Aubo example project- Spray card

Introduction:

A paint manufacturer needs to test paints regularly. The testing procedure is done by spraying a small card with the test paint. It is very important that the paint is applied evenly and that it is applied in an exact amount. This consistency in application is hard to achieve by hand and so an AUBO robot is set up to perform spray paint the test cards.

Equipment, materials and requirements

The robot is equipped with a spray gun tool, which is connected to digital output 0 on the robot. Setting the digital output high will start the spray and setting it low will stop the spray.

The card itself is a 90mm wide and 150mm tall rectangle of paper put up against a wall within a spray cabin. The spray pattern should be as follows: The spray gun should make horizontal passes of the card while spraying. Each horizontal stripe on the card needs to overlap adjacent stripes by 66%. The width of a stripe is 90 mm, which means the vertical offset of each pass should be 90mm/3 = 30mm.

The paint manufacturer might want to change the parameters of the pattern later, so the program should give the option to change the parameters.

When the spraygun is turned on the initial spray will be slightly different from when paint is flowing freely. Therefore the spraygun should be started off the card, and then make the pass when the flow is consistent.

When the robot is not painting it should move to an idle or home position. This position indicates that the robot is not in operation and should make it easy clean or refill the spraygun.

Program

The program is written mostly as a lua script called ‘cardSpray.aubo’. This script is then integrated into a project on the AUBO robot. The files ‘commonLib.aubo’ and ‘cardSprayVariables’ contain general functions and the global variables used in the script.