

ONDULUS LiDAR 19.0

Version 19.0.1

RELEASE NOTES

SIMULATION

PRESAGIS

Table of Contents

- Ondulus LiDAR 19.0.1 1**
- Ondulus LiDAR 19.0 2**
 - Introducing Ondulus LiDAR 19.0 3**
 - Known issues 4**
- Acknowledgments 6**
- Acronyms 9**
- Copyright 10**

Welcome to the Release Notes for **Ondulus LiDAR 19.0**

Ondulus LiDAR 19.0.1

Version 19.0.1 of **Ondulus LiDAR** is binary compatible with Ondulus LiDAR 19.0.0. This means that user-built applications do not need to be recompiled with 19.0.1.

After the installation of Ondulus LiDAR 19.0.1, you must install the Ondulus modules for Vega Prime by running the installation script found in the root folder of the Ondulus LiDAR installation. The script is called `Install_vpOndulusLiDAR.cmd` on Windows and `install_vponduluslidar.tcsh` or `install_vponduluslidar.bash` on Linux.

FIXES

- Corrected shifting of points sent while the ownship is moving.

Ondulus LiDAR 19.0

This section describes the features and enhancements for **Ondulus LiDAR**, as well as the fixes made to the software prior to the release.

This section includes:

- [Introducing Ondulus LiDAR 19.0](#)
- [Known issues](#)

Introducing Ondulus LiDAR 19.0

This is the first official release for **Ondulus LiDAR**.

Ondulus LiDAR (Light Detection and Ranging) is a commercial-of-the-shelf (COTS) software that is capable of simulating various configurable scanning mechanisms and rotating sensors to generate point clouds in specific patterns inside a dynamic 3D scene that contains detailed terrains, buildings and water materials, as well as, moving platforms and characters. The point clouds provide the position and intensity of targets within the scene. They are produced using physics-based principles that consider the material properties of the targets, environmental conditions and optical properties under different circumstances. Among a wide range of applications, this powerful tool is used to produce a digital 3D-representation of the target.

Known issues

This section describes any known issues and limitations in the current **Ondulus LiDAR** release.

LiDAR View

The LiDAR view is currently an optimized display used to show the LiDAR detections. In this view, features like PBR lighting and visible reflections are not used in order to reduce the processing overhead. Certain visual options, like disabling clouds also have no impact while in the LiDAR View. When using the OTW View in **Ondulus LiDAR**, all of these visual features will work as expected.

Overlay tracking

`vpOverlay2DText` that is set to track an object and assigned to the LiDAR channel will not display. This is caused because the LiDAR channel is used only to present the results of the LiDAR rendering and does not render the entire scene like the visual channel.

SSAO effect

The SSAO effect from Vega Prime does not currently work when **Ondulus LiDAR** is used.

Duplicate material names

If two materials use the same name but have different material layers, the first material encountered with the name will be used for both materials. Using a standard material palette for classifying all your material textures will prevent this from happening.

SpeedGrass

SpeedGrass is currently not supported in **Ondulus LiDAR**.

Multiple Vega Prime windows

When using a Vega Prime window for LiDAR and another window for the OTW, the LiDAR window must be first in the list of windows under the Vega Prime pipeline.

Vega Prime special effects

Vega Prime special effects are currently only used to attenuate or block the LiDAR returns from objects in back of the special effects. Points will not be returned on the special effect itself.

Acknowledgments

FreeType

Portions of this software are copyright © 1996-2002, 2006 The FreeType Project (www.freetype.org). All rights reserved.

GLEW

The OpenGL Extension Wrangler Library

Copyright (C) 2008-2016, Nigel Stewart <nigels@users.sourceforge.net>

Copyright (C) 2002-2008, Milan Ikits <milan.ikits@ieee.org>

Copyright (C) 2002-2008, Marcelo E. Magallon <mmagallo@debian.org>

Copyright (C) 2002, Lev Povalahev

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The name of the author may be used to endorse or promote products derived from this software without specific prior written permission.

THE SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE

glffmpeg

Portions of this product use the glffmpeg library.

The glffmpeg library is covered by version 2.1 of the GNU Lesser General Public License (LGPL). A copy of the LGPL license can be found at <http://opensource.org/licenses/lgpl-license.php>.

The glffmpeg library can be found at <http://sourceforge.net/projects/glffmpeg/>.

Qt

Portions of this product use the Qt library.

The Qt Toolkit is Copyright (C) 2013 Digia Plc and/or its subsidiary(-ies).

Contact: <http://www.qt-project.org/legal>

The Qt library is covered by version 2.1 of the GNU Lesser General Public License (LGPL). A copy of the LGPL license can be found at <http://opensource.org/licenses/lgpl-license.php>.

The Qt library can be found at <http://www.qt.io/>.

OpenEXR

Copyright (c) 2002-2011, Industrial Light & Magic, a division of Lucasfilm Entertainment Company Ltd. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of Industrial Light & Magic nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

PicoJSON

Copyright 2009-2010 Cybozu Labs, Inc.

Copyright 2011-2014 Kazuho Oku

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Acronyms

Acronym	Definition
API	An application program interface (API) is a set of routines, protocols, and tools for building software applications. Basically, an API specifies how software components should interact. Additionally, APIs are used when programming graphical user interface (GUI) components.
COTS	Commercial-off-the-shelf when referring to a software package
FBO	Frame Buffer Objects
GLEW	OpenGL Extension Wrangler Library
GUI	Graphical user interface
LiDAR	Light Detection and Ranging
LiDARUI	LiDAR User Interface
PBO	Pixel Buffer Objects
PNG	Portable Network Graphics
SIP	Sensor Imaging Pipeline
SSBO	Shared Storage Buffer Objects

Copyright

© 2020 Presagis Canada Inc. All rights reserved.

All trademarks contained herein are the property of their respective owners.

PRESAGIS PROVIDES THIS MATERIAL AS IS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Presagis may make improvements and changes to the product described in this document at any time without notice. Presagis assumes no responsibility for the use of the product or this document except as expressly set forth in the applicable Presagis agreement or agreements and subject to terms and conditions set forth therein and applicable Presagis policies and procedures. This document may contain technical inaccuracies or typographical errors. Periodic changes may be made to the information contained herein. If necessary, these changes will be incorporated in new editions of the document.

Presagis Canada Inc. and/or its suppliers are the owners of all intellectual property rights in and to this document and any proprietary software that accompanies this documentation, including but not limited to, copyrights in and to this document and any derivative works therefrom. Use of this document is subject to the terms and conditions of the Presagis Software License Agreement included with this product.

No part of this publication may be stored in a data retrieval system, transmitted, distributed or reproduced, in whole or in part, in any way, including, but not limited to, photocopy, photograph, magnetic, or other record, without the prior written permission of Presagis Canada Inc.

06/16/2020

PRESAGIS