**Basic requirement is a laptop running Windows 7 or later.**

It need not be very fast but it needs at least 2GB of RAM. Less CPU and display allows for longer battery life and better portability at the venue.

1. **Basic communication sufficient to collect images and adjust settings in the vision system**

* Assign a static IP address t the wired network port
  + Open network and sharing center
    - Double-click ‘TCP/IPv4’
    - Try using the “Alternate Configuration” tab. It may be possible to leave DHCP set up in the ‘General’ tab and still communicate with the BeagleBone
    - If the alternate setting doesn’t work, click “use the following IP address” and enter
      * 10.42.76.14
      * 255.255.0.0
* Download and install PuTTY

<http://www.putty.org/>

Verify that it works by using SSH to connect to the BeagleBone at 10.42.76.12

* Right-click “This PC” and select “Map network drive…”

Map [\\10.42.76.12\viking](\\\\10.42.76.12\\viking) to “R:\”

user: ubuntu

pw: temppwd

Verify that the folders and files on the BeagleBone can be seen on the “R:\” drive

1. **Obtain source code**

Install GIT and TortoiseGIT

<https://git-scm.com/downloads>

<https://tortoisegit.org/download/>

Verify installation by downloading the source.

* + Right click your ‘Documents’ folder and select ‘Git Clone…”
  + URL: <https://github.com/Team4276/2016_VisionSystem>
  + (Directory will automatically be set to “….\Documents\2016\_VisionSystem”)
  + Remaining settings are OK by default – just click ‘OK’
  + This and other ‘HowTo’ docs can be found in “….\Documents\2016\_VisionSystem\docs”
  + Copy the “….\Documents\2016\_VisionSystem\viking\_mpg\_streamer” folder to R:\home\ubuntu

1. **Install and configure NetBeans**

* Install the latest JDK and NetBeans 7.4

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

<https://netbeans.org/downloads/7.4/index.html>

* + Need C++ version as a minimum, but if want to develop Java too you might as well get the “All” version.
* Set up NetBeans for remote debugging.
  + <http://mechomaniac.com/BeagleboardDevelopmentWithNetbeans>
  + Quick start:
    - Start NetBeans and open these three project files:

R:\home\ubuntu\viking\_mpg\_streamer\plugins\input\_uvc

R:\home\ubuntu\viking\_mpg\_streamer\plugins\output\_http

R:\home\ubuntu\viking\_mpg\_streamer

* + - Right click on any of the projects and choose “Set Build Host” 🡪 “Manage Hosts…”

Click “Add…”

Hostname: 10.42.76.12

Click “Next”

Login: Ubuntu

Click “Next”

Enter password when prompted (tempped)

Access files via “System level file sharing” (The “R:\” drive in this case)

Click “Finish”

Click “Path Mapper”

Local path is “R:\”

Remote path is “/”

* + - Right click on the other two projects and “Set Build Host” to 10.42.76.12

1. **Build executable, and install it on the BeagleBone**
   * The above only needs to be done once when setting up a computer for use with the Vision system. For details on how to build and install the vision program on the BeagleBone see “….\Documents\2016\_VisionSystem\docs\HowTo\_BuildAndInstallVisionSystemSoftware.docx”