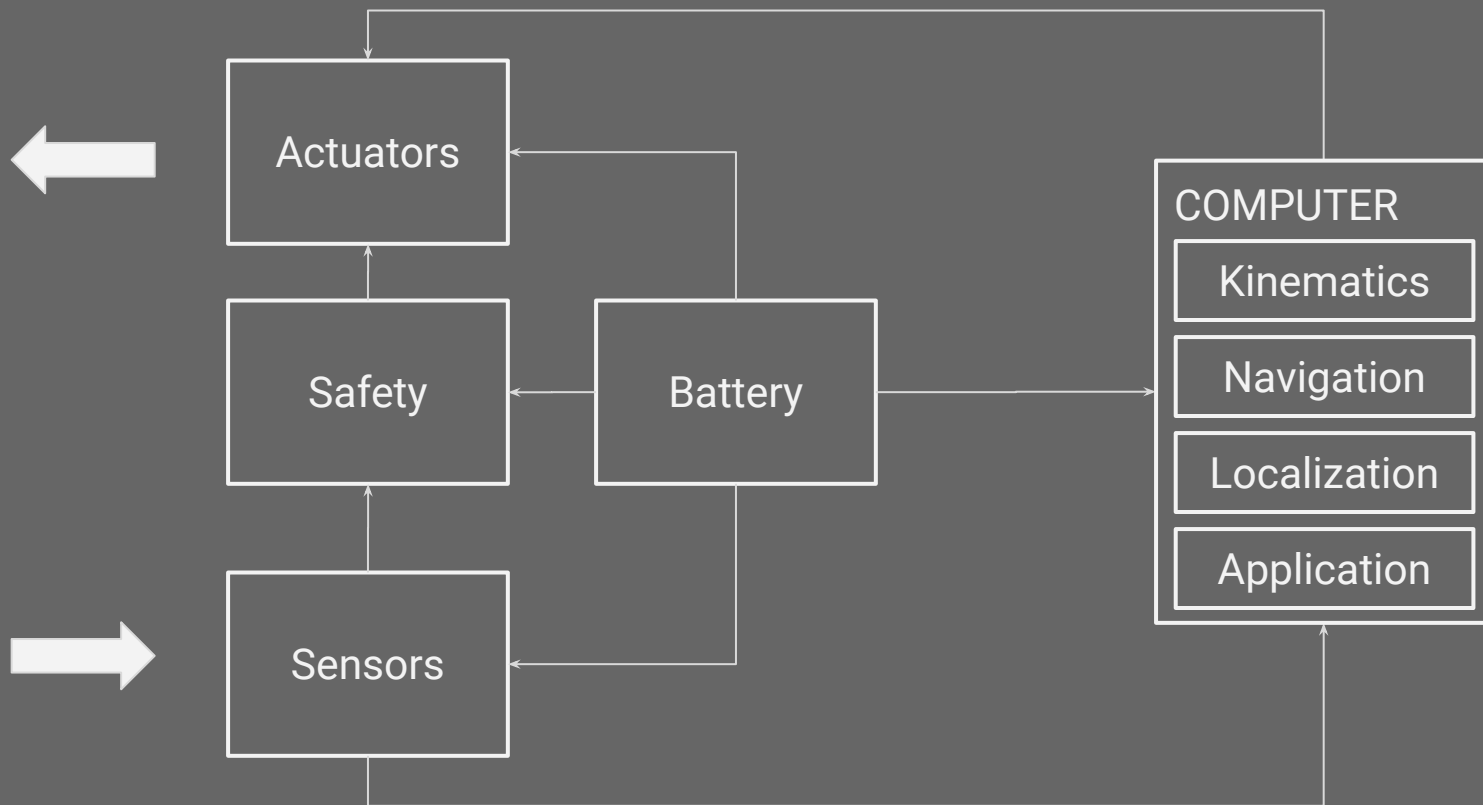
AGV: Automated/Autonomous Guided/Ground Vehicle

AMR: Autonomous Mobile Robot

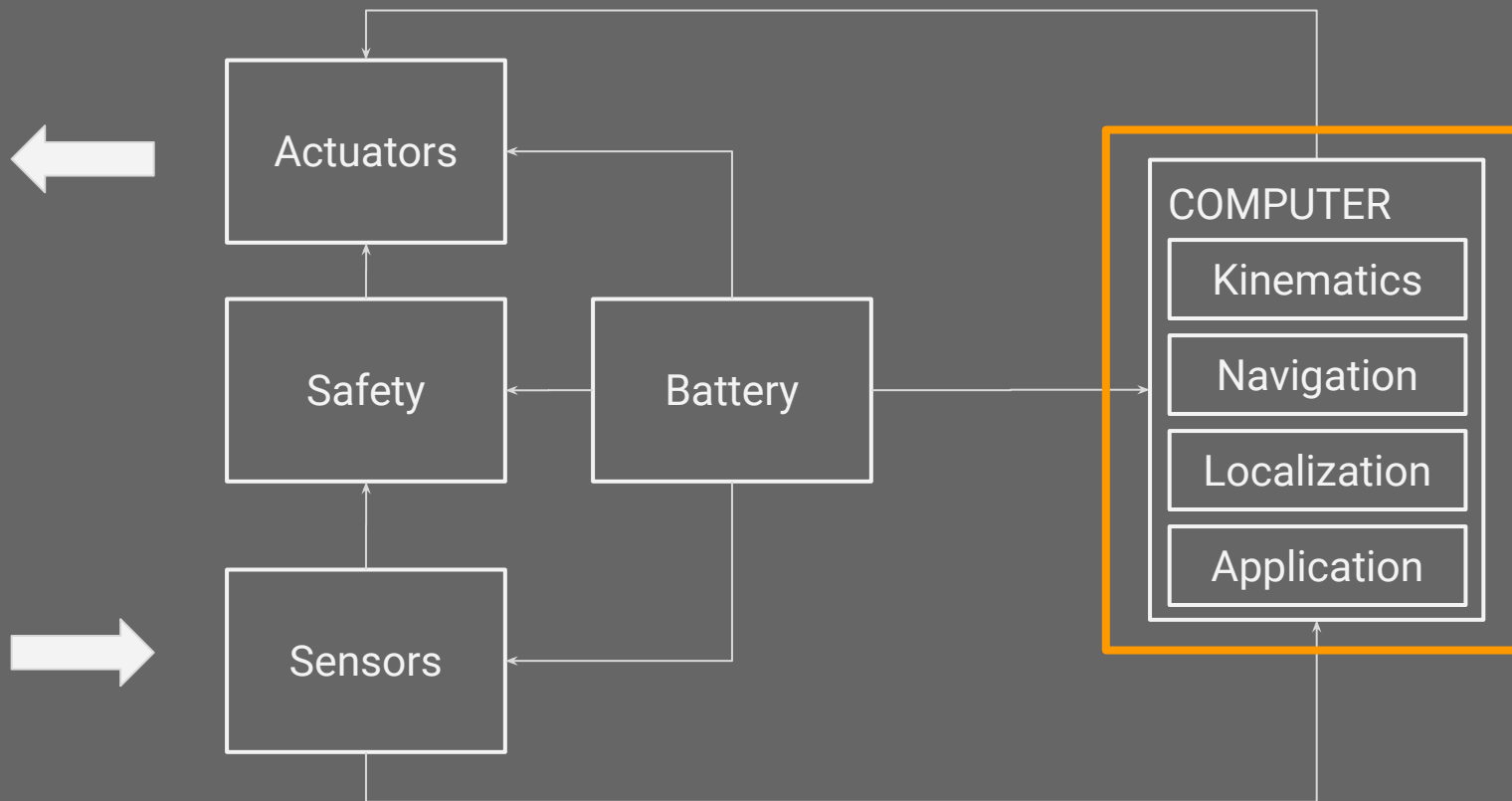
1. INTRODUCTION (ii)



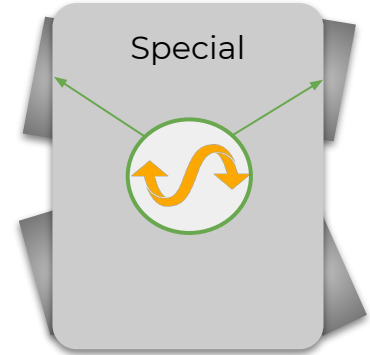
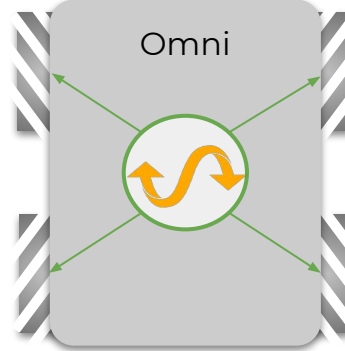
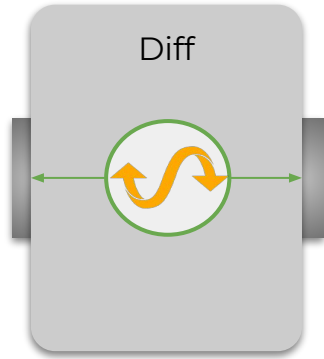
2. VEHICLE ARCHITECTURE



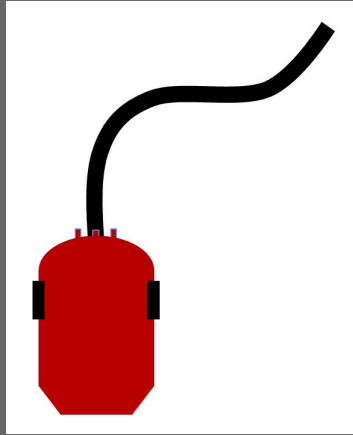
2. VEHICLE ARCHITECTURE



3. KINEMATICS



4. NAVIGATION SYSTEM



Line Following

Paint / Magnetic / Virtual

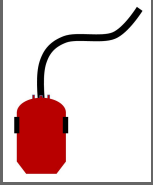


Free Navigation

Stop&Go / Obstacle Avoidance

Autonomy

5. LOCALIZATION SYSTEM



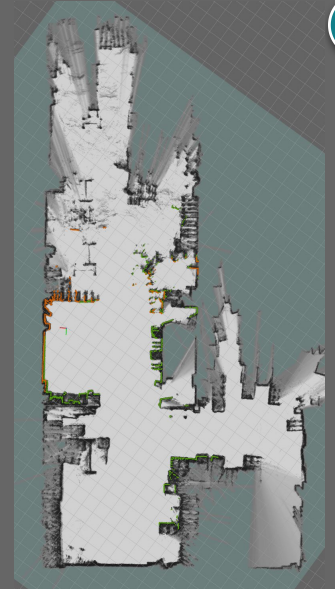
No Localization
(line following)



Explicit infrastructure
Lidar beacons
RF beacons
QR codes (ground, wall, ceil)



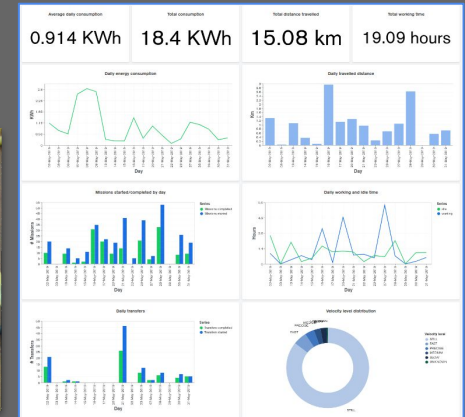
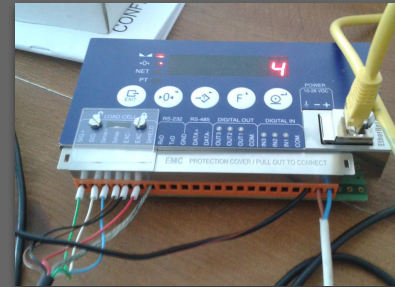
Implicit infrastructure
GPS (outdoor only)



Mapping (SLAM)
Lidar
Vision(2D/3D)

Autonomy

6. APPLICATION



7. MANUFACTURERS



Local

Worldwide

STEERING MACHINES





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