1 CLASSPACK QUICK START

1.1 HARDWARE REQUIREMENTS

- Desktop or laptop computer with 600 MHz Pentium III-compatible processor or better

> *Note: 1 GHz or more is recommended and it is best to use a desktop machine with a separate graphics card, rather than an integrated graphics chip.* ***It is possible to encounter locks while running the simulation on a lower-class machine.***

- 1 GB of RAM (2GB or more recommended)
- 220 MB free hard disk space for the MSRS and CoroWare installation files. An additional 1.3 GB of free space will be necessary if you need to install Visual Studio Express Edition
- Super VGA (1024 X 768) or higher resolution video adapter and monitor
- Internal graphics card capable of supporting DirectX 9 or higher.

> *Note: See http://channel9.msdn.com/wiki/default.aspx/Channel9.SimulationInfo for more info on which graphics cards are supported.*

- Mouse or joystick

1.2 SOFTWARE REQUIREMENTS

- OS: Windows XP Professional or Windows XP Media Center or Windows Vista (with latest service pack)
- Visual Studio 2005, Professional or Express Edition (the Express edition is available for download from the following URL: http://www.microsoft.com/express/2005/download/default.aspx)
- Microsoft Robotics Studio 1.5 Refresh (available for download through the following URL: http://www.microsoft.com/downloads/details.aspx?FamilyId=73092FF6-E37B-45C6-8E5E-C23D5D632B1E&displaylang=en)

> *Note: The ClassPack deploy was created using the refresh version of MSRS 1.5. You will need to download and install this version in order to successfully run the ClassPack.*

1.3 INSTALLATION

1. Run "CoroBotSimulationDeploy.exe".

> *Note: You may receive a security warning telling you the publisher could not be verified. Are you sure you want to run the software? Click Run to continue.*

2. Accept the End-User license agreement by clicking **Accept.**
3. Point the deploy extractor at the root of your MSRS installation. Typically, this is: "`C:\Microsoft Robotics Studio (1.5)`". Click **OK** to start the installation.
4. You may be informed that the operation will overwrite files; Click **Yes** to continue.

5. Upon successful installation, the ClassPack Reference guide will appear and you will be ready to start using ClassPack by running the office simulation.

1.4 RUN THE OFFICE SIMULATION

1. In your MSRS root folder, run: "`runsimulatedcorobot.bat`" to start the ClassPackEnvironment project.
2. The first time you run the software, you should receive a message box prompting you to enter a GUID (see Figure 1). The GUID should have been provided to you via email when you purchased the product. You will need to enter this GUID to install the license on your local machine. If you cannot locate your GUID, you have the alternative of clicking Install Trial Demo to install a 15-day trial version.

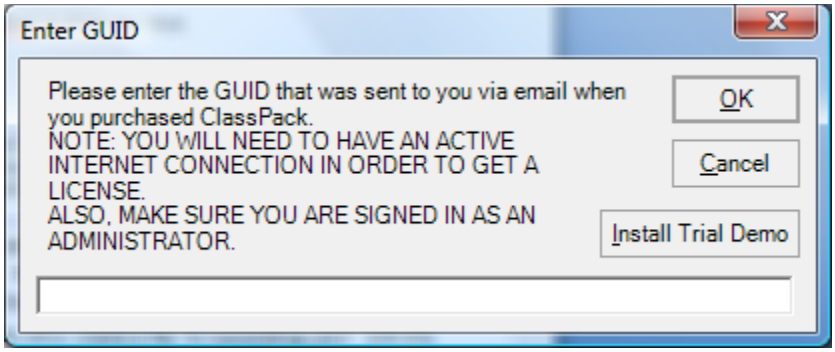

Figure 1: First time users will be prompted to enter a GUID or install a 15-day trial license.

3. Once loaded, the simulation should appear with the CoroBot located in an Office Environment (see Figure 2).

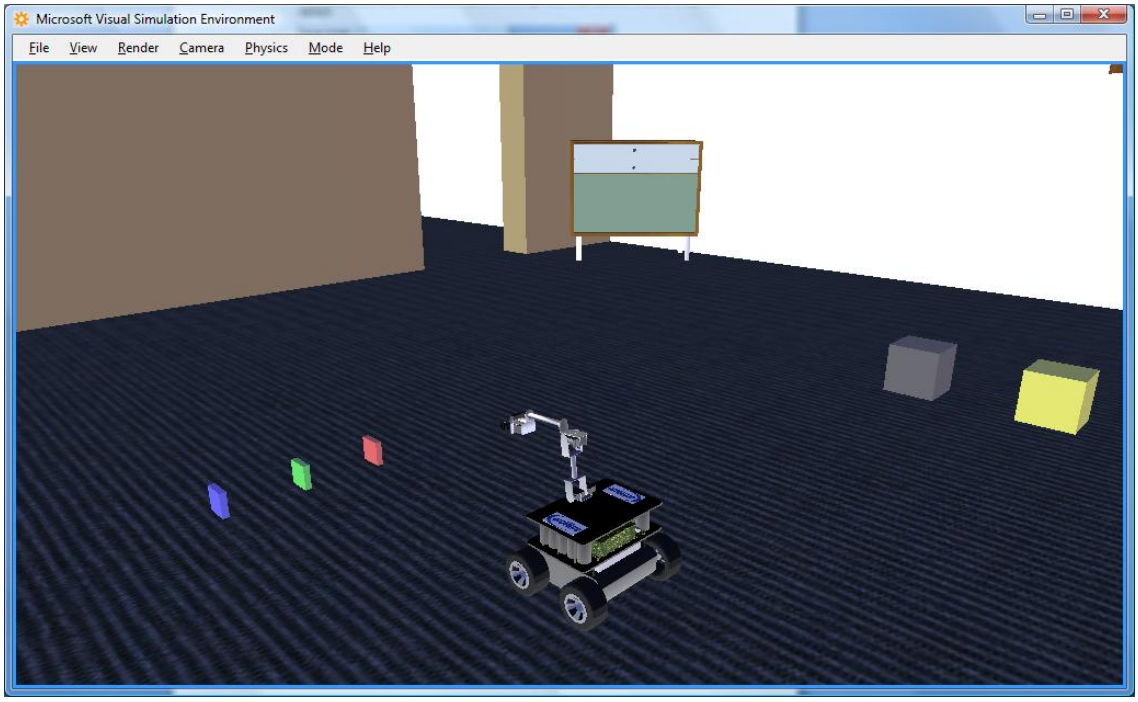

Figure 2: The ClassPackEnvironment simulation will render a simulation scene in which the CoroBot is located in a two room office.

4. **You can look around the simulation room by holding down the left mouse button and dragging the mouse around the scene**. The Office environment includes two rooms that contain various pieces of office furniture. The first includes small blocks that can be picked up using the CoroBot arm. These blocks can then be placed on top of the larger blocks located to the right of the robot.

   The second room features an enclosed robot arena with traffic cones. **To move from one room to another, use the arrow keys on the keyboard.**

> *Note: The office environment features an open ceiling. This allows you to angle the view upwards using the mouse and then use the up arrow key to fly up above the simulation scene. You can then look down by turning the view downwards again using the mouse. See Figure 3.*

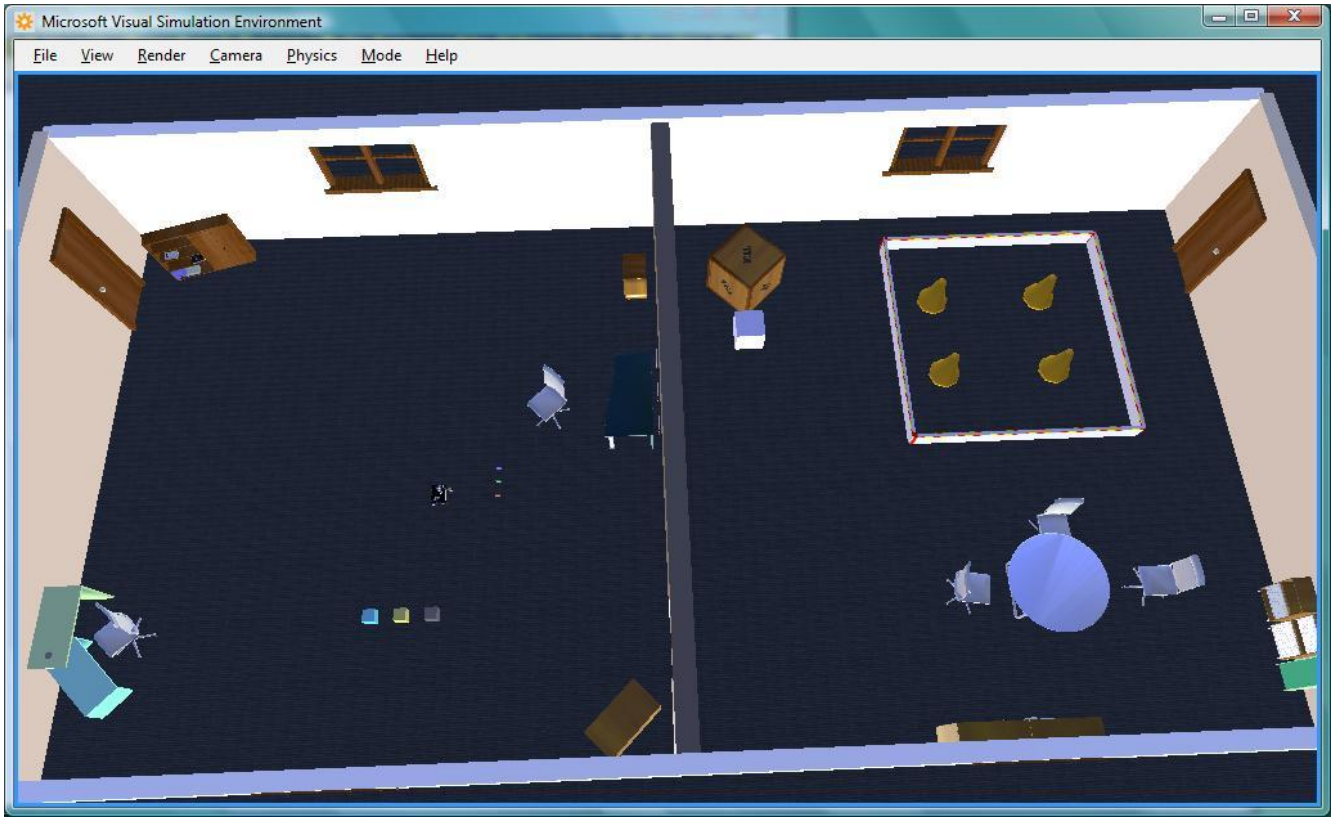

Figure 3: Screenshot of the ClassPackEnvironment as seen from an angle above the office.

5. To operate the robot, switch to the Control Panel and connect to the CoroBot by entering 'localhost' as the IP Address and clicking **Connect**. Once connected to the robot, you should see an image appear in the right-hand Camera pane which reflects what the robot is seeing (see Figure 4)

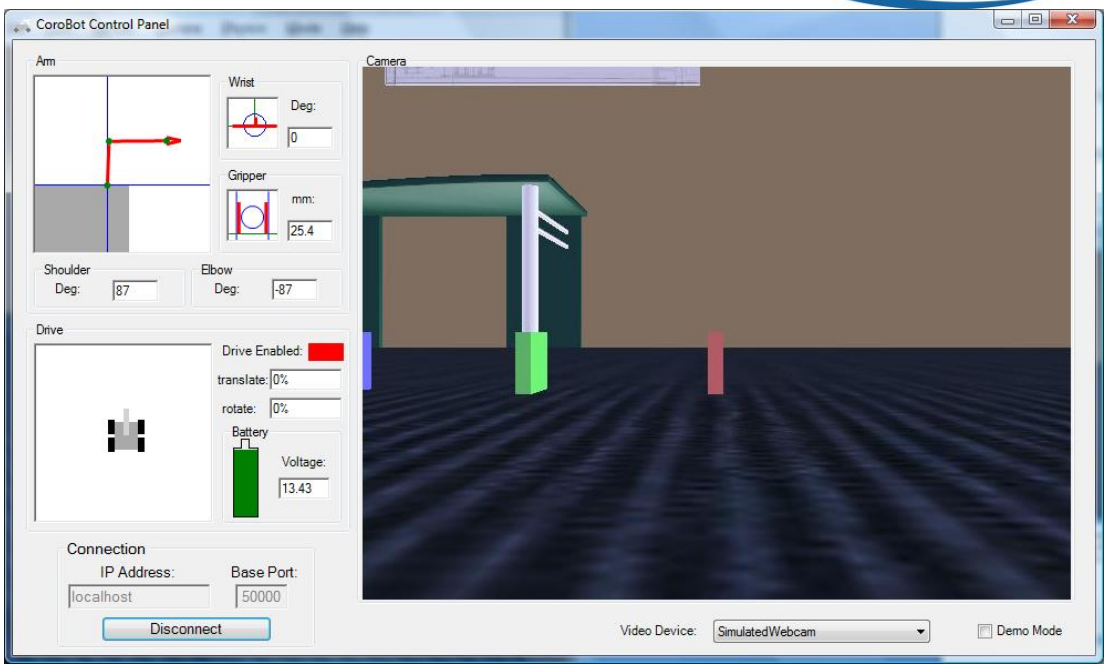

Figure 4: The CoroBot Control Panel allows the user to see the environment from the robot's perspective.

6. To drive the robot, you will need to click within the Drive box (located at the bottom left of the Control Panel. You can then see the robot moving through the simulation scene. At the same time, you can see the room changing as you view the scene through the Control Panel camera.

   Note: Use caution when driving the robot into obstacles. Driving the obstacle into a wall may cause problems with the arm.

7. To operate the arm, click the red arm located in the top left of the Control Panel. Drag the arm down until it falls below the positive x-axis line. At this point you should be able to see the gripper through the Control Panel camera.

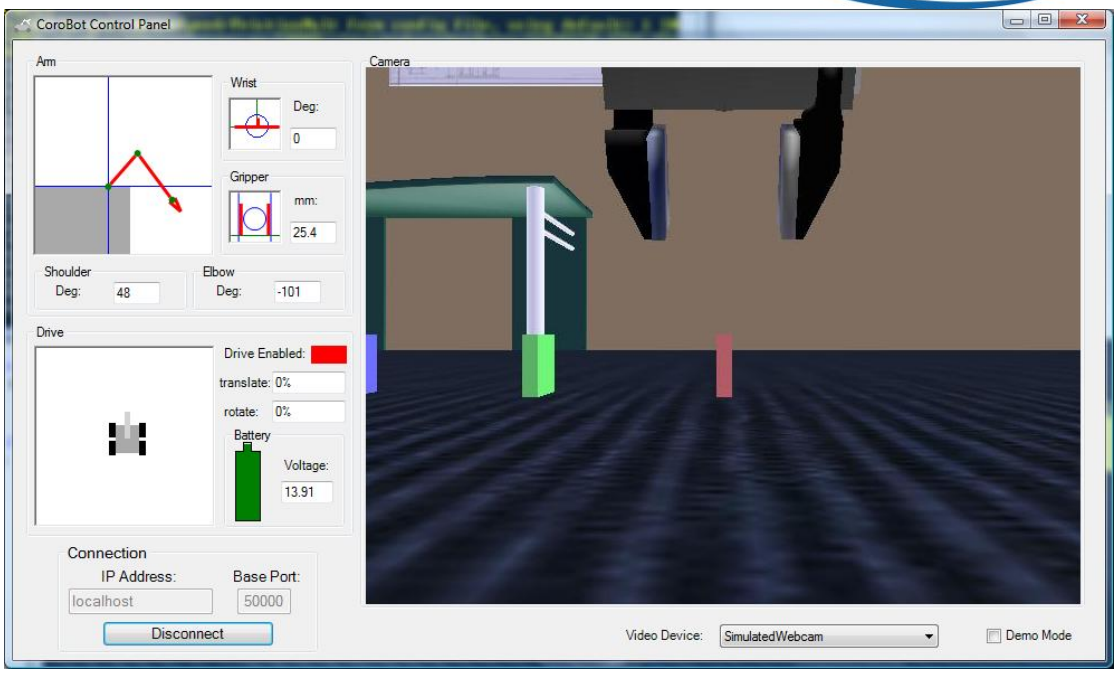

Figure 5: Lower the arm until it is within view of the web camera.

8. To grab an object with the gripper, drive the robot forward with the arm located slightly above the object. You should notice that red IR dots are focused directly on the object. Move close enough so the arm is positioned above the object. At this point, a blue line should appear in the arm window. This represents the position of the object. When you are aligned directly above it, you can lower the arm until the gripper is open around both sides of the object. (See Figure 6)

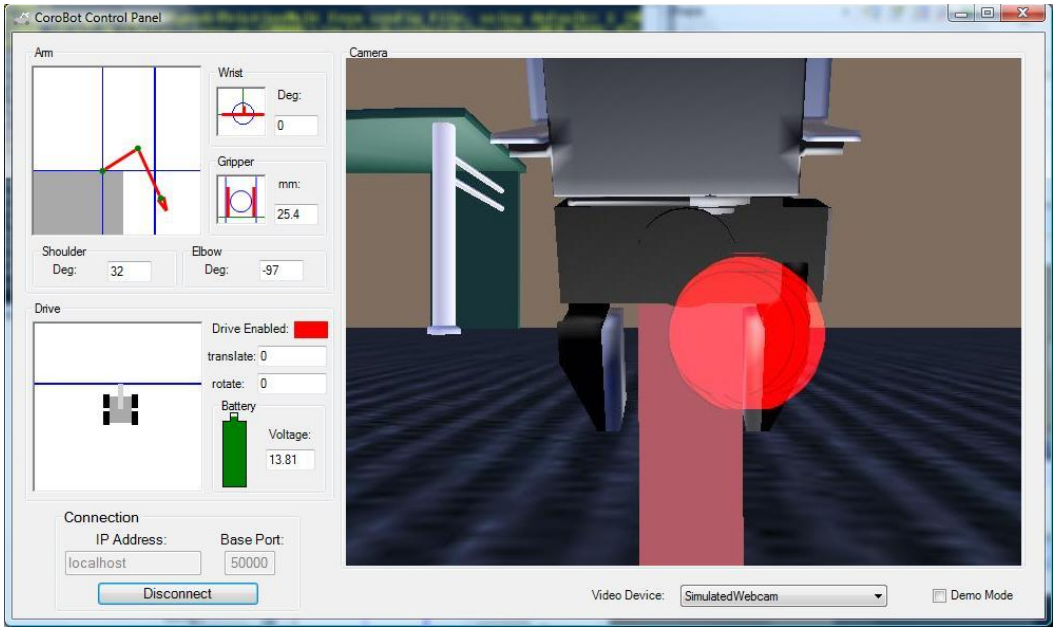

Figure 6: Gripper is positioned around both sides of an object.

9. To grip the object, drag the mouse over the right-hand red line in the gripper window, click the right mouse button and drag the line towards the other line. This should cause the gripper to close onto the object. Once the gripper window shows that the two lines have merged into one,

you can lift the object by clicking the red arm within the arm window and raising the arm upwards (see Figure 7).

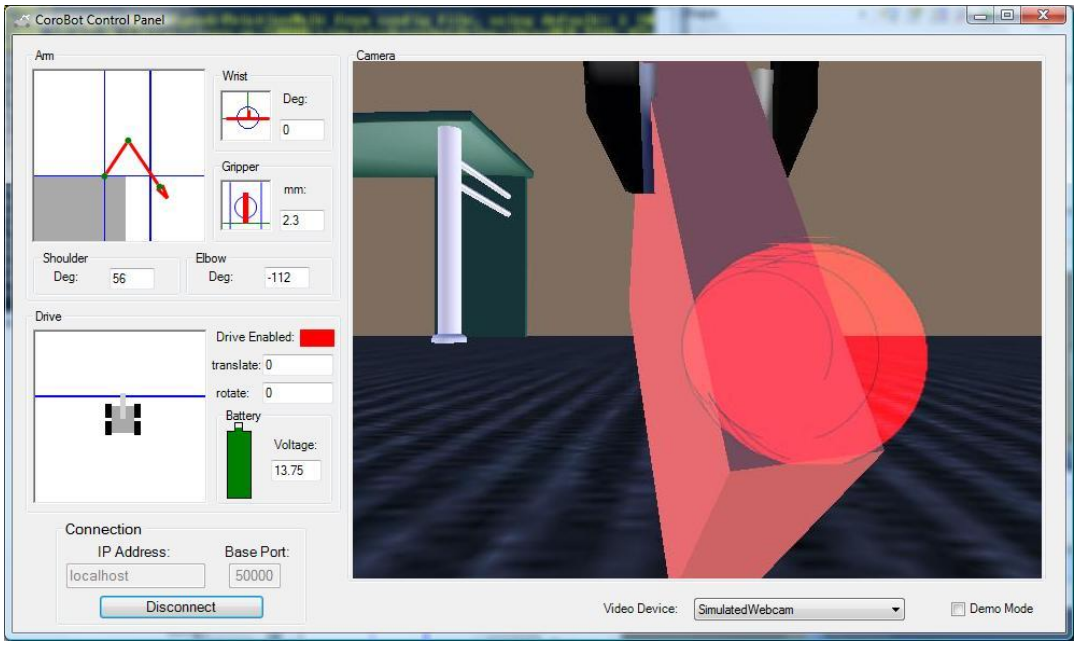

Figure 7: Gripper has closed around an object and is lifting it upwards.

1.5 BUILD/CONFIGURE SAMPLE CODE

Note: The ClassPack code is included only in assembly form. So there is nothing to compile. The code is usable out of the box. However, there is a small amount of sample code included. This section describes how to use and configure the sample code.

1. The sample code is located at: "`C:\<your MSRS root>\samples\CoroWare\ClassPack\` includes two projects: `SampleSimulation and ClassPackEnvironment`. Both projects will allow you to operate the CoroBot using the CoroBot Control Panel.
2. To compile and run either of the sample code projects, open the project and press F5.
3. To change the default IP name in the CoroBot OCU, create a file: "`C:\uiconfig.xml`" with this text:

```
<?xml version="1.0" encoding="UTF-8" ?>
<XMLConfig>
    <CoroBotUIConfig>
        <DefaultName>localhost</DefaultName>
        <DefaultPort>50000</DefaultPort>
    </CoroBotUIConfig>
</XMLConfig>
```

Or you can use the `uiconfig.xml` file located in your MSRS root.

> *Note: The standard config.xml file must be used when utilizing PID control. See Corobot Simulated Drive Service in the ClassPack reference guide for more information about which PID parameters must be added to this config file.*

1.6 LICENSING

ClassPack will be available through two licensing schemes. An unlimited license will allow ClassPack to be installed and run on a single computer with no expiration date for a suggested retail price of $300. A limited license will allow ClassPack to be installed on a single computer for the duration of a class term for a suggested retail price of $100. CoroWare ClassPack pricing will include volume discounts

The first time you use the ClassPack services in a simulation, you will be prompted to enter a GUID. This GUID should be provided to you when you purchase the license. If you cannot locate this GUID or one was not provided to you, you have the alternative of installing a one-time only 15-day trial version.

> ***Note: Please contact CoroWare customer support (support@coroware.com) if you feel that legitimate license issues are preventing you from trying the software.***