Infinadeck API Developer Manual

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	George Burger Jr	06-25-2019	B. Freeman	07-15-2019	Initial Release
1.1.4	George Burger Jr	07-30-2019	B. Freeman	07-30-2019	Update match to Software version 1.1.4

Infinadeck Template Version: 2018-07-09

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1 INTRODUCTION

This guide covers the installation and use of the Infinadeck API for Microsoft Windows 10. The Infinadeck API is distributed as an unmanaged DLL file containing functions for connecting to, communicating with, and disconnecting from the Infinadeck omnidirectional treadmill. Software that emulates the functionality and behavior of the treadmill can be used to test applications without physical treadmill hardware.

2 REQUIREMENTS

2.1 THE FOLLOWING ITEMS ARE REQUIRED

- Bonjour (https://support.apple.com)
- SteamVR Version: 1.2.10 or higher (Optional)
- Infinadeck Omni-Directional Treadmill (Optional)
- Infinadeck Unity Plugin (Optional)
- Infinadeck Unreal Plugin (Optional)
- Infinadeck Application (Optional)

3 SOFTWARE DOWNLOAD

The Infinadeck application software can be found in two download locations.

3.1 THE COMPLETE INFINADECK SDK

The latest version of the Infinadeck SDK may be found on our Google Drive Folder. Please follow the link to download the latest files. Demo projects and a short video to help with the installation and setup may be found in the same location.

The following items may be included with the download:

- Infinadeck Application
- Unity Plugin
- Unreal Plugin
- Infinadeck API
- SDK Documentation

3.2 WWW.INFINADECK.COM

The latest version of the Infinadeck Application may be found on the Infinadeck website. Please register or login. Then follow the link to download this application.

4   INSTALLATION GUIDE

The API does not have any executable files to install. Simply place the desired files for the software you are using in the proper locations. For example, if you are using Unity, place the library in the appropriate "plugins" folder.

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5 APPLICATION USAGE

SDK packages are available for Unity and Unreal engine platforms. The following API functions are useful for developing applications:

5.1 USEFUL APPLICATION FUNCTIONS

API Function	Action
InitInfinadeckConnection()	Connects the application to the treadmill. This must be successfully called before making any additional requests.
RequestTreadmillRunState()	Starts and stops the treadmill. Applications do not provide this functionality by default.
GetTreadmillRunState()	Checks the treadmill run state. If this returns false, the treadmill is not currently moving.
GetFloorSpeeds()	Retrieves the X and Y floor speeds. The combined velocities of the X and Y axes represent the user's velocity in virtual space. These speeds are similar to the output of a traditional analog joystick and may be used to control the user's speed and position in the application space.
DeInitInfinadeckConnection()	Ensures a clean disconnect from the treadmill interface when exiting the application.

6 ADVANCED DOCUMENTATION

The following subsections go in-depth for more sophisticated concepts than those covered elsewhere in this guide. They exist to give creators a better understanding of how our system works so that they may better interface and work with our system.

An example application for C++ may be found in: [Install Location]/InfinadeckAPICPPExample

An example application for C# may be found in: [Install Location]/InfinadeckAPICSExample

6.1 LIST OF AVAILABLE FUNCTIONS

API Function	Action
GetFloorSpeeds()	Returns the X and Y floor speeds of the treadmill.
GetFloorSpeedMagnitude()	Returns the magnitude of the floor speed.
GetFloorSpeedDirection()	Returns the direction of the floor speed.
SetManualSpeeds(double,double)	Manually sets the floor speeds of the treadmill, if enabled by the application.
CheckConnection()	Checks if connection to treadmill service has been established.
GetRing()	Returns the X, Y, Z radius and coordinates of the ring, which corresponds corresponding to the center of the treadmill in VR space. Also retrieves the radius of the ring.
SetTreadmillRunState(bool)	Set the treadmill to run or stop.
GetTreadmillRunState(bool)	Returns true if the treadmill is running or false if the treadmill is stopped.
GetTreadmillSerialNumber()	Gets the serial number of the attached treadmill. This will return an empty string if connected to a virtual treadmill.
GetTreadmillInfo()	Fills a TreadmillInfo struct with information about the currently connected treadmill.
InitInternal(InfinadeckInitError, bool)	Loads internal functionality.
DeInitInternal()	Unloads internal functionality.

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	NOTE: . API functions should not be called after this.
GetAPILock()*	Checks whether external applications using the API are locked from making changes to treadmill state.
SetAPILock(bool)*	Sets the API lock to prevent external applications from making changes to the treadmill's state.
GetDemoMode()*	Checks whether the treadmill is in "Demo" mode.
GetDemoTimeRemaining()*	Gets the remaining demo time if the treadmill is in "Demo" mode.

*NOTE: These API functions are not currently implemented.

7 TROUBLESHOOTING

The following table outlines common installation issues and solutions:

Installation Issue	Solution

If you have additional questions, please email Support@Infinadeck.com with the words "Infinadeck API HELP REQUESTED" in the subject line.

8 KNOWN BUGS

Below are a list of Known Bugs and Fixes we are currently working on. Please contact us at Support@Infinadeck.com with the words "Infinadeck API BUG DISCOVERED" in the subject line if you find any additional bugs or encounter any issues.

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