

Realfiction updates on its next-gen microLED ECHO proof-of-concept exhibit at Display Week and its ECHO commercialization strategy

Realfiction Holding AB (“Realfiction” and the “Company”) announces an update on its microLED ECHO proof-of-concept display that has been selected by the Society for Information Display (“SID”) to be exhibited in the Innovation Zone (“I-Zone”) area of Display Week 2023 in Los Angeles Convention Center from tomorrow until 25 May and its commercialization strategy.

Realfiction will exhibit its newest and patent pending invention at Display Week 2023. The invention combines microLED and ferroelectric liquid crystals (FLC) in a configuration together with Realfiction’s proprietary driving system. Such configuration enables many simultaneous users to see different 2D or 3D images on the same display without any loss of resolution. On the exhibited 2-inch proof-of-concept display 10 different views (corresponding to 5 3D viewers or 10 2D viewers) are presented simultaneously at a frame rate of 130 frames per second for each view. The configuration can also be based on a combination of OLED and FLC. However, by using microLED, the Company was able to produce this proof-of-concept display very rapidly and at a low cost, thus allowing it to showcase its capabilities at Display Week tomorrow.

The patent pending invention greatly simplifies the manufacturing process used in current 3D displays by replacing the use of optical lenses such as lenticular sheets etc. with a light modulator comprising FLC digitally controlling the light direction in synchronization with the time multiplexed operation of ECHO displays at very high speeds. This configuration enables unique views emitted at high speeds with high angular precision over a wide viewing zone. So far, the configuration has been successfully tested at speeds well beyond what is needed to show high quality autostereoscopic 3D for 5 or more people with individual perspective for each user. The technology thereby eliminates a well-known trade-off in current 3D and dual view 2D displays: either spatial multiplexing for many users with reduced resolution or time division multiplexing allowing only two individual views.

The Company’s development and commercialization plans now include three paths and opportunities:

- the first being the ECHO LCD technology that was announced in a press release on 30 January 2023, and
- the second being the ECHO microLED or OLED based FLC display technology exhibited at Display Week, and
- the third being the “pure” OLED ECHO path for which the successful completion of the integration license package was announced on 1 April 2022 and a notice of allowance confirming the patentability was announced on 31 January 2023.

The fastest path for the Company, or a licensee of the ECHO technology, to mass-produce a 3D ECHO-display is to use the ECHO LCD technology, as it is produced with existing display panels. A public demonstration of a 17-inch full-HD display based on the ECHO LCD technology that can show the same 3D-content for multiple viewers and different 2D images for two simultaneous viewers (dual-view) is still planned to take place during the second half of 2023. The LCD version has many use-cases, for instance in vehicles, CAD presentations, surgical displays, virtual meetings, virtual

receptionists, gaming, and the like in display sizes up to 110-inches. The Company continues its presentations of the first version at its lab in Taiwan and the ongoing discussions with interested parties who have seen the ECHO LCD display and at the same time, the Company uses the opportunity granted by SID to exhibit its next generation microLED proof-of-concept to enable interested parties in planning for the future with the break-through bespoke technology that the Company is offering for licensing and collaboration.

The Company also continues its development of the “pure” OLED version of ECHO in collaboration with the Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, Germany, and Interuniversity Microelectronics Centre, Belgium. Sale of licenses can start now, but Realfiction is looking to accelerate this process when a small display-segment is available from this collaboration. OLED display technology is expected to become the future standard of televisions, as well as for displays in numerous additional markets, but production is also costly to initiate.

While the microLED technology has the potential to beat OLED in most metrics, including power consumption, lifetime, brightness, temperature range and response time, the microLED technology in general is a next generation technology that requires further maturation before it will be able to compete with OLED on price. In the shorter timeframe, LCD is expected to sell at greater volumes, and combined with ongoing upgrading of the technology, the LCD market is expected to account for the largest portion of the display market for many years to come.

With different technology paths lined up for displays capable of creating social and immersive 3D experiences, the Company opens its opportunities for use-cases for both early and late adaptors, and Realfiction now has commercial opportunities within current AND future standards of display technologies. At the same time the number of collaboration partners relevant for the ECHO technology increases and this provides the Company with more negotiating power in licensing discussions. To sum up, the Company now possesses intellectual property rights including patent applications, notice of allowance, licenses, and know-how for display technologies using standard LCD, OLED, as well as microLED (or OLED) with extreme speed FLC.

“This is an important step for Realfiction in the ECHO commercialization process, and we are honored to be selected by SID for the I-Zone during Display Week. Exhibiting during Display Week marks our first public showing of the ECHO technology and we plan to be at more events later in 2023 and early 2024,” says Realfiction’s CEO Clas Dyrholm.

He continues: “The display is merely 2-inches diagonally, but it is nothing less than a break-through technology that will eliminate the optics and introduce a completely new and revolutionary way of displaying live pictures with extreme speed FLC, thus enabling multiple viewing and 3D capabilities without any loss of resolution. I must say that I am overly excited about our accomplishment with the microLED proof-of-concept. The completion of the 2-inch display would not have been possible without the continued support of our investors and the recent InnoBooster contributions by Innovation Fund Denmark. We have plans to design and build 85-inch versions of this display with collaboration partners and licensees, and we look forward to meeting the global display industry during Display Week and fuse further commercial interest in the Company’s intellectual property rights in the domain of revolutionary 3D and holographic display technologies.”

For more information about Realfiction Holding AB, please contact:

Clas Dyrholm, founder and CEO

Telephone: +45 25 22 32 81

Email: clas@realfiction.com

www.realfiction.com

Certified Adviser

Mangold Fondkommission AB is the company's Certified Adviser and can be contacted via ca@mangold.se or +46 8 503 015 50.

About Realfiction Holding AB

Founded in Denmark in 2008, Realfiction is a leading innovator and provider of Mixed Reality solutions and services, a market estimated to reach USD 80 billion by 2025. Realfiction continues to invent technologies within Mixed Reality, with an intention to disrupt the industry by pursuing the vision of converting science fiction into real fiction. Realfiction Holding AB's share is publicly traded on Nasdaq Stockholm First North under the symbol "REALFI". The share's ISIN code is SE0009920994.

About Display Week 2023

Display Week 2023, the 60th International Symposium, Seminar and Exhibition presented by the Society for Information Display (SID), will be held in Los Angeles, CA, May 21-26, 2023. Serving as a catalyst for innovation, information and inspiration, Display Week supports and showcases the entire ecosystem of emerging electronic display and visual information technologies, and features a world-class exhibition with hands-on demos, hundreds of scientific presentations from pioneering scientists, special sessions with today's most forward-thinking business leaders, and an annual business conference devoted exclusively to the supply chain of these convergent industries. Thousands of attendees from the R&D, engineering, design, manufacturing, supply chain, marketing, sales and financial disciplines flock to Display Week to find out what's new and what's next. Display Week also delivers unparalleled learning opportunities, highlights market-moving trends, and provides an expansive platform for networking that enhances career and business growth. For more information about Display Week 2023, visit www.displayweek.org or follow us on LinkedIn, Facebook, Twitter @DisplayWeek (hashtag #DisplayWeek2023), or the Display Week YouTube Channel.

About The Society for Information Display

The Society for Information Display (SID) has been powering the display technology industry since its inception in 1962. It is the only professional organization dedicated to the electronic display and visual information technology industries, and plays a vital role in advancing the plethora of interwoven discoveries and applications from concept and research to manufacturing and market. As a worldwide platform, SID brings together the multiple facets of these industries to fully support the imaging and display ecosystems, and help address growing consumer demand for seamless digital experiences through smart phones, televisions, mobile computers, immersive gaming and entertainment applications, online platforms, electric cars, wearables, smart homes, and an ever-expanding menu of devices and uses that have become engrained in the way we live, work and play. Additionally, SID provides a unique platform for industry collaboration, communication and training in all related technologies while showcasing the industry's best new products at its annual International Symposium, Seminar & Exhibition (known as Display Week). To promote industry and academic technology development, and educate consumers, SID hosts more than 10 conferences a year, including Display Week, which unites industry and academia all under one roof to demonstrate technology that will shape the future. The organization's members are professionals in the technical and business disciplines that relate to display research, design, manufacturing, applications, marketing and sales. SID's global headquarters are located at 1475 S. Bascom Ave., Ste. 114, Campbell, CA 95008. For more information, visit www.sid.org.

About Innovation Fund Denmark

Innovation Fund Denmark invests in entrepreneurs, researchers and businesses that create value for Denmark and new solutions to our society's biggest challenges - and supports the development of new knowledge and technology creating growth and employment in Denmark. Please refer to www.innovationsfonden.dk for more information.

About ECHO

The ECHO pixel technology can direct light from flat screen displays in different directions, allowing each individual viewer to not only see an image which is different from what others see, but also to experience full 3D depth in that image. The main differentiators between this technology and others in the market or currently under development are that it does not require the use of glasses, that it is a multi-user system, that the resolution can be ultra-high and that it is not limited to any known standard nor size, that the required image processing is well within the capacity of current standard equipment, and that it can be mass-produced at a low cost. In addition to hardware, strong progress is also being made on the software side, including our Holowize 3D film conversion technology to enable a wealth of exciting content for the whole family. Finally, Realfiction has a global patent strategy to ensure that the ECHO directional pixel technology is properly safeguarded to enable the Company in signing collaboration or licensing agreements with commercial partners who want to include the technology in their display products. Several of the patent applications have progressed to the national phase, with the first notice of allowance received in April 2023 for a US ECHO patent related to the OLED technology.

Attachments

[Realfiction updates on its next-gen microLED ECHO proof-of-concept exhibit at Display Week and its ECHO commercialization strategy](#)