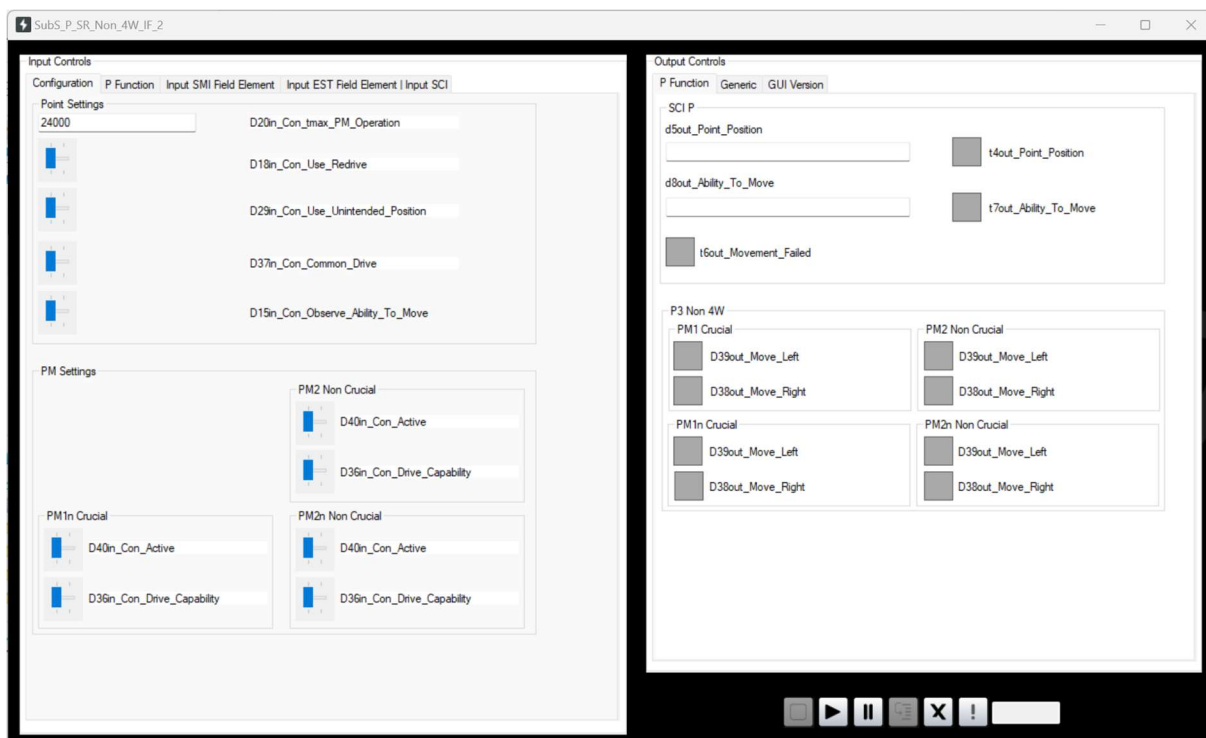# EULYNX Academy
Session 4: EULYNX Development Process

Part 1: How to download, open and run?

Step 1: Download the .zip file and unzip it. Some antivirus software may notify you about untrusted code. If needed, unzip the file in a quarantined location.

Step 2: In the folder 20230511 SCI-P Non4W GUI It 5, open the file SubS_P_SR_Non_4W_IF_2.exe

Step 3: The simulator should now open with on the left side the 'Configuration' tab and on the right side the 'P Function' tab.

Part 2: How to start a simulation (without redrive)?

To set up a configuration that resembles the case study specifications *Academy - Requirements specification for subsystem Point - without Redrive*, turn on the following configuration parameters:
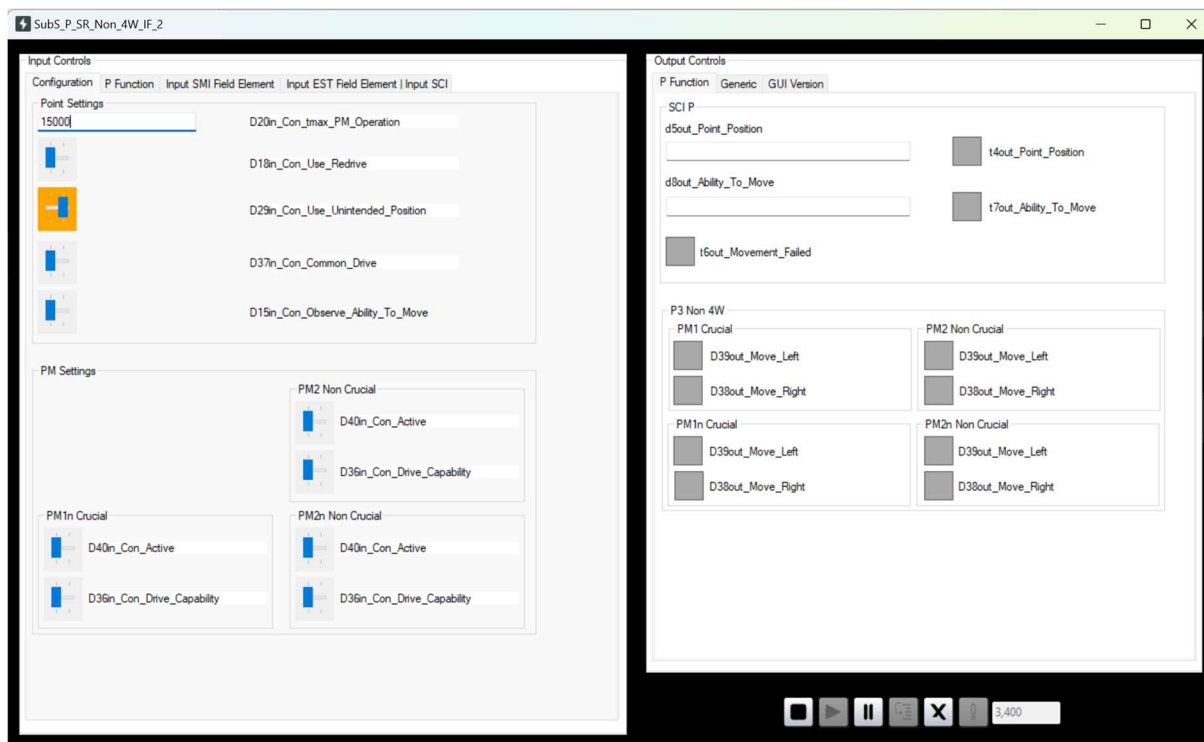
- D29in_Con_Use_Unintended_Position

All other parameters can be kept off.

The value of D20in_Con_tmax_PM_Operation can be set to a desired value (in ms).

Start the simulation by clicking the start arrow on the bottom right (it may take a few seconds before the simulation starts running).
Please note: Every time the simulation is stopped, the configuration parameter slides return to the default values. You have to set them again, before starting a new run.

Part 3: How to set up a simulation scenario?

While the simulation is running, go to the tab 'Input EST Field Element' on the left side and to the tab 'Generic' on the right side.
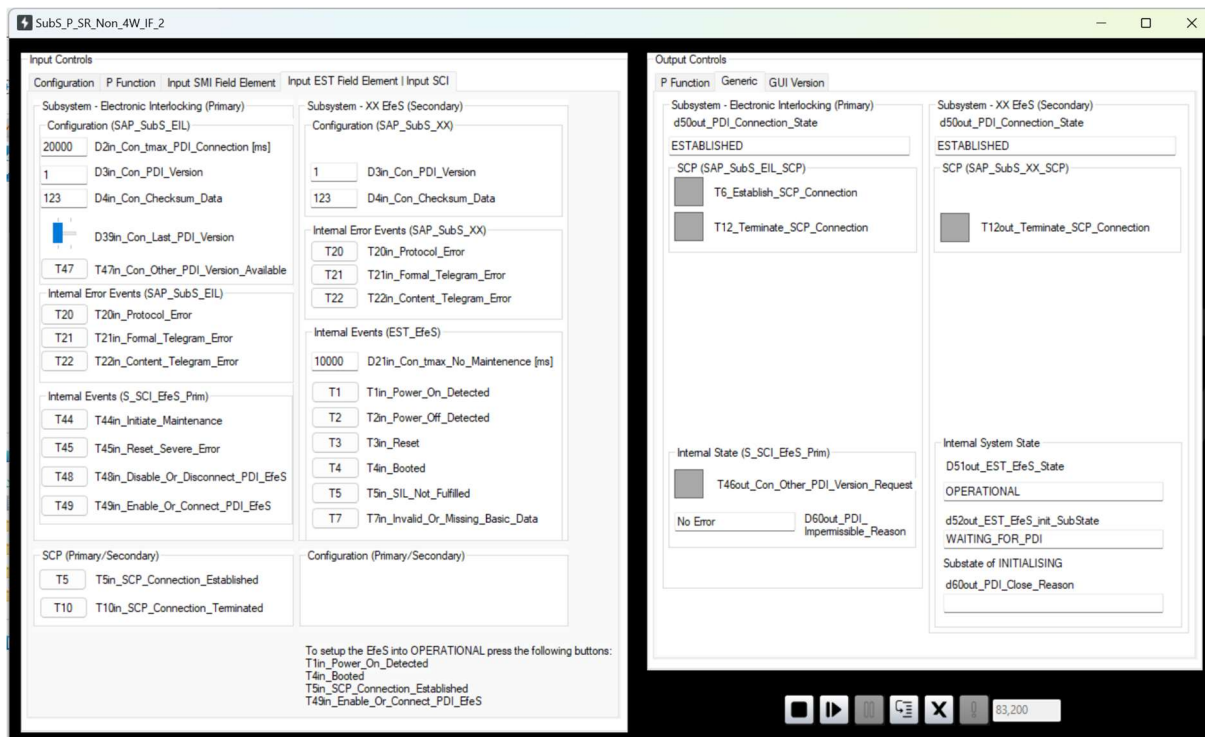
Follow the instructions on the bottom left, press the following buttons:
1. T1in_Power_On_Detected
2. T4in_Booted
3. T5in_SCP_Connection_Established
4. T49in_Enable_Or_Connect_PDI_EfeS

With this sequence, the state of the Subsystem – Electronic Interlocking (Primary) will change from DISCONNECTED_NO_SCP to ESTABLISHED
The state of the Subsystem – XX EfeS (Secondary) will change from NOT_READY_FOR_PDI_NO_SCP to ESTABLISHED.

This represents a state in which the Subsystem – Point is operational and in active communication with the Subsystem – Electronic Interlocking.
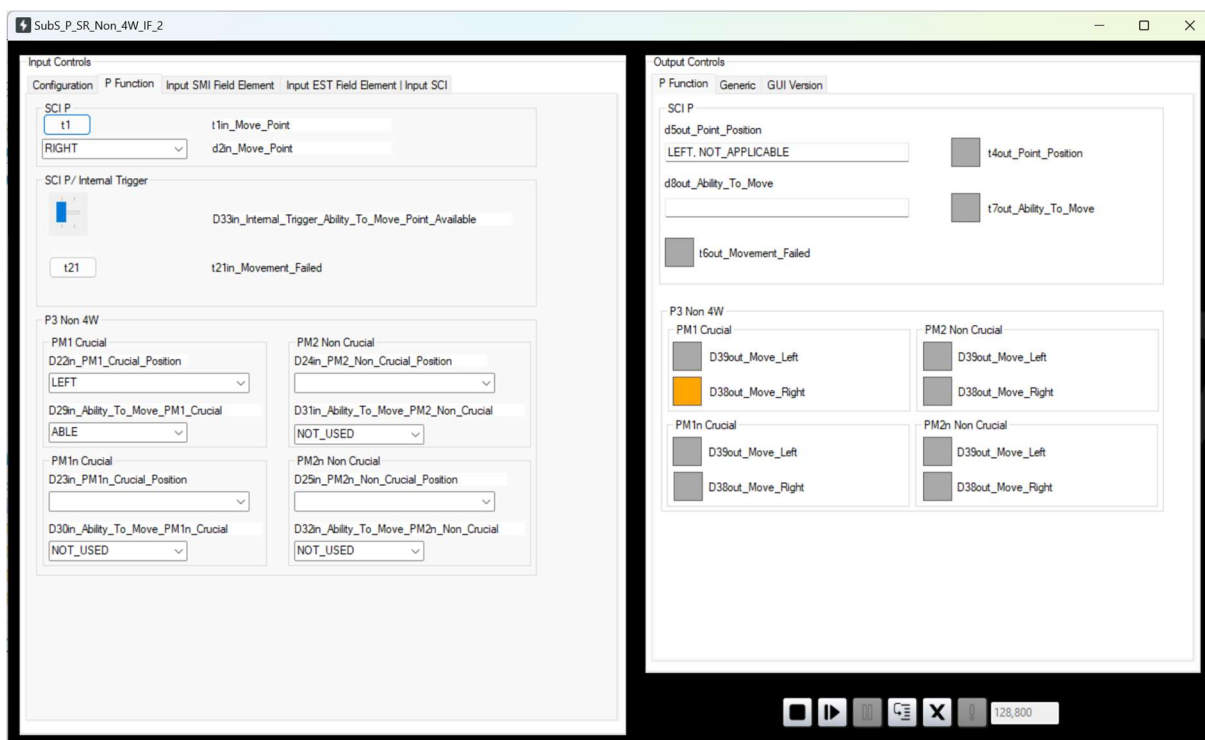
Part 4: How to run a simulation scenario?

Go to the tab 'P Function' on the left side and to the same tab on the right side.

In the box PM1 Crucial, the drop down field D22in_PM1_Crucial_Position represents the position of the moveable elements of the point, as detected by the single point machine. You can select an initially detected position from the drop down. You will see on the right half that the selected position is reported on the interface SCI-P to the Subsystem – Electronic Interlocking.

You can simulate a command sent from the Subsystem – Electronic Interlocking to the Subsystem – Point by selecting a value in the drop down d2in_Move_Point and then clicking the button t1in_Move_Point.

If you have selected a command direction that differs from the currently detected point position, you will see on the right hand side that the Subsystem – Point starts driving the PM1 Crucial, as D38out_Move_Right (or _Left) is turned on.

Please note: The simulator does not 'simulate' the physical driving of the point machine. In physical terms, it is expected that when driving from 'left' to 'right', the PM1 Crucial will detect the following sequence LEFT > NO_END_POSITION > RIGHT. These changed of the input value D22in_PM1_Crucial_Position have to be done manually by the tester.

If the detected position of the PM1 Crucial changes as expected in the success scenario, the output D38out will turn off as soon as the detected position corresponds with the commanded position.

If the change of detected position is too slow (longer than the value set for D20in_Con_tmax_PM_Operation), the output t6out_Movement_Failed will shortly light up and the D38out will also turn off. This represents a timed out point movement.

Part 5: Find the difference with Redrive

You can repeat the setup steps above, but with the different that you set the configuration slide D18in_Con_Use_Redrive to 'true'.

Can you identify operational scenarios in which the reaction of the Subsystem – Point differs when it is configured to use Redrive?