Release Notes

Intel® RealSense™ SDK
User Background Segmentation
for Windows* Release

F200 Gold
SR300 Gold
User Background Segmentation Gold

User Background Segmentation version 11.0.27.2322

These release notes covers Intel® RealSense™ SDK for use with Intel® RealSense™ Camera, model SR300 and Intel® RealSense™ Camera, model F200. Please review the **"Intel RealSense SDK License.rtf"** for licensing terms. Please refer to attributions.rtf for third party attributions and third_party_programs.txt for third party licenses.

IMPORTANT! PLEASE READ!

- This release supports 2 cameras:
  - The **Intel® RealSense™ Developer Kit Camera (F200)**
  - The **Intel® RealSense™ Developer Kit Camera (SR300)**, which can be ordered on the Intel® RealSense™ SDK Website (https://software.intel.com/en-us/realsense/devkit)
- This package does not include the driver/service (DCM) for the camera. Camera Driver / DCM Package is hosted on Windows Update. It is automatically installed when you connect your camera to the system. If not automatically installed, please download the Camera Driver / DCM Package from the Intel RealSense downloads website.
  - SR300 Camera: DCM version 3.1.25.1077 or later
  - F200 Camera: DCM version 1.4.27.41944 or later
- This package is a portion of the entire Software Development Kit package. It can install standalone. This package requires the Intel® RealSense™ SDK Essentials for Windows* package which will be installed by the installer if not already present on the system.
  - Intel® RealSense™ SDK Essentials for Windows* version 11.0.27.1384
- If installer requests that you reboot, **please reboot**, or your system will not install correctly.
- F200 Camera OS:
  - * Microsoft* Windows* 8.1 x64 August Update required
  - * Microsoft* Windows* 10
- SR300 Camera OS:
  - **Microsoft* Windows* 10**

Contents

SDK Features

Please note that SDK features are at various levels of maturity in this release as follows:

Maturity	SR300 Feature
Gold	• User Background Segmentation

Installation steps for SDK

This is for developer systems ONLY

- Run the Intel® RealSense™ SDK User Background Segmentation for Windows* installer (intel_rs_sdk_mw_seg3d_offline_11.0.27.2322.exe).

SDK Interface Changes

- SDK 2016 User Background Segmentation:
    - Features were added to detect whether the lighting conditions of the scene are optimal for the algorithm
        - Two new alerts: ALERT_BRIGHTNESS_LOW and ALERT_BRIGHTNESS_GOOD
        - A GetBrightness() method that returns a normalized float in the range [0, 1). A value below 0.25 can be considered poor lighting conditions.
    - Unity
        - Intel.RealSense.seg3d.unitypackage provided under `$RSSDK_DIR/framework/Unity` for easy integration of algorithm modules. For more info, `ReadMe` provided in the same directory.
        - Automated copying of runtime contents in application data directory while building Unity standalone executable. No manual steps required for deploying.
        - Fixed Unity Editor hang issue when subscribing to alert events.

SR300 Release Notes

The following items apply to the SR300 camera.

SR300 SDK Features

Gold Features

- User Background Segmentation
    - Segment the user from the background (e.g. background removal/replacement)
    - Usage cues (fading) at near/far extents
    - Optional callback support for user enter, too close, too far, low lighting, and good lighting events.
    - Segmentation Quality Improvements using Depth HDR and other algorithm changes: Dark hair, finger webbing & other artifacts can be better detected.
    - Scene lighting quality detection.

SR300 Known Issues and Limitations

Background Segmentation

Issue	Recovery/Workaround
When multiple people are in range, the segmentation mask quality degrades	None. The module is implemented to work with one person at a time. We are planning to add support for multiple people in a future release.
Glossy or IR absorbing materials (e.g. glasses, watches, headphones, hats and scarves) can degrade segmentation mask quality	Remove these items. Will improve in future releases.
Incorrect segmentation for transparent objects	Will be addressed in future release
The module confuses black objects from background that are at the same camera eye level of the user's head.	Will improve in future releases
Incorrect segmentation for hair and background with similar color tone	Will be addressed in future release
Background between fingers can be seen in some cases	Increase or decrease the distance between fingers or move hand away from head/object.
Incorrect segmentation for bright blond hair	Will be addressed in future release
When holding objects or hands close to the head, mask quality is degraded	Move object, head or hands to avoid this case
Thin objects (1-2 mm) are not segmented correctly	None
Incorrect segmentation for mixed light (artificial + natural)	Will be addressed in future release
The FF_3DSeg samples may crash when recording streams with intel HD graphics card disabled.	Keep Intel HD graphics enabled for recording.
Clip files recorded in HDR mode may have incorrect timestamp difference between first 2 frames resulting in playback hang in realtime mode.	Remove first frame from the clip using clip_editor tool.
A crash may occur if you release SDK resources and immediately close the executing process when using segmentation.	Do not free SDK resources directly before process exit (such as at the end of the main() function). A fix will be provided in a future release.
`framework/CSharp/Intel.RealSense.Segmentation.unity` VS project does not build successfully on VS2012 or VS2013	Right Click the Project -> Add Reference -> [Unity Install Directory]/Editor/Data/Managed/UnityEngine.dll