



For immediate release:
December 19, 2014

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Disney Research Creates Innovative Short Film **With Help of New Production Technologies**

New Technique Provides Easy and Inexpensive Way to Control Time and Exposure of Shots

"Lucid Dreams Of Gabriel" is an experimental short film project created by Disney Research Zurich, in tandem with the Swiss Federal Institute of Technology (ETH), ARRI, and with Schweizer Radio and Fernsehen (SRF) providing studio space, personnel, and other resources.

The film, part of a recent research project, premiered during the Industry Days at Locarno Film Festival in August 2014. The 24/48fps version of the movie can be seen online on the Disney Research YouTube channel at <https://www.youtube.com/watch?v=3zfV0Y7rwoQ&feature=youtu.be>.

The film is a surreal non-linear story about a mother achieving immortality in her son's eyes after an accident, which takes the mother's life, occurs in the Engadin Alpine Valley. The film makes the transition from reality (at 24 fps) to a supernatural world (at 48 fps) after the accident.

The film was made to test a variety of new production and post-production technologies with an emphasis on the display of time in film. It was shot at 120 fps/RAW in Switzerland, with a limited budget, minimum dialogue and cast and without using a green screen.

"This short film was framed as a research project to experiment with novel technologies to manipulate pixel timing. In particular, we wanted to investigate how the perception of reality is influenced by frame rate and artistic motion blur," said Markus Gross, vice president of Disney Research and the film's producer.

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Researchers who worked on the film sought to produce a visual effect framework that would support the film's story in a novel way. The new technique, called Flow-of-Time, includes global and local frame rate variation, local pixel timing, global and local artistic shutter functions, local retiming and markups, and video tone mapping. It allows for the control of time and exposure on a per pixel basis, and produces effects globally or locally in an easy and economical way.

"The story of Lucid Dreams of Gabriel had to be conceived in such a way that it could hide the fact that it was originally visual-effects-driven. We started designing the story at the same time that most of the Flow-of-Time technology was also still in development. It was very exciting to watch how a story could drive the innovation," said Sasha Schriber, who wrote the script and directed the film.

The 10-minute film is available in three versions: - 24 fps, mixed 24/48 fps (on the Disney Research YouTube channel) and mixed 30/60fps (Bluray). All effects were invented and applied in-house at the Disney Research lab in Zurich, Switzerland.

For more information about this short film, please visit the project website at <http://www.disneyresearch.com/project/lucid-dreams-2/>.

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About Disney Research

Disney Research (www.disneyresearch.com) is a network of research laboratories supporting The Walt Disney Company. Its purpose is to pursue scientific and technological innovation to advance the company's broad media and entertainment efforts. Vice Presidents Jessica Hodgins and Markus Gross manage Disney Research facilities in Los Angeles, Pittsburgh, Zürich, and Boston and work closely with the Pixar and ILM research groups in the San Francisco Bay Area. Research topics include computer graphics, animation, video processing, computer vision, robotics, wireless & mobile computing, human-computer interaction, displays, behavioral economics, and machine learning.