INDUSTRIAL SCENARIO

O P E R A T I O N S

FIRST OF ALL ...

This robot is component of 3 parts:

1- The arm.

2- The Balloon.

3- The body, hitch contains the wheels & the base. And of course we have the battlefield. We will give more details in incoming parts.

The target of the robot is pop the balloon :

We going to reach the target by make 2 robots fighting through the sharp arm which made by the Fantastic mechanical engineer .And operated by the Fantastic electrical engineer .Then It is programmed and controlled by Fantastic engineers in IOT & AI . Finally, all these processes are followed-up and managed by Fantastic industrial engineers in the team . The tools are 3D printing to manufacture the parts and we will use aurdino and servos to operate the robot .We will also use web-programing langueges to control and linkage the parts.

1)ROBOT Dimensions:

This robot is component of 3 parts:

1- The arm.
2- The Ballon.
3- The body,whitch contains the base, the wheels & the motors. 85mm 155mm 100mm 122mm 122mm 490mm O P E R A T I O N S 1- ROBOT DIMENSIONS:

2-BATTLEFIELD DIMENSIONS:

to save values in data base for chosen motor based on the range slider. ON/OFF button: to turn the controller on/off to save values and run the arm. It will be (Wait for the green lights, Never step/jump over the guardrail, ROBOTS, stay on the FIELD during the MATCH, Players, stay off the FIELD during the MATCH and No wandering during the match).

3-OPERATING RULES.

4-CONTROL PANEL:

 Motor column: to choose which motor will be controllered. Value column: to shows the degree choosen by the slider and make sure of it. Degree column: to choose the degree of motor with range slider.

5-TECHNICAL OPERATION DETAILS:

Here the circuit has been designed to be composed of a 12V DC voltage source, a 5V DC voltage source, a microcontroller (Arduino Uno), L298n motor driver, two DC motors and a joystick to control the speed and direction of the motors. Moreover, the 12V battery is a rechargeable battery (Varicore). This battery is light and has a long lifetime. The recharging circuit is included, all these parts are connected and take values from database based on the degrees that taken from the control

panel, that taking a place on the server. The dimensions of the base and its area are good and fit with the dimensions of the arm and the location of the balloon , as well as suitable for the size of the wheels.

INTEGRATION TESTING:

 In the first stage I tasted each motor separately and now I'm trying to test them all together and result was positive because all the motors work perfectly. Balloon As we mentioned in the previous part, the distance between the balloon and the arm is excellent so that the arm can reach the balloon easily and pop it, in addition to the fact that the balloon is well fixed so that if there is wind the balloon does not fly The Part Result Body: Base At this stage, I collected all the base engines and tested them with each other and found that all of them work perfectly, in addition to that they endure for a long time. Body: Wheels All four wheels work well and excellent in addition to that they can bear the weight of the arm and the balloon well and can walk long distances. Arm: Motor2 Arm: Motor3 Arm: Motor4 Arm: Motor5 It works fine. It works fine. It works fine. It works fine. It has no defects and works perfectly, also there is no slow movement, on the contrary, it works quickly and regularly as well.