3.1 Functional Requirements

| **Req#** | **Requirement** | **Comments** | **Priority** | **Date Rvwd** | **SME Reviewed / Approved** |
| --- | --- | --- | --- | --- | --- |
| ACCUR\_01 | The robot will start and end in the center of the Figure 8 on the blue tape | The location of the robot is important to ensure the robot will stay on track. | 1 | 11/9/22 | Aaila Arif |
| ACCUR\_02 | A variable will be created for the robot’s speed (robotSpeed), robot’s spin angle (robotSpinAngle), robot’s spin time (robotSpinTime), and robot’s color fade (fadeTime). | These variables will help us manage and troubleshoot our robot. The measurements will be determined during the test plan. | 2 | 11/9/22 | Aaila Arif |
| ACCUR\_03 | Set Sphero’s speed to robotSpeed. | Measurements will be determined during the tests. | 2 | 11/9/22 | Aaila Arif |
| ACCUR\_04 | Spin Sphero for robotSpinAngle degrees for robotSpinTime seconds. | To make the robot spin in a circle, the degrees will be set to 360°. | 1 | 11/9/22 | Aaila Arif |
| ACCUR\_05 | Sphero will stop for about a second. | Stopping the robot will ensure the robot doesn’t go off track. | 2 | 11/9/22 | Aaila Arif |
| ACCUR\_06 | Spin Sphero in negative robotSpinAngle degrees for robotSpinTime seconds. | To make the robot spin in a circle, the degrees will be set to -360°. | 1 | 11/9/22 | Aaila Arif |
| ACCUR\_07 | Sphero will stop again for about a second. | Stopping the robot will ensure the robot doesn’t go off track. | 2 | 11/9/22 | Aaila Arif |
| ACCUR\_08 | Repeat steps ACCUR\_03 through ACCUR\_7 five times. | A loop will be more straightforward instead of re-coding this program 5 times. | 1 | 11/9/22 | Aaila Arif |
| ACCUR\_09 | When Sphero is finished with the loop, the robot will begin fading its lights to colors of the rainbow. Each color will fade to the next color for about 0.125 seconds equaling 1 second. | Added collectively by team members. | 3 | 11/9/22 | Aaila Arif |
| ACCUR\_10 | Repeat step ACCUR\_9 five times. | A loop will repeat the color fade program 5 times so it will equal 5 seconds. | 3 | 11/9/22 | Aaila Arif |
| ACCUR\_11 | At the end, Sphero will speak, “I am the winner!” and will end the program. | The device’s volume must be on, so we can hear Sphero. | 1 | 11/9/22 | Aaila Arif |