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| Mini Project  Control station with a collaborative robot controlled by PLC |  |
| Team members   |  |  |  |  | | --- | --- | --- | --- | | Last name | First name | Last name | First name | |  |  |  |  | | Students |
| Prepared by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **Supervisor** |
| Controlled by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **First team member** |
| Approved by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **Second team member** |
| Tests results confirmed by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **First team member** |
| Tests results confirmed by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **Second team member** |
| Tests results approved by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **Supervisor** |
|  | Sion, April 08, 2022 |
| Performance Qualification |  |

# The operator shall be able to abort the system with a software button 2.3.

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| **PQ ID** | **PackML command Abort** |
| 1 | From any state (except clear/clearing/starting) abort is pressed.  The initial state is:  An alarm is raised (y/n):  The final state is: |

# The operator shall be able to stop the system with a software button 2.2

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| **PQ ID** | **PackML command Stop** |
| 2 | From idle state a Stop command is set by operator.  The initial state is:  An alarm is raised (y/n):  The final state is: |

# There is an alarm to signal that the door is open. 2.6

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| **PQ ID** | **PackML command Stop** |
| 3 | From any state the door is open.  The initial state is:  An alarm is raised (y/n):  The final state is: |

# Bonus… The operator shall be able to hold the system. 3.1

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| **PQ ID** | **Check Hold** |
| 4 | While the robot is in Execute state, the operator presses the Hold button.  The final state of the display is:  The robot is still in motion (y/n):  : |
| 5 | While the robot is in Held state, the operator presses the Hold button again.  The final state of the display is:  The robot executes the next movement (y/n):  : |

# The robot shall be able to pick a part depending on its position on station three (3) and move it in front of a sensor on station four (4). 5.1

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| **PQ ID** | **Check Completing** |
| 6 | There are three (3) parts in station three (3)  The robot is placed in idle state.  The state in HMI is:  The operator press the start button.  The robot takes one part in station three (3) (y/n)  The robot goes to place the part on front of sensor in station (4) |

# The darkest part which must be unique in station three in any position must be placed in the centre of station four (4).5.2

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| **PQ ID** | **Check Completing** |
| 6 | There are three (3) parts in station three (3)  The robot is placed in idle state.  The state in HMI is:  The operator presses the start button.  The robot takes the **first** part in station three (3) (y/n)  The robot goes to place the part on front of sensor in station (4)  The robot places the part in station four (4) |
| 7 | The robot takes the **second** part in station three (3) (y/n)  The robot goes to place the part on front of sensor in station (4)  The robot places the part in station four (4) |
| 8 | The robot takes the **third** part in station three (3) (y/n)  The robot goes to place the part on front of sensor in station (4)  The robot places the part in station four (4) |
| 9 | The darked part is in the centre of station four (4) |

# If one part is missing to complete station (4), the system should detect it and raise a Stop with event on ST 03. The missing part is completed, and the robot should continue after resetting by taking the completed part. 5.7

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| **PQ ID** | **Check Completing** |
| 10 | The operator places two parts in station three (3). The sensor does not see the missing position, that is there is a part on the closest position to the sensor.  The robot is placed in idle state.  The state in HMI is:  The operator presses the start button.  When the system detects the missing part, an alarm is raised with a stop for station 3 (y/n) |
| 10 | The operator completes the missing part and if needed, the part left during the stopped movement.  The system is restarted to Execute state.  The system completes successfully station four (4) |