

Project3 / PLC_1 [CPU 1214C DC/DC/DC] / Program blocks

Main [OB1]

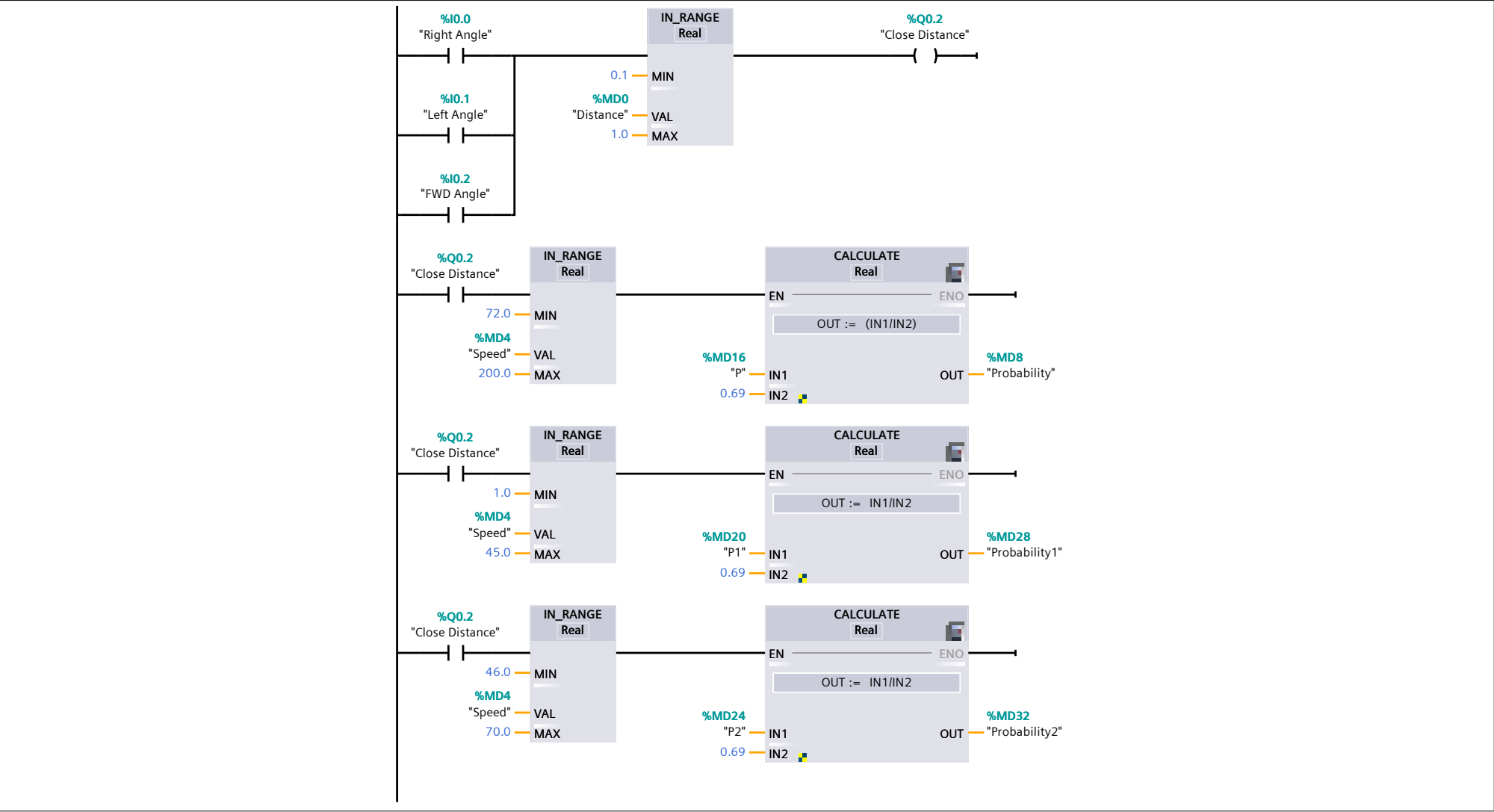
Main Properties							
General							
Name	Main	Number	1	Type	OB	Language	LAD
Numbering	Automatic						
Information							
Title	"Main Program Sweep (Cycle)"	Author	AhmedTijani	Comment	Bayesian theorem, the speed, distance, and angles are used to determine the possibility of a vehicle hitting a pedacetrain. These probabilities are updating and changing based on the real-world data.	Family	
Version	0.1	User-defined ID					

Main				
Name	Data type	Default value	Supervision	Comment
▼ Input				
Initial_Call	Bool			Initial call of this OB
Remanence	Bool			=True, if remanent data are available
Temp				
Constant				

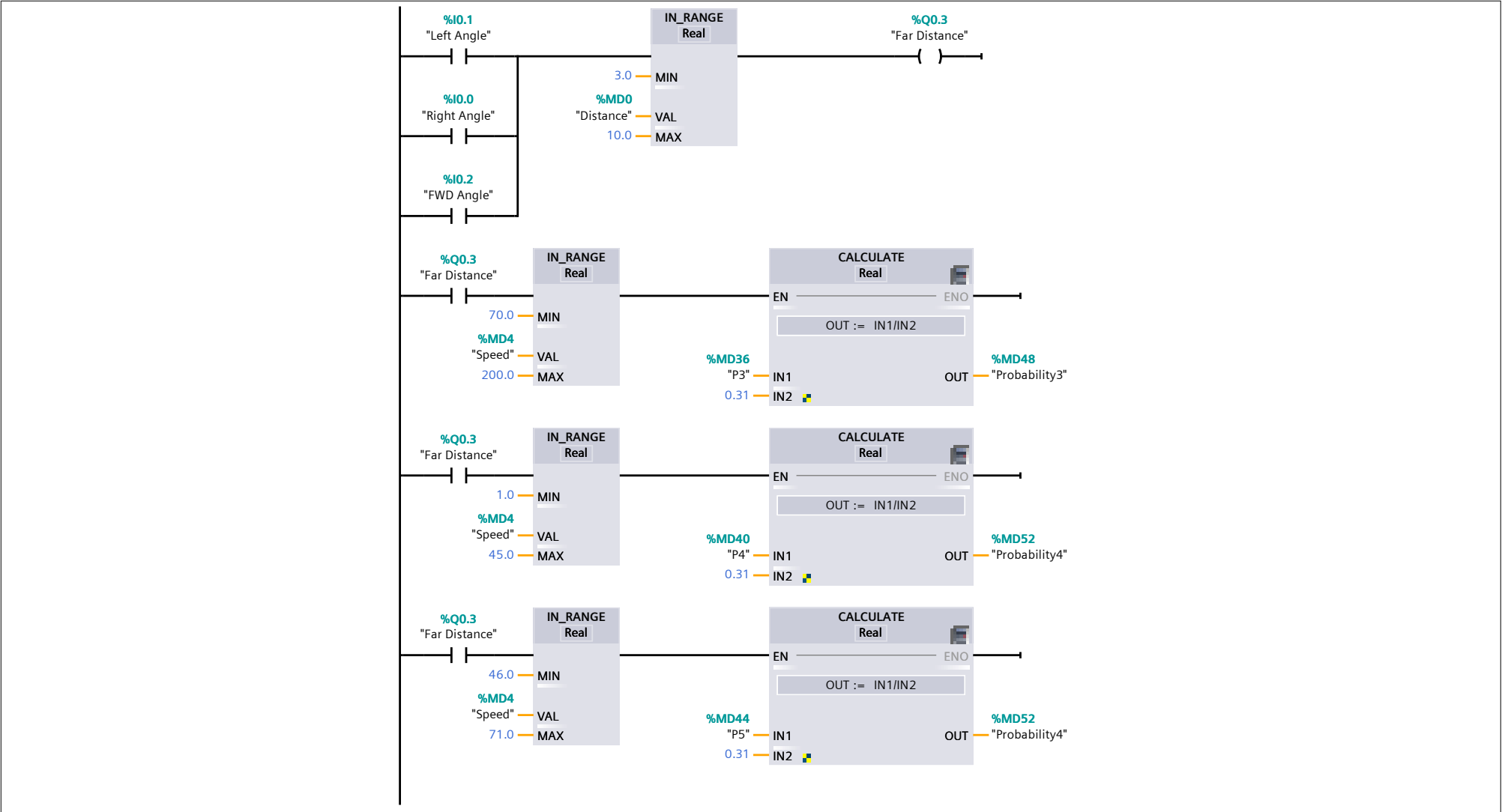
Network 1: Close distance

If the distane is between (0.1-1 meters), that would be close. When either right, left, FWD angles detect an object, it would be activated. the speed is low when it is between 1MPH-45MPH. the speed is med when it is between 45MPH-71MPH. The speed is high when it is between 72MPH-200MPH. The probabilities would be computed and if the probability of a certain angle equals or higher the conditinal probability, the vehicle would stop. If the conditinal probability is below, there would be an update to that probability.

Probability of high speed, close distance, and all angles. $P(D=c \mid S=h \mid A=L)$, $P(D=c \mid S=h \mid A=R)$, $P(D=c \mid S=h \mid A=F)$.

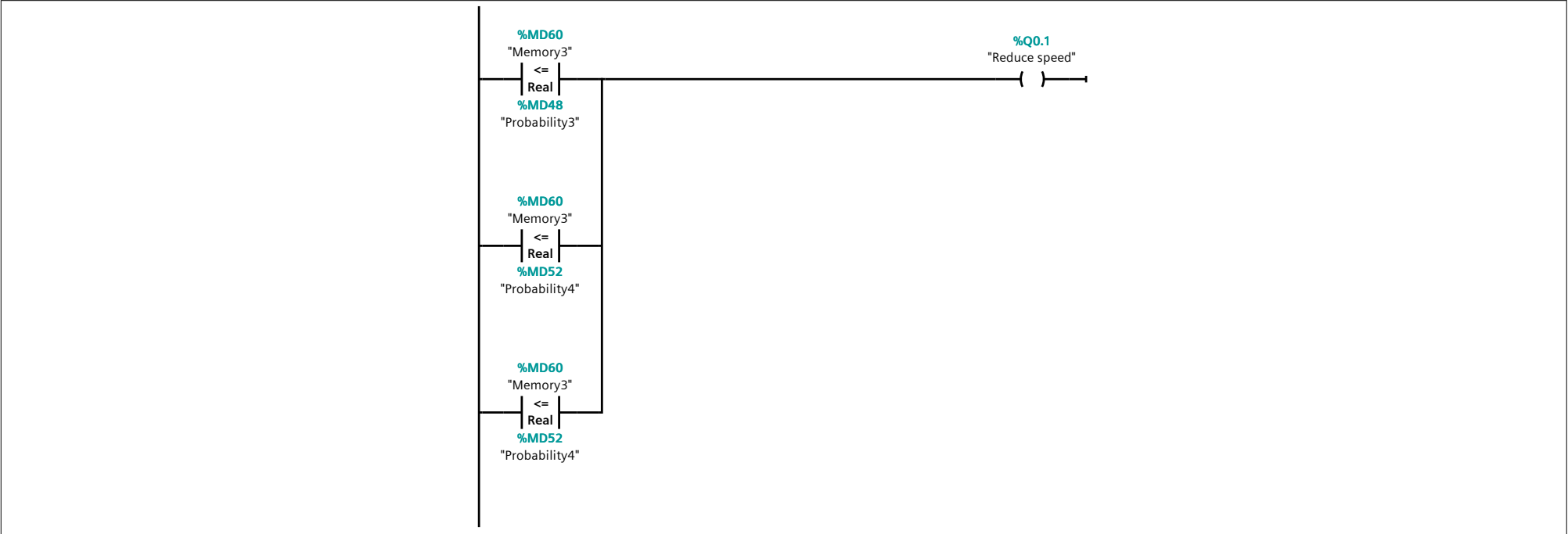


Network 2: Far distance



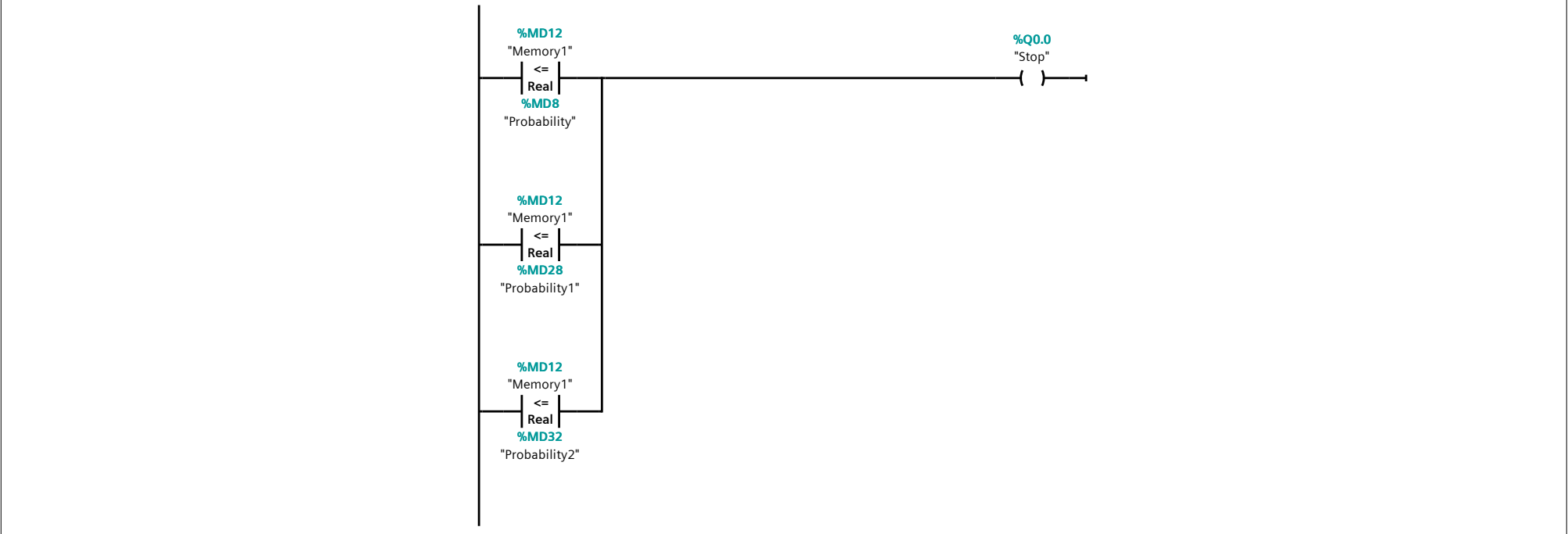
Network 4: Reduce the Speed

If the conditinal probbility equals or higher than the threshold, the speed would be reduced.



Network 3: Stop the vehicle

If the conditinal probbility equals or higher than the threshold, the speed would be stpped



Network 5: Updating

This part is for updating the probabilities.

