

R1: When [Left_Input_Device is active] AND [Right_Input_Device is active], then the SOI shall activate Middle_Output_Device.

R2: When [Left_Input_Device is inactive] AND [Right_Input_Device is inactive], then the SOI shall deactivate Middle_Output_Device.

Step 2:

L = Left_Input_Device is Active

R = Right_Input_Device is Active

M = Middle_Output_Device is Active

				Step 3:	Step 4:	
L	R	$\neg L$	$\neg R$	$L \wedge R$	$\neg L \wedge \neg R$	$(L \wedge R) \vee (\neg L \wedge \neg R)$
0	0	1	1	0	1	1
0	1	1	0	0	0	0
1	0	0	1	0	0	0
1	1	0	0	1	0	1

Step 5:

Passed Test for Tautology?

FALSE

Conclusion: Requirement set is NOT Complete

R1: When [Left_Input_Device is active] AND [Right_Input_Device is active], then the SOI shall activate Middle_Output_Device.

R2: When [Left_Input_Device is inactive] **OR** [Right_Input_Device is inactive], then the SOI shall deactivate Middle_Output_Device.

Step 2:

L = Left_Input_Device is Active

R = Right_Input_Device is Active

M = Middle_Output_Device is Active

				Step 3:	Step 4:	
L	R	$\neg L$	$\neg R$	$L \wedge R$	$\neg L \vee \neg R$	$(L \wedge R) \vee (\neg L \vee \neg R)$
0	0	1	1	0	1	1
0	1	1	0	0	1	1
1	0	0	1	0	1	1
1	1	0	0	1	0	1

Step 5:

Passed Test for Tautology?

TRUE

Conclusion: Requirement set is Complete