Before you can run this tutorial, you will need to download some of the dlls mentioned in the Installation Guide.pdf.

We strongly recommend to read the Alvar.ppt which comes with the ALVAR SDK, and run their demos to have better understanding of how ALVAR works.

Make sure that you install OpenCV 1.0 as required by the ALVAR library.

Before you can run tutorial 8 with ALVAR, you will need a camera calibration file (calib.xml). Otherwise, Visual Studio will complain about the file being missing. There is a default calibration file (since version 3.5) in the Tutorial 8 folder initially, but it is best to calibrate your camera using ALVAR's SampleCamCalib project or CameraCalibration project under *GoblinXNAv3.6/tools* to generate a calibration file for best performance. Once calib.xml is generated, copy the file to Tutorial 8 folder. Now you can successfully build the project.

In order to make the tutorial work, please print out "groundALVAR.pdf" and "toolbarALVAR.pdf" and bring it to a place where the camera can see the array of ground markers (fiducials). You should see a green 3D sphere rendered on top of the center of array of markers as well as a red 3D box at one of the corner. The tracking will be more stable than holding it by your hands, if you put the print out (sheet of paper with markers) on a clip board or any type of flat rigid surface.

## Creating and using your own marker arrays

In order to use your own marker arrays, you will need to create both the marker array image and configuration file for ALVAR. We provide a tool, MarkerLayout, in the *GoblinXNAv3.6/tools* directory to make this process much easier, so we strongly recommend using this tool instead of creating those files manually which can be time consuming and error prone.