

Realfiction receives US Notice of Allowance for foundational Hybrid Scan architecture and updates on next development milestones

Realfiction Holding AB ("Realfiction" or the "Company") announces that the United States Patent and Trademark Office has issued a Notice of Allowance for the Company's patent application covering the foundational Hybrid Scan architecture used in its Directional Pixel Technology ("DPT") platform. The Company also provides an update on its development path. Based on the Company's current development schedule, physical validation of the nematic spatial light modulator (SLM) architecture is currently expected to be completed before the end of 2026. Subject to successful physical validation, the next planned major technical milestone will be integration, testing and calibration of the trade-fair-ready compact 7-inch DPT Evaluation Platform, currently targeted to be completed before the end of Q1 2027.

"The allowance strengthens the protection around a foundational part of DPT at an important stage of our development. Together with the ongoing physical validation of the nematic SLM and the development of the compact 7-inch DPT Evaluation Platform, it strengthens our position in future discussions with potential industrial partners, in line with our broader commercial strategy for DPT," says Clas Dyrholm, CEO of Realfiction.

The patent application is expected to proceed to grant in the near term. The application relates to the foundational Hybrid Scan architecture used in Realfiction's DPT platform, including principles applied in the Company's current DPT demonstrators.

The patent application, no. 19/151,021, has received a Notice of Allowance from the United States Patent and Trademark Office ("USPTO").

Hybrid Scan refers to an architecture in which the scanning of the image-generating display is coordinated with the scanning of the spatial light modulator ("SLM"). Images intended for different viewers are divided into image segments and interleaved during the scanning process.

The principle enables image segments to be delivered to multiple viewers while a given opening in the SLM remains active. By utilizing the ability of the image-generating display to switch faster than the liquid crystal elements in the SLM, the architecture reduces the switching-frequency requirements placed on the SLM compared with an architecture in which the SLM would need to perform a separate scan for each viewer.

The Hybrid Scan principle is an important element in Realfiction's approach to providing individual images and glasses-free 3D content to multiple viewers. It is also relevant across different display implementations.

The patent application subject to this allowance covers foundational aspects of the Hybrid Scan architecture forming the basis of Realfiction's current DPT implementation. The Hybrid Scan concept has subsequently been further developed, and Realfiction's current demonstrator incorporates a later generation of the architecture, with improvements for which a separate patent application has been filed. This demonstrator uses an LED display combined with a separate SLM, while the Hybrid Scan principle may also be relevant to architectures using OLED or LCD as the image-generating display behind the SLM. However, due to the relatively slow response time of conventional LCD displays, the full competitive advantages of DPT, including its multiview and multiuser 3D capabilities, can primarily be realized with faster display technologies such as OLED and LED/microLED.

Hybrid Scan remains a central part of Realfiction's current DPT architecture and is used together with subsequent technical improvements, including in the Company's work with nematic liquid crystal SLM technology. The principle is also relevant to DPT implementations using ferroelectric liquid crystal SLM technology.

"We regard Hybrid Scan as a technically central part of our DPT architecture. It allows us to make some of the fundamental requirements of multi-user directional displays more manageable by coordinating the scanning of the image-generating display with the switching of the SLM. Importantly, the foundational principles covered by this allowance remain relevant to the DPT demonstrators we are developing today, while we have continued to build additional innovations and improvements around them. The allowance is therefore an important milestone in strengthening the intellectual property foundation around DPT," says Steen Iversen, Head of R&D at Realfiction.

Current development path and next milestones

Realfiction's current DPT development is progressing through two closely related workstreams. The first is focused on the development and physical validation of the nematic SLM architecture using the Company's existing 7-inch LED platform. In parallel, Realfiction is progressing the development of the components required for a more compact 7-inch DPT Evaluation Platform, including the LED architecture, electronics, mechanics and software.

The theoretical evaluation of the nematic SLM architecture has been completed, and the current development phase is focused on physical validation. This work includes manufacturing and testing successive SLM iterations and evaluating key performance parameters, including switching characteristics, system crosstalk, and the effect of compensation techniques. Physical validation is intended to determine whether the nematic SLM can achieve the performance required for integration into DPT. The outcome cannot be assured, and test results may require further design and manufacturing iterations or modifications to the current architecture.

Based on the Company's current preliminary development schedule, physical validation is currently expected to be completed before the end of 2026. The timing will depend primarily on the results of the testing and the number of design and manufacturing iterations required to complete the validation and determine the preferred nematic configuration for integration into DPT.

Subject to successful physical validation, the next planned major technical milestone will be integration, testing and calibration of the trade-fair-ready compact 7-inch DPT Evaluation Platform, currently targeted to be completed before the end of Q1 2027. The platform is intended to enable industry participants to evaluate DPT and potential applications using a compact platform designed with scalability and industrialization in mind.

The timing of the 7-inch DPT Evaluation Platform will depend on the outcome of the physical validation and DPT integration as well as progress in the parallel development of the LED architecture, electronics, mechanics and software. Additional design or component iterations and manufacturing lead times may therefore also affect the overall schedule.

The current development path is intended to provide a potential route towards industrialization using known component types and manufacturing principles. In particular, the Company's work with nematic liquid crystal technology is relevant because it builds on materials and processes with which the LCD industry has extensive experience.

Further development and qualification towards commercial production will be required following the current validation and integration work. This includes additional work relating to areas such as manufacturing yield and lifetime, precision in the assembly and alignment of the display and SLM, overall image quality, brightness, eye tracking and operational reliability.

Commercial relevance

The Company's commercial strategy for DPT remains focused on licensing, industrial partnerships or a potential sale of the technology rather than Realfiction independently financing large-scale product manufacturing.

Further development of larger commercially representative DPT platforms is only expected to be undertaken with additional customer funding and in cooperation with industry partners, if and when such opportunities arise.

Protection of an architecture that an industrial partner may invest in developing and industrializing can therefore be an important element in future commercial discussions.

The value of DPT is based on the combination of Realfiction's patent portfolio, know-how, demonstrators and accumulated development and manufacturing experience. The Hybrid Scan patent adds protection around foundational principles that are part of Realfiction's current DPT architecture, while additional patent applications seek protection for subsequent improvements developed by the Company.

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About Realfiction Holding AB

Founded in Denmark in 2008, Realfiction is a provider of cutting-edge 3D display technologies designed for tomorrow's needs, featuring technological breakthroughs with its Directional Pixel Technology for LCD, OLED and microLED. These technologies support a wide range of use cases, including enhancing driving safety, medical imaging, immersive gaming and entertainment, digital signage, as well as applications in architecture, engineering, and design. The Company offers a comprehensive intellectual property portfolio tailored for OEMs and Tier-1 partners involved in developing and marketing displays for markets and industries requiring high-resolution multistereoscopic displays. All technologies are ready for licensing, and Realfiction is actively pursuing commercial licensing agreements and partnerships to pave the way to mass production. Realfiction's IP portfolio comprises 15 patent families and registered trademarks, including patent applications filed in multiple countries. Realfiction Holding AB's shares are publicly traded on Nasdaq Stockholm First North under the symbol "REALFI", with the share's ISIN code being SE0009920994.

Attachments

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