

Project: 15043

rqmt. #	Importance	Source	Function	Engr. Requirement (metric)	Unit of Measure	Marginal Value	Ideal Value	Comments/Status	Test (how are you going to verify satisfaction)
S1	9	CR1	System Operation	Provide 90 degree detection range in front of user	Degrees		90		
S2	9	CR1	System Operation	Signal detection of obstacles via haptic feedback (horizontal and verticle motion in handle)	Binary				
S3	3	CR2	System Portability	Adds no more than 1 lb to standard white cane	Lbs		1		
S4	3	CR3	System Assembly	Decrease number of existing parts by ~50% or more	Pieces				
S5	3	CR4, CR5	System Operation	8 hour rechargeable battery (minimum battery life)	Hours		8		
S6	3	CR6	System Portability	Collapsible into 8-10" sections	Inches	10	8		
S7	3	CR7	System Cost	Manufacturing cost \$125 or less	USD		125		
S8	1	CR8	System Assembly	Design assembly process to be completed in a blind assembly environment	Binary				
S9	3	CR9	System Useability	Keep cane collapse/re-open time less than 1 minute	Minutes		1		
S10	9	CR10	System Operation	Horizontal detection range	Feet	6	10		
S11	9	PRP	N/A	Prototype cost	USD	1000	<1000		
S12	3	CR12	System Operation	Maximum pressure	psi	3	5		
S13	3	CR10	System Operation	Time from motor input signal to when the roller reaches the minimum rotation speed at 3 psi Grip	ms	500	<400		
S14	3	CR11	System Safety	Circuit voltage	V	12	<12		
S15	3	CR12	System Structure	Handle contents fit within handle mock up envelope	Binary	Pass	Pass		
S16	9	CR12	System Structure	Maximum handle grip diameter	in	1.5	0.78		

Importance: Sample scale (9=must have, 3=nice to have, 1=preference only), or see Ulrich exhibit 4-8.