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PRESSE RELEASE

3D printer driver Cuttlefish by Fraunhofer now available for Mimaki printers

The 3D printer driver Cuttlefish by Fraunhofer IGD has had yet another rollout. Printer manufacturer Mimaki has opened its interfaces to Cuttlefish. Now, more users than ever before can benefit from the functions of the universal printer driver.

(Darmstadt) Cuttlefish is a universal 3D printer driver developed by the Fraunhofer Institute for Computer Graphics Research IGD. It translates 3D scan data or 3D models generated by design and texturing software for 3D printers of various manufacturers. It also makes it possible to work with numerous print materials simultaneously, exactly reproduce the geometry, colors and fine color transitions of the original, and even simulate the finished product on the screen beforehand. Now, users of Mimaki's 3DUJ-553 3D printer can opt for the driver, which already supports Stratasys Polyjet 3D printers. To achieve this, the software was adapted to the specific features of the printer and an appropriately calibrated color profile, including translucency, was created. Switching between printers from both manufacturers is easy. "The combination of 3DUJ-553 and Cuttlefish will greatly expand the possibilities of full color 3D printing, which is something we will continue to support," said Mimaki's General Manager of 3D Project Research and Development, Masakatsu Okawa, in explaining the decision to open the interfaces to Fraunhofer IGD. The printer driver excels above all in color value continuity, translucent design processing and geometric accuracy.

Cuttlefish supports RGBA textures containing both color and translucency information, which ranges from opaque to fully transparent. This makes it possible to print and integrate semi- or fully transparent materials with ease. The driver allows users to print multiple overlapping models, each with one or more RGBA textures. It also factors in how an object scatters light as well as how color and surface structures change depending on lighting. A sample 3D anatomical model, printed on the Mimaki 3DUJ-553, shows the possibilities for users in industry and medical technology. Each

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of the 28 total parts was given a different material that, when combined, are described by 425-megapixel color textures. Transparent parts of the model were generated by simply modifying the RGBA data. 3D models based on RGBA data are supported by standard 3D file formats and most design and texturing tools. Even established image processing programs such as Adobe Photoshop can work with RGBA textures. This makes Cuttlefish an all-purpose tool in professional 3D printing that closes the gap in quality between virtual design and its reproduction as a 3D print.

More information:
www.igd.fraunhofer.de/en/competences/technologies/3d-printing
www.cuttlefish.de

Image 1: On the Mimaki 3DUJ-553, Fraunhofer's 3D printer driver Cuttlefish helps produce highly precise prints in even the smallest of formats. (© Fraunhofer IGD)

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Image 2: Partially translucent 3D anatomical models printed on the Mimaki 3DUJ-553 using Fraunhofer's 3D printer driver Cuttlefish. (© Fraunhofer IGD)

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Institute profile

Founded 30 years ago, Fraunhofer IGD has become the world's leading institution for applied research in the field of visual computing. Visual computing means image and model-based IT. In simple terms, it describes the capability of transforming information into images (computer graphics) and extracting information from images (computer vision). The numerous application scenarios include human/machine interaction, interactive simulation, and modeling situations.

Our developers at the sites in Darmstadt, Rostock, Graz, and Singapore develop new technical solutions and prototypes all the way up to the market readiness stage. In collaboration with our partners, this results in application solutions that are custom-tailored to customer requirements.

Our approaches facilitate the work with computers and are efficiently used in the industry, in everyday life, and in the healthcare sector. Our research highlights includes assisting people in the Industry 4.0, the development of key technologies for the Smart City, and the use of digital solutions in the field of Individual Health.

Through applied research, we support the strategic development of the industry and economy. Especially small and medium-sized enterprises as well as service centers can benefit from this and be successful on the market with the help of our leading technologies.

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