Start node
↓
move to start point
↓
vision request   (check contour vision)
↓
Vision move
↓
· · ·
↓
move (vision request again) → clear → send request
↓
move
↓
· · ·
↓
End cycle

Vision request (rule is always clear when request)
↓
is wait ——— no
↓ yes   ↓
Set refresh index
↓   ↓
is contain ——→ clear
↓   ↓
                request
                ↓
done ←——— wait (considering time out)

queue command
↓
requested
↓
Set accept
↓
received
↓
clear accept

Soft → PLC

+ Communicating flag (set interval 500 ms)

+ Process in operate

+ New cycle started

+ Finished one cycle

+ Cycle stop

+ Cycle force stop
   (when force stop, robot error stop)

+ Robot in Error

Soft → PLC

+ Communicating flag (set interval 500 ms)
+ Ready operate signal
+ Process in operate

+ New cycle started
+ Finished one cycle
+ Cycle stop
+ Cycle force stop
  (when force stop, robot error stop)
+ Robot in Error

+ Matched pattern index

+ Homing finish

PLC → Soft

+ Start operate
+ Stop operate
+ Patter index number (D)

+ Camera index number (D)

+ Direct home signal

+ matching signal (on and rising edge when matching failed and waiting)

ready for operation ON

wait start operation

in operation signal ON

cycle stop signal ON

force stop signal ON

Start
↓
if gripper close → open ⌐
↓ |
request vision ← ⌐   → checking for certain
↓
move to picking position
↓
close gripper
↓
move out of vision workspace
↓
checking workpiece handled → request and wait → end cycle
↓
move to place position
↓
place
↓
move out of placing zone
↓
end cycle