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| Mini Project  Control station with a robot controlled by PLC |  |
| Team members   |  |  |  |  | | --- | --- | --- | --- | | Last name | First name | Last name | First name | |  |  |  |  | | Students |
| Prepared by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **One team member** |
| Controlled by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **Second team member** |
| Approved by:   |  |  |  | | --- | --- | --- | | Name | Signature | Date | |  |  |  | | **Supervisor** |
|  | Sion, April 8, 2022 |
| Functional Specification |  |

# The operator shall be able to use the Emergency stop of the robot and monitor the state of the system on the HMI TP700s.

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| **FS ID** | **Description** |
| 1.1 | There is a communication between the robot and the PLC. |
| 1.2 | If the operator pushes on the emergency stop, a signal is sent to the PLC and raise an abort event. |
| 1.3 | An abort event sends a command abort to the state manager of the PLC program |
| 1.4 | The display TP700 has a screen with an overview of the PackML state. |

# The robot shall be able to pick a part depending on its position on station one (1) and move it in front of a sensor on station two (2).

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| **FS ID** | **Description** |
| 2.1 | The robot has a gripper to pick the parts. |
| 2.1 | The robot contains sub programs to control the gripper, pick one part and move it in front of a sensor. |
| 2.3 | A laser sensor measures the position of the parts on station one to define on which of three positions the part must be picked. |
| 2.4 | The PLC select a program number depending on the position of the part on stations one and send a command to the robot with the selected program number to activate. |

# Next Function

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| **FS ID** | **Description** |
| 3.1 | The next function is |
| 3.1 | … |