

**Product Contract  
Team Silver**

# WaiterBot

<b>END USER: PATRON</b>				
<b>Need</b>	<b>Attribute(s)</b>	<b>Metric</b>	<b>Value, Unit (SI)</b>	<b>OWNER</b>
Operates quietly, not too loud	Quiet	Sound pressure at 1 m	0 - 15 dB	KS
Slow enough to grab item, fast enough for quick delivery	Appropriately Paced	Steady-state driving speed	7 - 9 cm/s	YP
Damage resistant	Durable	Survivable Drop Height (onto Granite)	> 3 ft	KJ
Able to carry a plate	Appropriately Sized	Outer Diameter (OD)	10 - 15 cm	CD
Plates are stable on bot throughout travel	Stable	Maximum acceleration	< 0.1 m/s <sup>2</sup>	KO
Stays on the right track	Guideable	IR range finding distance	3 - 6 cm	JR
Plate can be easily reached	Accessible (Bot Driving Path)	Reach distance (patron to plate)	< 1 m	AR

<b>CUSTOMER: RESTAURANT MANAGER / BUSINESS OWNER</b>				
<b>Need</b>	<b>Attribute(s)</b>	<b>Metric</b>	<b>Value, Unit (SI)</b>	<b>OWNER</b>
Needs to earn positive cash flow	Profitable	Time to positive NPV	< 3 year	LF
Reasonable price for track installation	Affordable	Track installation price	< 300 \$USD/m	ER
Reasonable price per robot	Affordable	Price per robot	< \$40 USD	MS
Easy to clean, water resistant	Cleanable	IP Rating	> 55	JB
Robots recharge quickly	Quickly Chargeable	Charging time per robot	< 7 hours	JR
Batteries last a long time off a given charge	Reliable Charge	Run time per charge	> 7 hours	CG
Batteries have a long lifetime	Rechargeable	Number of effective charge cycles	> 750	RL
Theft prevention	Detectable	Binary	Yes	AR