

incube 3D Daily
A Semi-automatic 2D-to-3D Conversion Technology

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Introduction

incube 3D Daily is a semi-automatic 2D-to-3D conversion software for the production of 3D pre-visualizations, 3D dailies and 3D videos for 3DTV and mobile applications. In contrast to incube 3D Cinema which supports the creation of high quality layered depth maps with individual objects, its focus is on the rapid creation of a dense depth map by propagating sparse depth scribbles provided by the user over space and time.

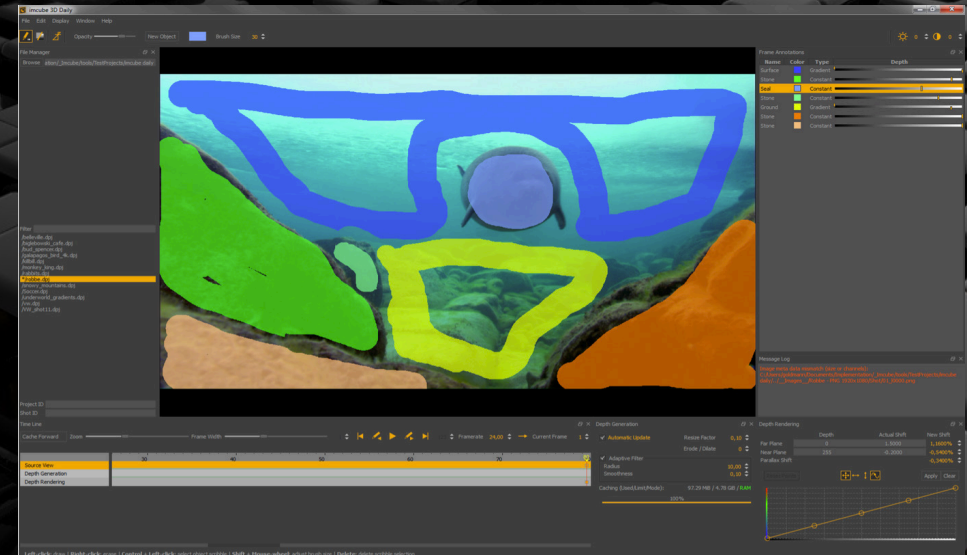
This allows users to rapidly convert tons of videos in short time while having full control on the 3D quality and 3D effect.

Workflow

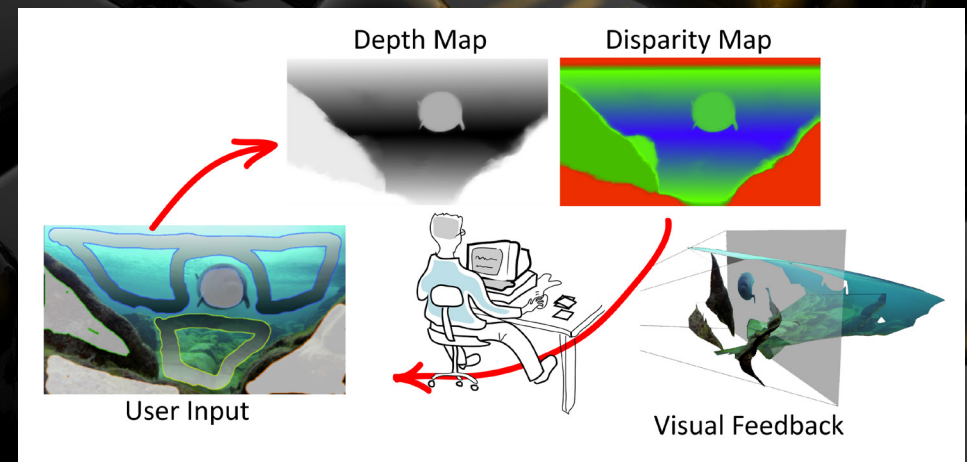
The user scribbles depth values into objects or areas of a selected keyframe and the software estimates a dense depth map by propagating the depth values between all pixels within this frame and over time using sophisticated and proprietary computer vision algorithms.

A single keyframe can be sufficient for the conversion of the entire sequence. However, the user can improve the results by modifying the depth scribbles, adding new depth scribbles or selecting additional keyframes.

While the user is scribbling depth values into the image, he gets immediate visual feedback either in the form of depth maps, stereo left and right views or as a 3D model of the scene.



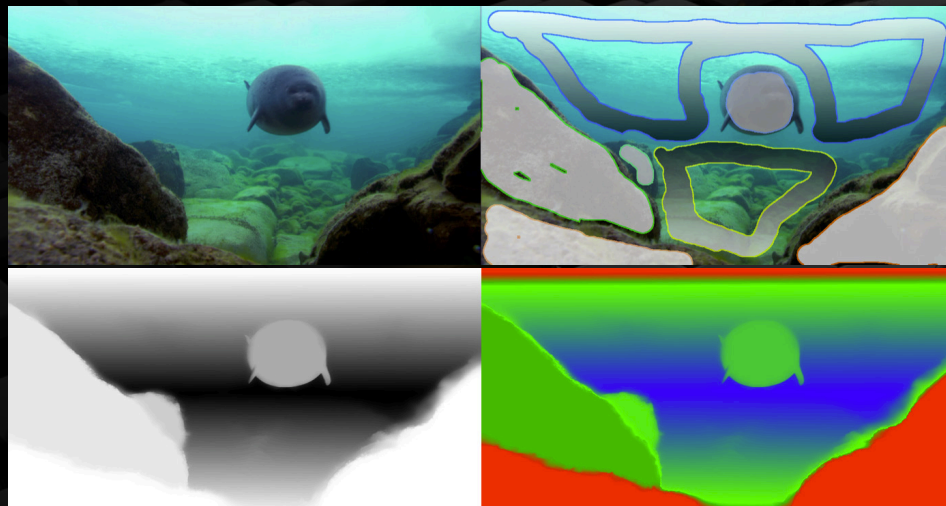
incube 3D Daily's graphical user interface (GUI)



Depth scribbling workflow of incube 3D Daily

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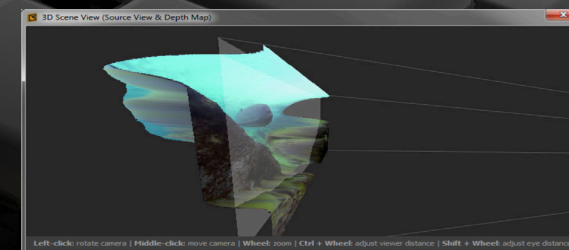
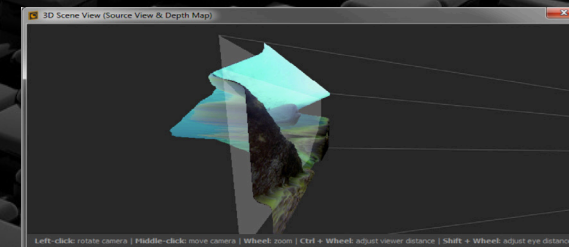
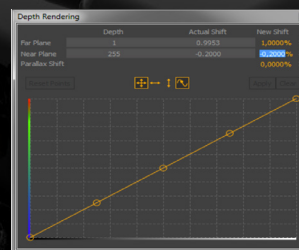
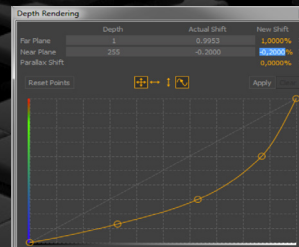


Edit View widget with various views: source view, scribble overlay, depth map, and disparity map.

Viewing and Render Options

The Edit View widget is the central widget for showing the footage, creating the coarse depth structure and displaying the results of the depth map generation. It offers 4 different views: The first view shows the source footage and can be overlaid with the object or depth scribbles as shown in the second view. The third view shows the dense depth map which has been generated based on the sparse depth scribbles. Finally, the fourth view shows the resulting disparity map after applying the depth rendering settings to the depth map.

The Rendering widget is used for depth grading and fine-tuning of the 3D effect. The depth mapping function can be easily adjusted with a curve editor.



Nonlinear and linear depth mapping function and resulting 3D scene view

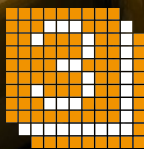
System Requirements

Category	Requirement
Operating system	Microsoft Windows 7 (x64)
Processor (CPU)	Any
Graphics (GPU)	OpenGL 3.0 support
Memory (RAM)	4 GB RAM
Storage (HDD)	100 MB
Additional hardware	High-resolution display for playback of source footage, active or passive 3D display for visual 3D feedback

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