

## InterSense Tool for Matlab<sup>1</sup> Setup Guide

This document describes how to configure Matlab to use the InterSense Tool for Matlab and how to run the demo.

### InterSense Configuration

In order to use InterSense trackers with Windows, the InterSense software must be installed on the host computer. This software is provided with the tracker hardware and may also be downloaded on the InterSense web site. In addition to several utilities, this program should install a file 'isense.dll' into the C:\Windows\System32 folder and, on 64-bit systems, into the C:\Windows\SysWOW64 folder. NOTE: on 64-bit systems, the copies of isense.dll are different in the two folders. These DLLs must be properly installed so that the InterSense Tool for Matlab can interact with the InterSense hardware.

Prior to using the InterSense Tool for Matlab, it is recommended that the user run the ISDemo application (provided as part of the InterSense software package) to verify proper sensor operation.

### General Matlab Configuration

In order to use the InterSense Tool, it is first necessary to configure the Matlab path. Assuming that the InterSense Tool have been installed in a folder represented by

INTERSENSETOOLINSTALLDIR  
(typically C:\Program Files\Sensimetrics\InterSense Tool for Matlab\),

please add the following folders must be added to the Matlab path:

- INTERSENSETOOLINSTALLDIR
- INTERSENSETOOLINSTALLDIR\Demos

Once the appropriate folders have been added to and saved in the Matlab path, the InterSense Tool should be available regardless of the current Matlab working folder.

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<sup>1</sup> The InterSense Tool for Matlab has been developed with the support of the Army Hearing Program and the Walter Reed National Military Medical Center.

## InterSense Tool Demos

Assuming that the Matlab path has been properly configured to include the "INTERSENSETOOLINSTALLDIR\Demos" folder, the InterSense Tool Demos should be available to the user regardless of Matlab's current working directory.

Type 'help ISToolDemos' at the Matlab command prompt to see a list of available demos.

These demos are simple Matlab scripts that are designed to demonstrate the InterSense Tool functionality. They are intended to be stepped through in 'keyboard' mode.

### ISDemo\_Matlab:

This demo recreates the basic display from the InterSense 'ISDemo' application for an orientation tracker using a Matlab figure. For this to work properly, at least one attached InterSense tracker must have orientation output available. The image displays the current yaw, pitch and roll of the sensor in real-time and also updates a 3-D representation of the tracker body.

### ISDemo\_History:

This demo displays tracker orientation as well as the contents of the running 30-second orientation 'history' available through the InterSense tool. For this to work properly, at least one attached InterSense tracker must have orientation output available.

### ISDemo\_Callback:

This demo demonstrates how to assign a Matlab function to serve as the custom callback that executes in response to button presses on a connected InterSense tracker. For this to work properly, at least one attached InterSense tracker must have button output available.

In addition to these demos, the "INTERSENSETOOLINSTALLDIR\Demos" folder also contains various support functions used in the demos. The functions are commented and are self explanatory.