

# TIAGo<sup>®</sup>

## TECHNICAL SPECIFICATIONS

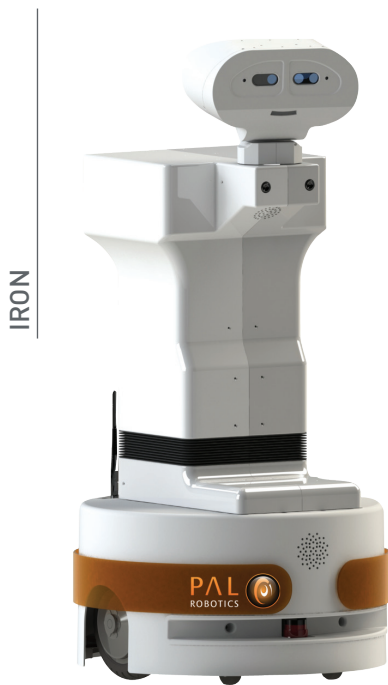
Simulation model available at:  
[wiki.ros.org/Robots/TIAGo](http://wiki.ros.org/Robots/TIAGo)

### GENERAL FEATURES

**Height** 110 - 145 cm  
**Weight** 70 Kg  
**Footprint** ø 54 cm

### DEGREES OF FREEDOM (DoF)

**Torso lift** 1  
**Mobile base** 2  
**Head** 2  
**Arm** 7  
**TOTAL** 12  
 (without end-effector)




CONFIGURATION	IRON	STEEL	TITANIUM
Mobile Base	✓	✓	✓
Navigation Laser	5.50m	5.50m	10m
Lifting Torso	✓	✓	✓
Pan-tilt head	✓	✓	✓
7 DoF arm		✓	✓
End-effector		Parallel Gripper	5 finger hand
Force/torque sensor			✓

\* Upgrade Kits available in order to evolve the Iron version to Steel and Titanium

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<b>BODY</b>	Arm payload (at full extension)	2 Kg	
	Arm reach (without end-effector)	87 cm	
	Torso lift	35 cm	
<b>MOBILE BASE</b>	Differential drive	✓	
	Max speed	1 m/s	
	Operation environment	Indoor	
<b>CONNECTIVITY</b>	Wireless connectivity	802.11 n/ac 2x2 Dual Band Wi-Fi Bluetooth 4.0	
<b>ELECTRICAL FEATURES</b>	Battery 36V 20Ah	1 battery / 2 batteries	
	Battery Autonomy	4-5h / 6 - 10h	
<b>SENSORS</b>	Base	Laser 5.5m or 10m range, rear sonars 3x1m range	
	IMU (Base)	6 DoF	
	Motors	Actuators current feedback	
	Torso	Stereo microphones	
	Head	RGB-D camera	
<b>COMPUTER</b>	CPU	Intel i5 / i7 Haswell	
	RAM	4 GB / 8 GB / 16 GB	
	Hard Drive	60 GB / 120 GB SSD	
<b>SOFTWARE</b>	OS	Ubuntu Linux LTS	
	Open source middleware	ROS	
	Periodic updates/patches	✓	
	Arm with	position / velocity / effort control	
	Eye-hand calibration suit	✓	
<b>SUPPORT</b>	Training	On demand	
	Maintenance plan	On demand	
	Ticketing system	✓	
	Online helpdesk	✓	
	Research community forum	✓	
<b>EXTENSIBILITY</b>	Laptop tray	✓	
	Mounting Points	On head and laptop tray	
	USB ports	1x USB3, 1x USB2	
	Ethernet ports	2x Gigabit	
	Power supply	12V / 5A	
<b>OPTIONALS</b>	End-effector	5 finger underactuated hand / Parallel gripper	
	Wrist sensor	Force/torque sensor	
	Whole body control	✓	

