Example: Truck Driving

$$initial\_pos_t = 0$$

$$Cyclic\ \#4 - [100ms]$$

$$s_0 = 0$$

START STOP

$$s_1 = 100$$

$$sensor_{left}$$

$$act\_pos_t$$

$$sensor_{right}$$

$$object = 0$$

$$object = 1$$

Name	Type	& Reference	a Constant	Retain	Replicable	Value	Description [1]
truck_before_pos	USINT	☐	☐	☐	☑	0	
stop_track	BOOL	☐	☐	☐	☑	FALSE	
sensor_left	BOOL	☐	☐	☐	☑	FALSE	
sensor_right	BOOL	☐	☐	☐	☑	FALSE	
object	BOOL	☐	☐	☐	☑	FALSE	
start_track	BOOL	☐	☐	☐	☑	FALSE	
truck_act_pos	USINT	☐	☐	☐	☑	0	
track_stateVar	USINT	☐	☐	☐	☑	0	
track_before_stateVar	USINT	☐	☐	☐	☑	1	

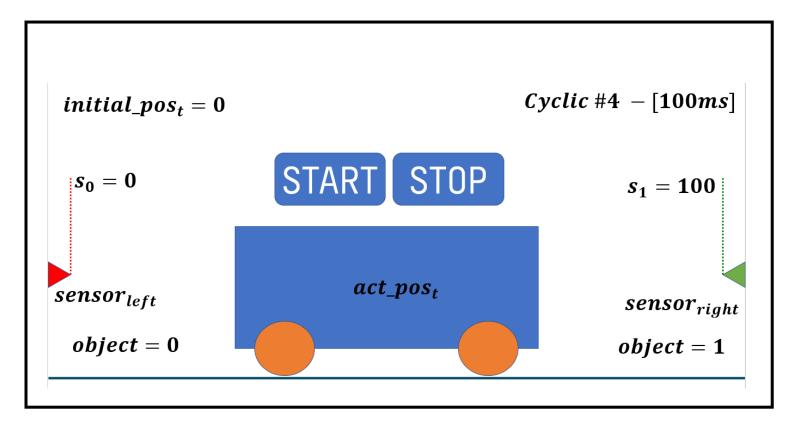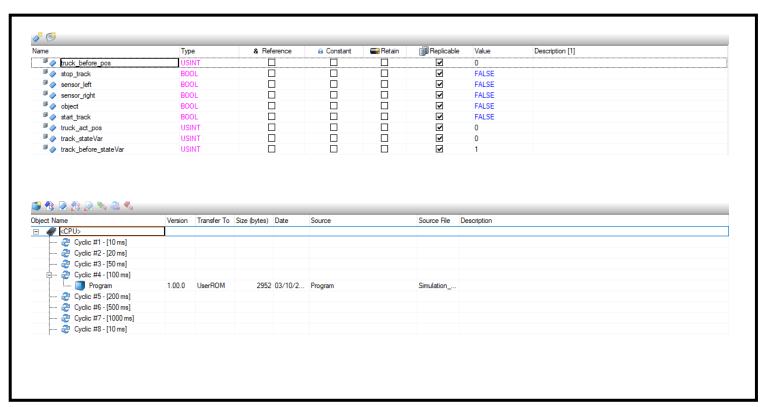| Object Name	Version	Transfer To	Size (bytes)	Date	Source	Source File	Description
☐ <CPU>							
Cyclic #1 - [10 ms]							
Cyclic #2 - [20 ms]							
Cyclic #3 - [50 ms]							
☐ Cyclic #4 - [100 ms]							
Program	1.00.0	UserROM	2952	03/10/2...	Program	Simulation_...	
Cyclic #5 - [200 ms]							
Cyclic #6 - [500 ms]							
Cyclic #7 - [1000 ms]							
Cyclic #8 - [10 ms]							

```
void _CYCLIC ProgramCyclic(void)
{
    if (stop_track == 1){
        stop_track    = 0;
        track_stateVar = 0;
    }

    switch(track_stateVar){
        case 0:
            {
                // initialization variable
                truck_act_pos = truck_before_pos;

                // waiting for start
                if(start_track == 1){
                    start_track      = 0;
                    track_stateVar   = track_before_stateVar;
                }
            }
            break;
        case 1:
            {
                // move right
                truck_act_pos++;
                truck_before_pos = truck_act_pos;
                track_before_stateVar = 1;

                sensor_left  = 0;
                if(truck_act_pos == 100){
                    // take the object
                    sensor_right    = 1;
                    object          = 1;
                    track_stateVar = 2;
                }
            }
            break;

        case 2:
            {
                // move left
                truck_act_pos--;
                truck_before_pos = truck_act_pos;
                track_before_stateVar = 2;

                sensor_right  = 0;
                if(truck_act_pos == 0){
                    // remove the object
                    sensor_left     = 1;
                    object          = 0;
                    track_stateVar = 1;
                }
            }
            break;

    }
}
```