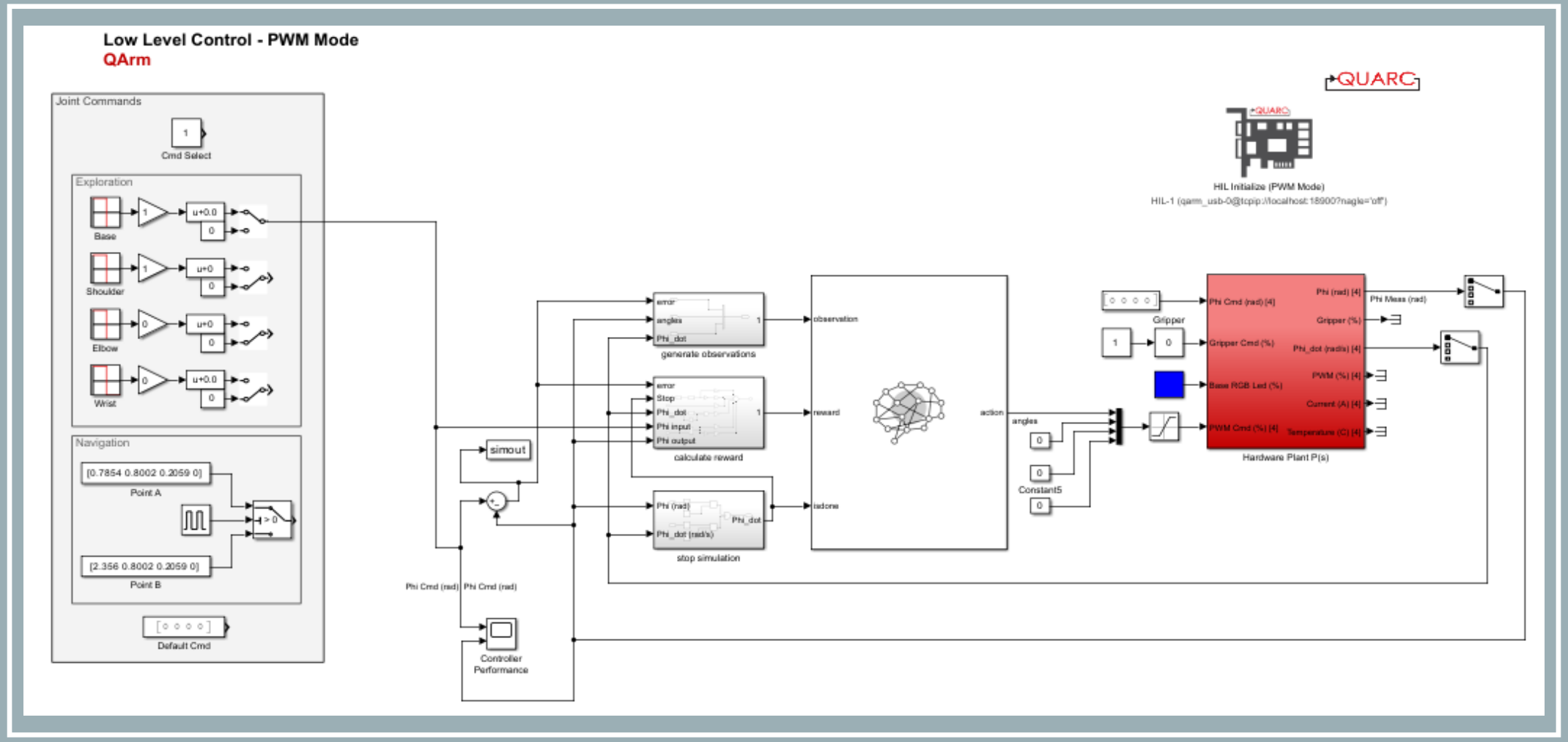
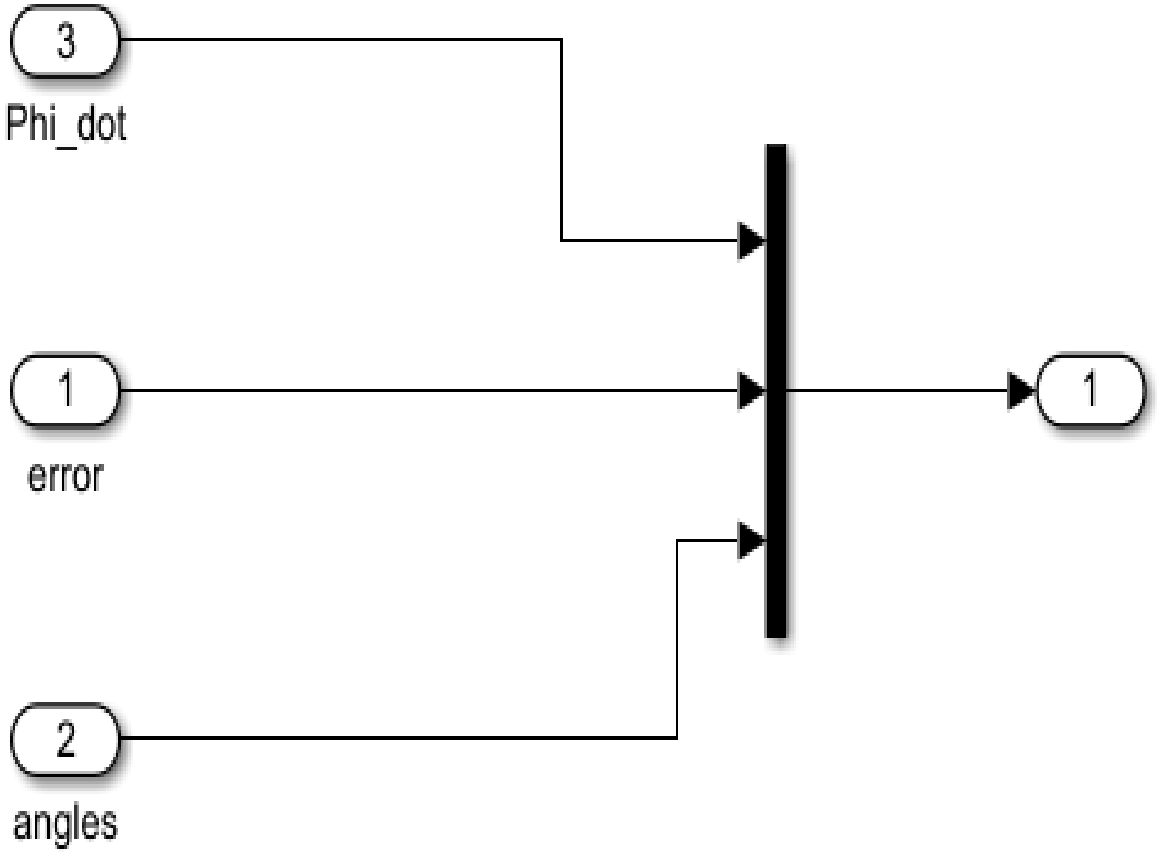
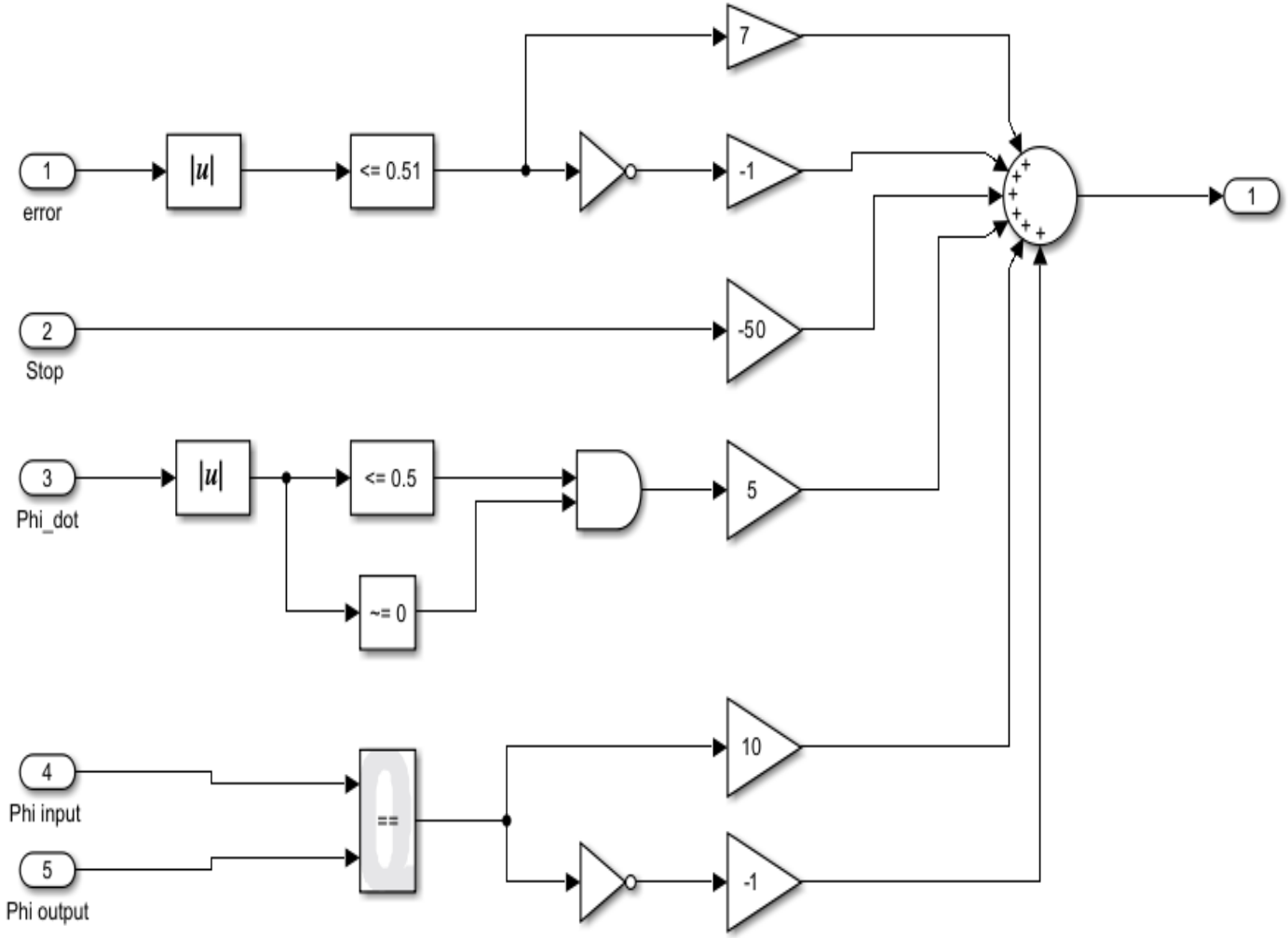
QArm Robot Controlled by Reinforcement Learning Agent


Low Level Control - PWM Mode
QArm
Joint Commands
Cmd Select
Exploration
Base
Shoulder
Elbow
Wrist
Navigation
[0.7854 0.8002 0.2059 0]
Point A
[2.356 0.8002 0.2059 0]
Point B
Default Cmd
QUARC
HIL Initialize (PWM Mode)
HIL-1 (qarm_usb-0@tcpip://localhost:18900?nagle='off')
generate observations
calculate reward
stop simulation
observation
reward
isdone
action
simout
Phi Cmd (rad)
Controller Performance
Gripper
Constant5
Hardware Plant P(s)
Phi Meas (rad)

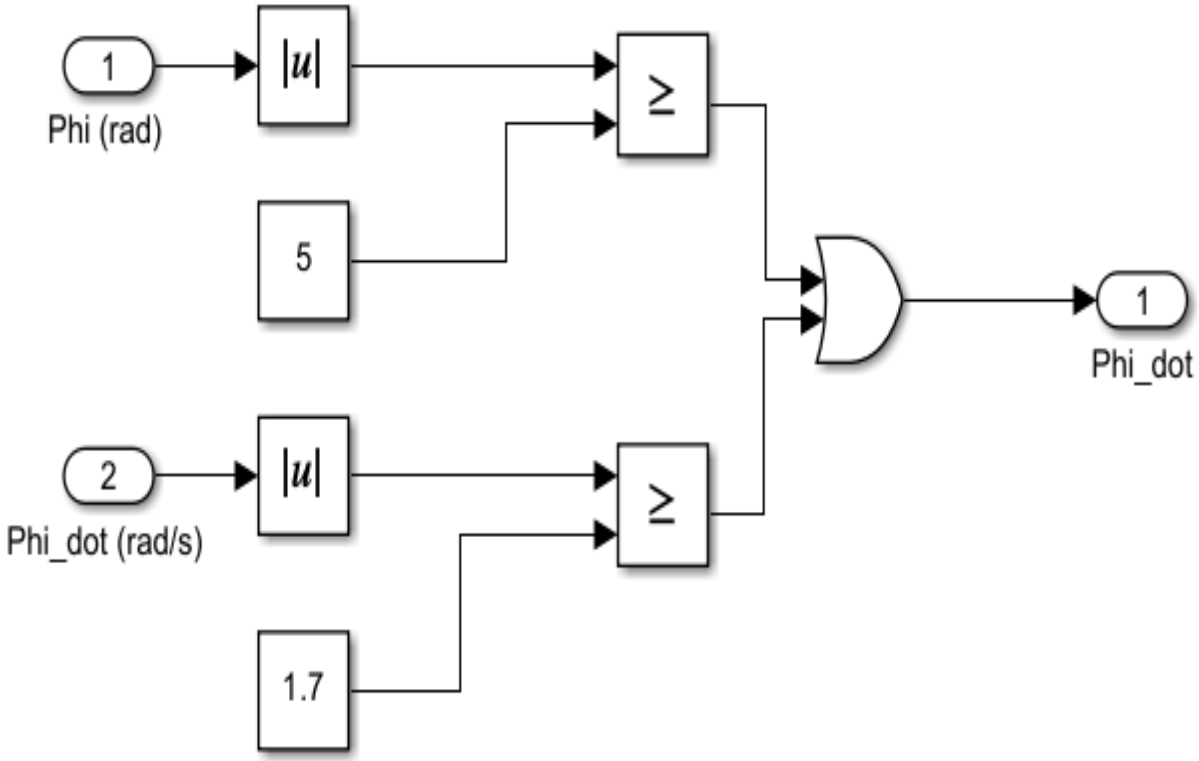
Observation Block

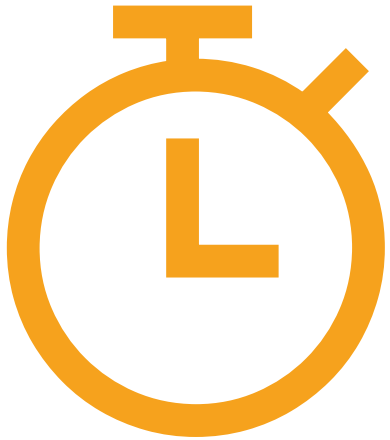


Reward Block



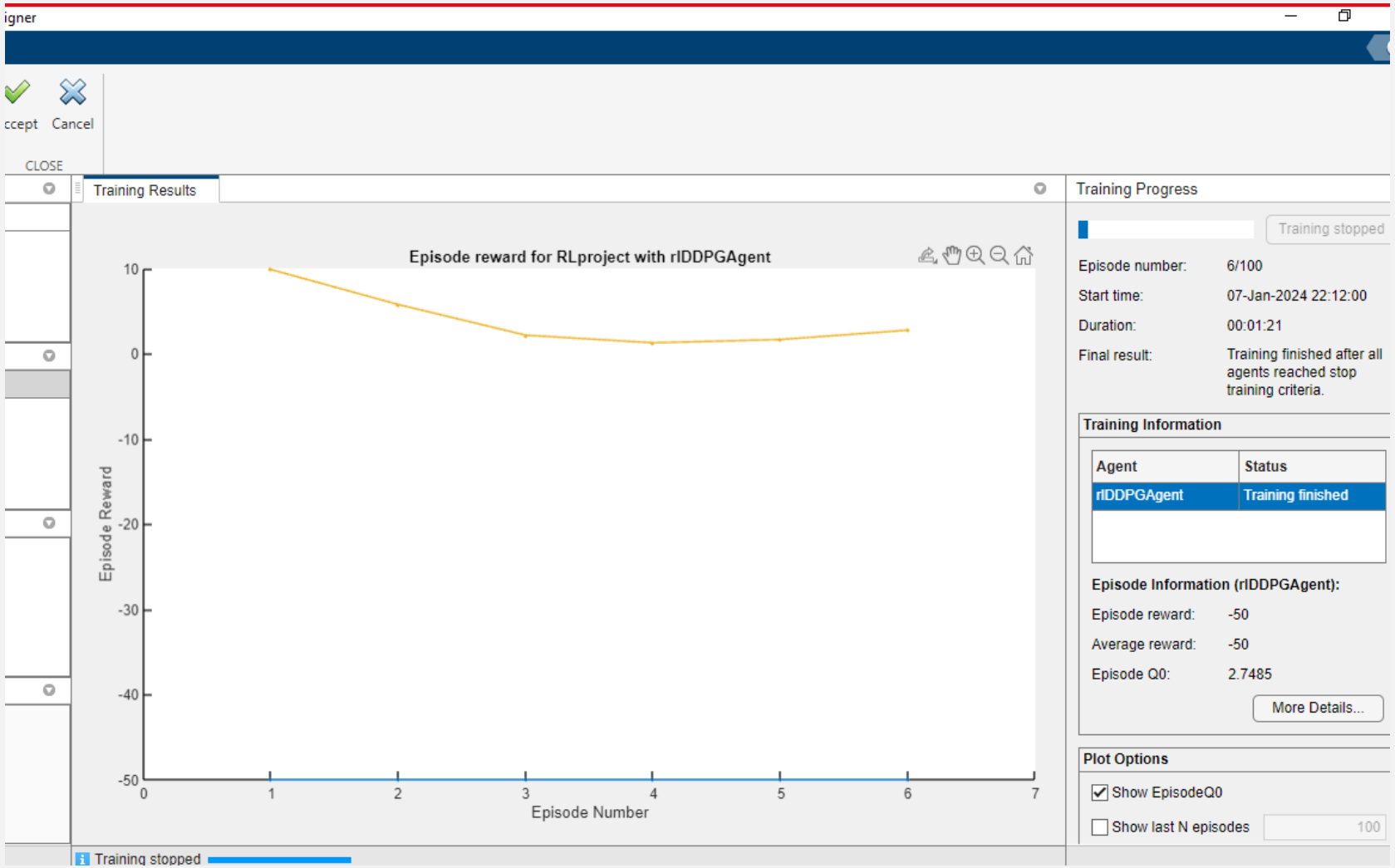
Stopping Block



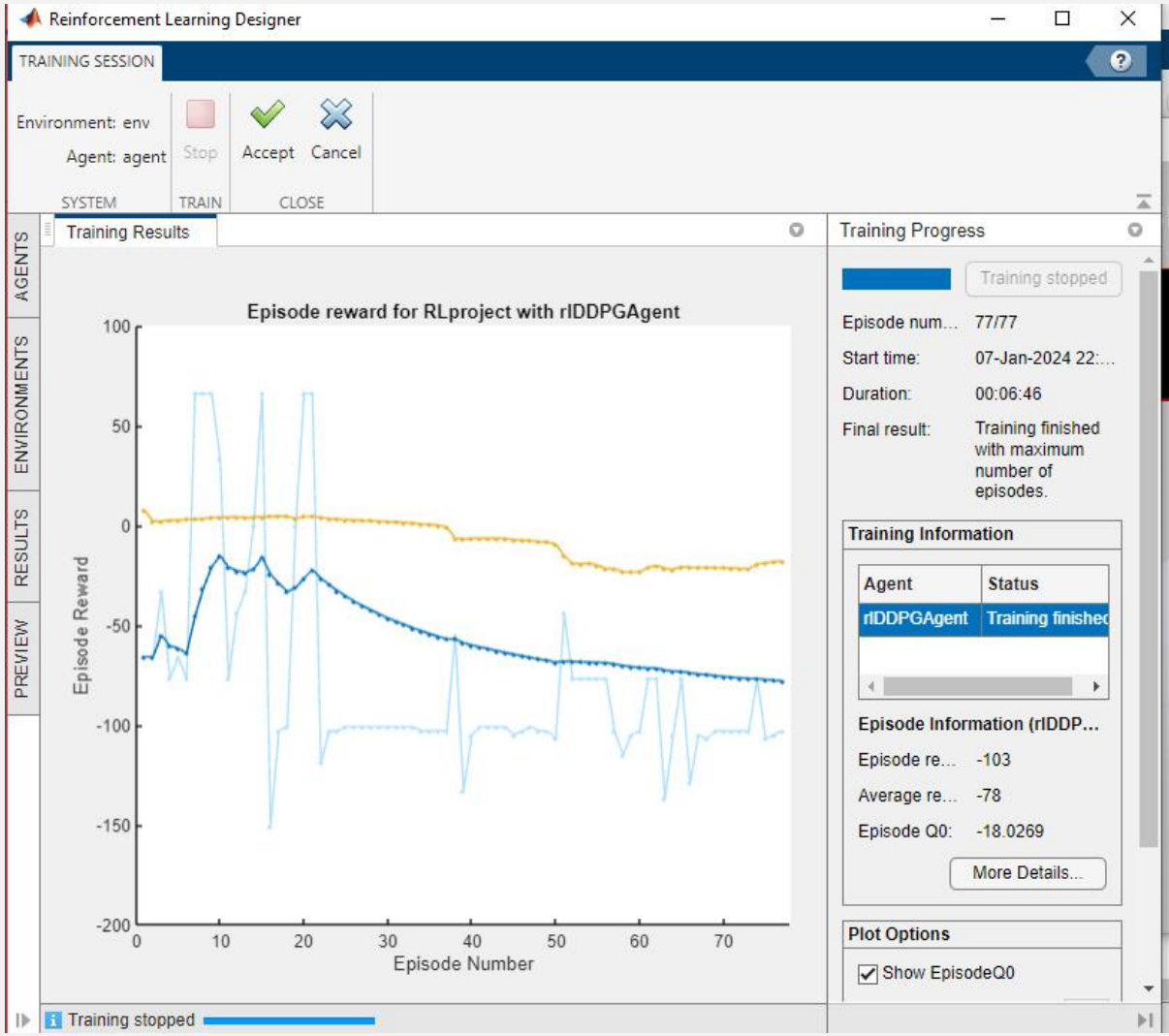


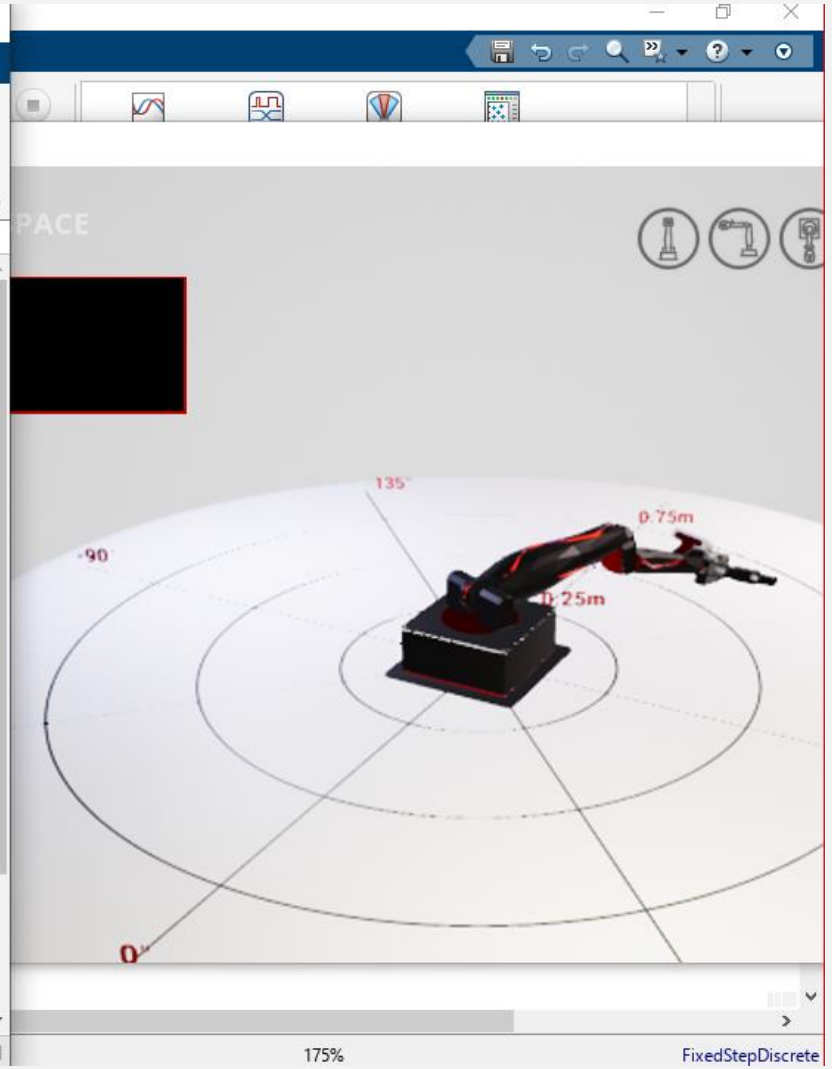
Experiments

Reward Error	Max Episode	Max episode length	Average Window length	Stopping criteria	sample time
0.35	50	50	5	average reward=-1000	0.1

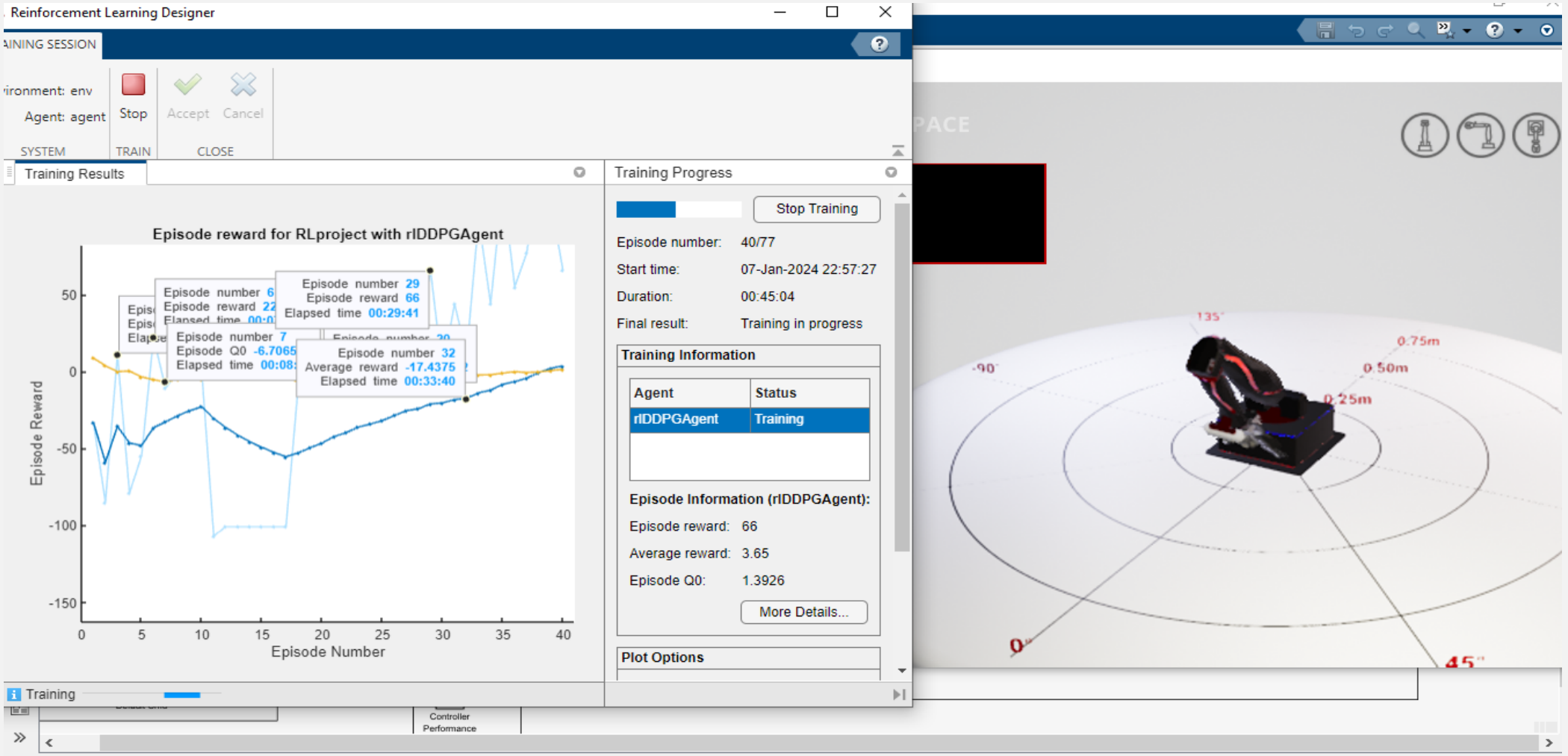


Reward Error	Max Episode	Max episode length	Average Window length	Stopping criteria	sample time
0.75	77	77	77	average reward=-1000	1

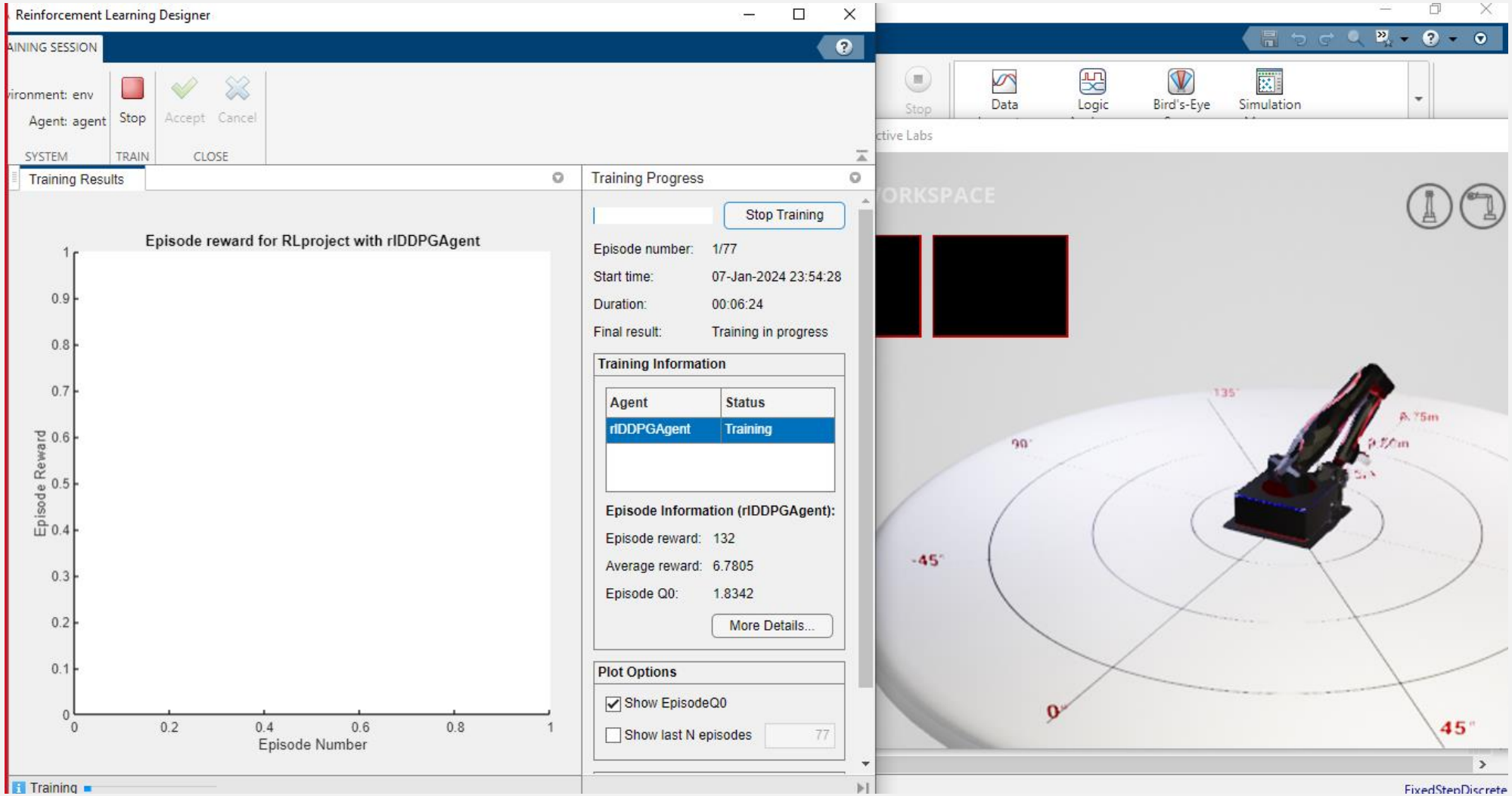




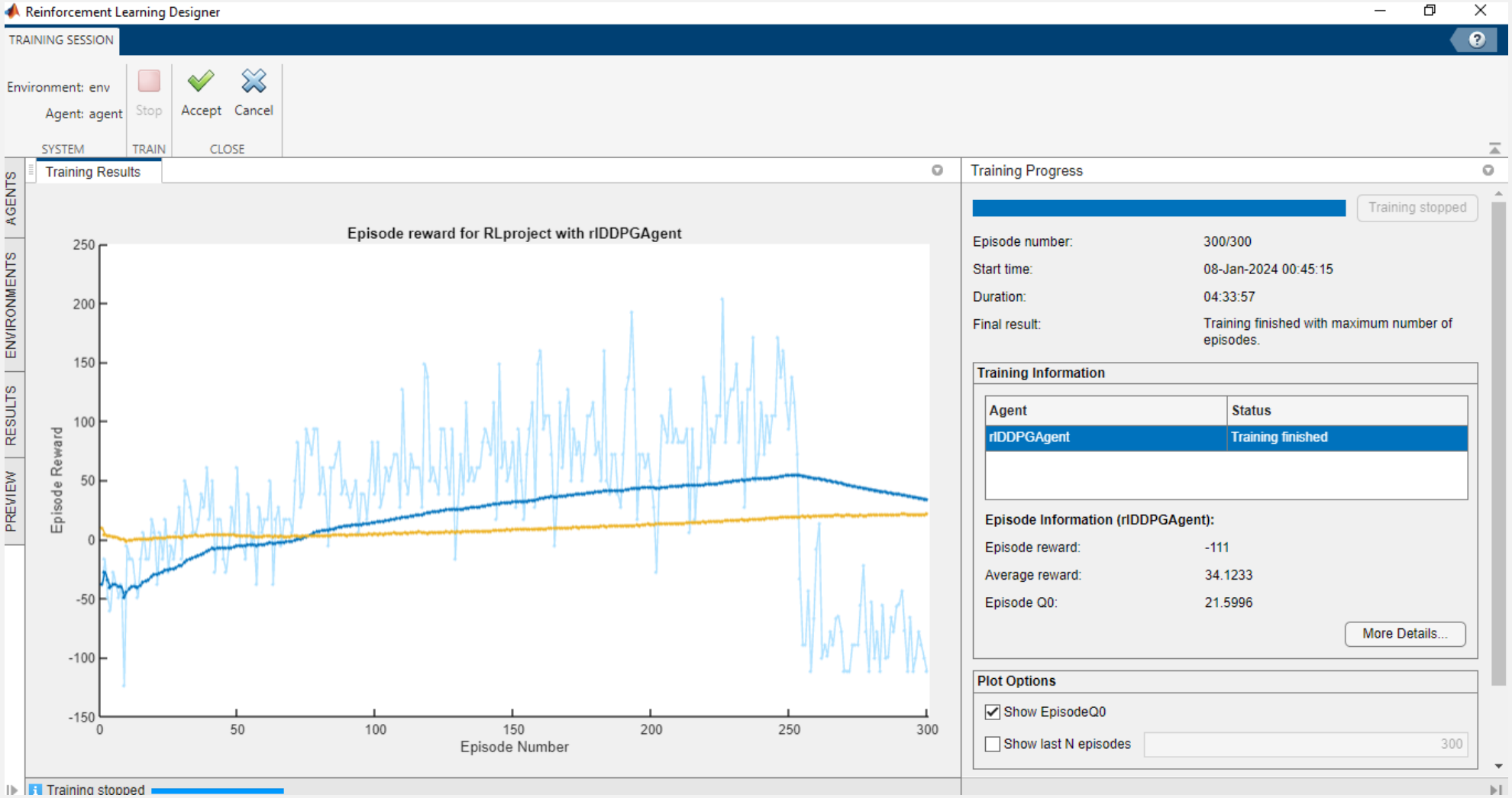
Reward Error	Max Episode	Max episode length	Average Window length	Stopping criteria	sample time
0.51	77	77	77	average reward=-1000	1

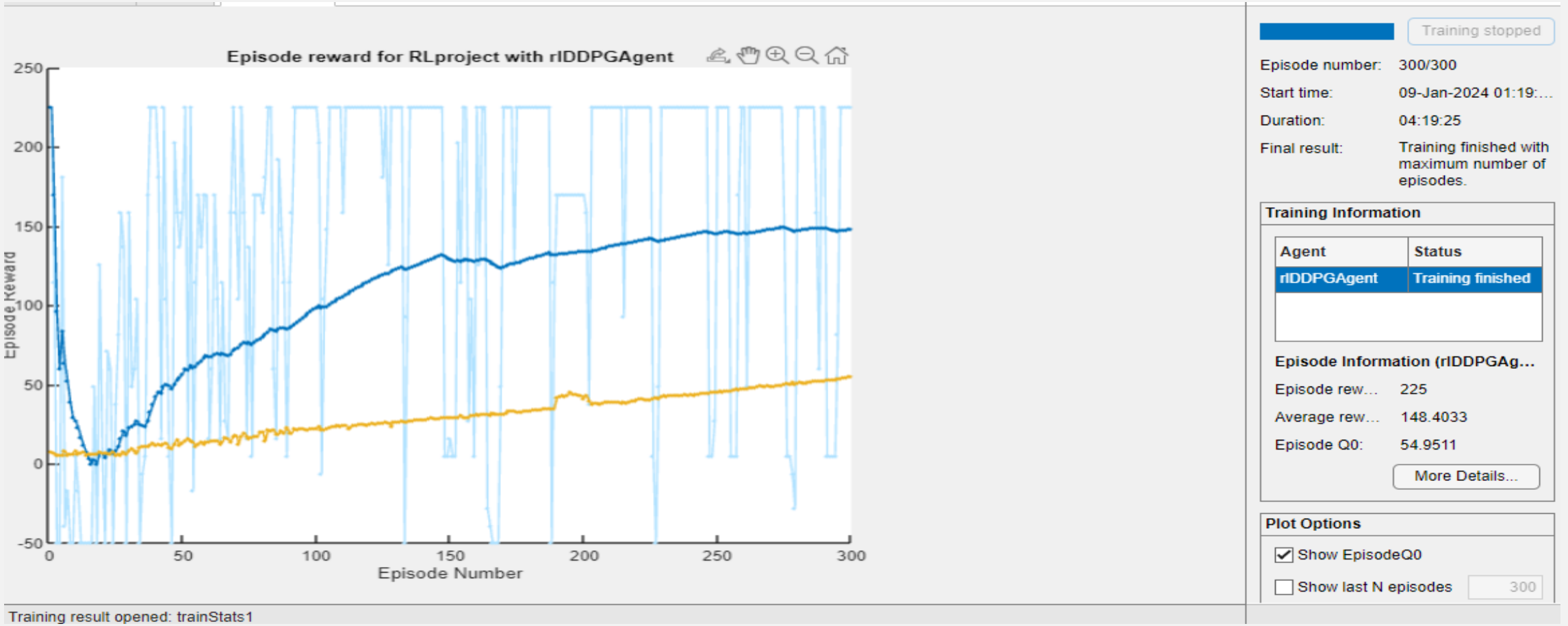


Reward Error	Max Episode	Max episode length	Average Window length	Stopping criteria	sample time
0.51	77	77	77	average reward=-1000	-1



Reward Error	Max Episode	Max episode length	Average Window length	Stopping criteria	sample time
0.51	300	50	300	average reward=-1000	1



Reward Error	Max Episode	Max episode length	Average Window length	Stopping criteria	sample time
0.51	300	50	300	average reward=-1000	1

Reward	Observations
Last updated reward block	Last updated observation block