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| **User Story / Requirement ID** | **User Story/Requirement Under Test** | |
| TOUCHPEN\_PREC | Actuator precision must be +/- 1mm of tolerance | |
| ***Is it valid?*** |
| Yes |
| ***If not valid, what is the new/Extra information from Marketing/Product Owner?*** | | |
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| **Test Case ID** | **Test Case Name** | |
| 001 | Precision of actuator/touch pen | |
| **Test Case Steps** | | |
| **Step Number** | **Step description** | **Expected Result** |
| **1** | Apply a grid map on the base of the SPARC. Grid Map should have a separation of a square of 3mm per side. | Grid map applied |
| **2** | Set a coordinate to a desire position and apply a touch press movement. | Actuator Moves to the set coordinate and actuator applies a press movement. |
| **3** | Check if the touch pen gets to the desire position by looking on the square grid that presses. | Pen should be on the desire square grid |
| **4** | Get the actuator up, then applies a new coordinate and repeat a press movement | Actuator should get the pen up, gets to a new coordinate and apply a press movement |
| **5** | Check if the touch pen gets to the desire position by looking on the square grid that presses. | Pen should be on the desire square grid |
| **6** | Set the coordinates of actuator to the initial default position. Then applies a touch movement | Actuator should move to the default position and applies touch movement on the square grid. |
| **7** | Set the coordinate of the actuator to a new coordinate, apply a touch movement, then get the actuator to a default position. Apply a new touch movement. | Actuator should move to a new position, apply a press and then get back to default position. In default position should apply a press and it has to be the same square grid than the 6th step square grid. |

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| **User Story / Requirement ID** | **User Story/Requirement Under Test** | |
| X\_Y\_MOV | X and Y axis movement must be automatic. Must have a predetermined default position and move to it when desired. | |
| ***Is it valid?*** |
| Yes |
| ***If not valid, what is the new/Extra information from Marketing/Product Owner?*** | | |
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| **Test Case ID** | **Test Case Name** | |
| 002 | Movement of the actuator to a set coordinate | |
| **Test Case Steps** | | |
| **Step Number** | **Step description** | **Expected Result** |
| **1** | Set communication SPARC-Computer | Communication enabled |
| **2** | Set a coordinate via Serial | Serial should apply the correct coordinate |
| **3** | Apply “GO” to SPARC | SPARC should move the actuator by step motors. Motors should position the actuator above the desire coordinate. |
| **4** | Set a new coordinate to move the actuator | Actuator should move above the desire coordinate. |
| **5** | Set the coordinate to be the coordinate from step 2 | Actuator should move to the same position that step 3. |
| **6** | Set the SPARC to position on the default position | Actuator should move to the default position. |
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| **User Story / Requirement ID** | **User Story/Requirement Under Test** | |
| Communication | Communication from the Serial to the SPARC must via UART. | |
| ***Is it valid?*** |
| Yes |
| ***If not valid, what is the new/Extra information from Marketing/Product Owner?*** | | |
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| **Test Case ID** | **Test Case Name** | |
| 003 | Communication Serial-SPARC | |
| **Test Case Steps** | | |
| **Step Number** | **Step description** | **Expected Result** |
| **1** | Configure baud rate. | Baud rate set |
| **2** | Via Serial, set a coordinate to SPARC. Then apply the movement | Moves the actuator to the position set. |
| **3** | Set to default position | Actuator moves to default position |
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| **User Story / Requirement ID** | **User Story/Requirement Under Test** | |
| Det\_ERROR | Detection of status of the process. A a confirmation should appear on the serial to confirm movement, when motor stops. Checks if it has been done correctly or not. | |
| ***Is it valid?*** |
| Yes |
| ***If not valid, what is the new/Extra information from Marketing/Product Owner?*** | | |
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| **Test Case ID** | **Test Case Name** | |
| 004 | Status of the process | |
| **Test Case Steps** | | |
| **Step Number** | **Step description** | **Expected Result** |
| **1** | Set communication of Serial-SPARC | Communication enabled |
| **2** | Set a coordinate and send it to the SPARC | Moves the actuator to the position set. Confirmation should appear on the serial |
| **3** | Set a new coordinate and send it to the SPARC | Moves the actuator to the position set. Confirmation should appear on the serial |
| **4** | Set a coordinate that surpass the limits of movement axis X,Y | Actuator should not move. Instead it notifies that the action cannot be done |
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| **User Story / Requirement ID** | **User Story/Requirement Under Test** | |
| CLI\_SLI | Actuator movement can be chosen to be a press movement. | |
| ***Is it valid?*** |
| Yes |
| ***If not valid, what is the new/Extra information from Marketing/Product Owner?*** | | |
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| **Test Case ID** | **Test Case Name** | |
| CLI\_SLI\_0 | Click by the pen | |
| **Test Case Steps** | | |
| **Step Number** | **Step description** | **Expected Result** |
| **1** | Set a coordinate and apply a push movement | SPARC should move the actuator by step motors. Motors should position the actuator above the desire coordinate. Afterwards, actuator should move the pen down then lift it up. |
| **2** | Re apply a push movement from the same coordinates | Actuator should not move from the actual position. It does move the pen downwards then upwards. |
| **3** | Set a coordinate and apply a push movement | SPARC should move the actuator by step motors. Motors should position the actuator above the desire coordinate. Afterwards, actuator should move the pen down then lift it up. |
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| **User Story / Requirement ID** | **User Story/Requirement Under Test** | |
| ACTP\_DEF | Actuator must initialize with a fixed default position | |
| ***Is it valid?*** |
| Yes |
| ***If not valid, what is the new/Extra information from Marketing/Product Owner?*** | | |
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| **Test Case ID** | **Test Case Name** | |
| ACTP\_DEF | Default Position of the Pen | |
| **Test Case Steps** | | |
| **Step Number** | **Step description** | **Expected Result** |
| **1** | Without power and with no objects on the device platform, force the servomotor (actuator) to have the pen downwards. | Touch pen should be on the click/slide position. |
| **2** | Power on the SPARC device. | Actuator should lift the pen on the default position lifting up the pen. Also, actuator should move to the default position on axis X and Y. |
| **3** | Apply a force to the servomotor trying to move the default position. Do not apply extreme force that could harm the actuator | Servomotor may change position during the force applied, however once the force has been released, it should go back to the default position |
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