

Ri Engineering Masterclass 2021

Robotics—Moving Intelligently Calibration Sheet

Mark the cardboard chassis of your vehicle with an identifying code so that this calibration sheet can be referred to when using your vehicle.

Vehicle ID

Part 1—Testing	Yes / No		Performed by:
Has the vehicle passed all the stages of the testing checklist on page 14 of the Masterclass workbook?	Y	N	<input style="width: 50px; height: 20px;" type="text"/>

How well does the vehicle perform in this mode? Could you suggest changes that might improve it?

Part 2—Driving Forwards and Backwards				Comments:
Does the vehicle drive in a straight line without changing the bias setting for the full 10 seconds:				
a. Forwards?	Yes	No		
b. Backwards?	Y	N	<input style="width: 50px; height: 20px;" type="text"/>	
If the answer above is 'No', how far does the vehicle travel before leaving a straight track with the bias set to 0?				
	<input style="width: 50px; height: 20px;" type="text"/>	cm	<input style="width: 50px; height: 20px;" type="text"/>	
Is there a bias setting that will allow the vehicle to drive in a straight line for the full 10 seconds? If so, record that bias setting.				
a. Forwards	Y	N	<input style="width: 50px; height: 20px;" type="text"/>	
b. Backwards	Y	N	<input style="width: 50px; height: 20px;" type="text"/>	
		Bias setting	<input style="width: 50px; height: 20px;" type="text"/>	
		<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	

Part 3—Driving in Circles				Comments:
With no adjustments, what percentage of a circle does the vehicle turn:				
a. Left	<input style="width: 50px; height: 20px;" type="text"/>	%	<input style="width: 50px; height: 20px;" type="text"/>	
b. Right	<input style="width: 50px; height: 20px;" type="text"/>	%	<input style="width: 50px; height: 20px;" type="text"/>	
What is the calculated time that the vehicles should turn for to complete a full 360° circle?				
a. Left	<input style="width: 50px; height: 20px;" type="text"/>	ms	<input style="width: 50px; height: 20px;" type="text"/>	
b. Right	<input style="width: 50px; height: 20px;" type="text"/>	ms	<input style="width: 50px; height: 20px;" type="text"/>	

Part 4—Line Following				Comments:
Does the vehicle successfully follow a line around the town map at the default vehicle speed (30)?				
	Y	N	<input style="width: 50px; height: 20px;" type="text"/>	
What is the maximum speed that the vehicle can run at and still follow a line around the town map?				
	<input style="width: 50px; height: 20px;" type="text"/>	ms	<input style="width: 50px; height: 20px;" type="text"/>	

Final Comments	Does this vehicle pass or fail your inspection?	Yes / No	Performed by:
	This is not a reflection on you or your ability to build the vehicle. It is an assessment of the vehicle itself!	Y	N
			<input style="width: 100px; height: 20px;" type="text"/>

What would you change about the vehicle to make it better? What extra sensors or kit could we add to the vehicle to make it perform better or more useful tasks?

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Robotics—Moving Intelligently **Your Thoughts**

How would you feel about cars being able to drive themselves in the near future?

Would you trust a computer to control a vehicle with you as a passenger? What about as a pedestrian?

Would a self-driving car be useful? How could it change the way you use transport?

How do you think self-driving cars would change public transport, or who owns a car?

What benefit do you think intelligent or connected vehicles could have to society?

Intelligent vehicles use sensors to understand the road around them and connected vehicles share that information with each other.