



PRESS RELEASE

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IS&T Announces Winner of Second Image Engineering Innovation Award

The 2014 Image Engineering Innovation Award is given to Takashi Aoki and Yoichi Iwasaki (Fuji Photo Film Co., Ltd.) and Masahiro Suzuki (Nikon Corporation) for their breakthrough innovations for autofocus (AF) performance in digital cameras, achieved by incorporating specially designed phase-detection AF pixels on the main image sensor. By using the same CMOS image sensor to perform both phase-detection AF and contrast AF, as well as capture high resolution images, very responsive autofocus can now be provided in compact, low-cost cameras.

Previously, due to cost limitations, compact digital cameras and mirrorless interchangeable-lens cameras (MILC) used only contrast detection AF, a relatively slow process. Phase detection AF, a well-known alternative, was available in film cameras and D-SLRs designed with separate, dedicated image sensors and optical systems to simultaneously capture two images from different areas of the lens aperture. Rapid AF is possible because focus position is a function of the phase difference between these images.

In 2010, Fujifilm introduced new digital cameras with integrated phase-detection AF pixels on their newly designed EXR image sensor. Pairs of pixels near the center of the image sensor are masked so that they detect light from opposite sides of the lens aperture. This structure is equivalent to the two light paths provided by two dedicated lenses in conventional phase detection AF systems. The single EXR sensor is also used for contrast AF and for capturing the final high-resolution images.

In 2011, Nikon introduced a new family of mirrorless interchangeable-lens cameras (MILC) which soon became the most successful product family using the hybrid AF technology. Rapid sensor readout modes permitted extremely responsive object tracking autofocus. Continuous AF was possible even when capturing bursts of images at up to 10 frames per second.

Takashi Aoki joined Fuji Photo Film Co., Ltd. in 2005 and in 2010 took charge of the development of the Finepix F300EXR, which carries the world's first image surface phase-detection AF. Yoichi Iwasaki joining Fuji Photo Film Co., Ltd. in 1990, engaged in optical elements development and camera marketing. Presently, Iwasaki is with the Optical Device & Electronic Imaging Products Development Center in the R&D headquarters. Masahiro Suzuki joined Nikon Corporation in 1986, initially with digital imaging design. In 2009, he became General Manager of next-generation camera system development. The Nikon 1 advanced camera with interchangeable lenses was released in 2011.

About the Image Engineering Innovation Award

The Image Engineering Innovation Award, sponsored by Image Engineering GmbH & Co. KG, and administered by IS&T, seeks to spotlight efforts that lead to quality improvements or major positive changes in handling digital cameras and images by recognizing the following potential areas of contribution:

- New technological features of cameras
- Innovative image processing
- Renewal of existing camera features
- Optimization of the user interface and camera handling
- Simplifying or enhancing the use of images

The recipients of the Image Engineering Innovation Award, selected by a committee under the auspices of IS&T, receive an engraved award and US\$1,000 cash prize. Further details regarding the award, including submission and eligibility requirements, are available at <http://www.imaging.org/ist/Membership/honors.cfm>.

About Image Engineering GmbH & Co. KG

Since 1997, Image Engineering has been the worldwide leading independent test lab for image recording systems such as digital and video cameras. Digital cameras are tested regularly according to ISO and DIN standards for well-known photo magazines and camera producers; mobile telephones, camcorders, television cameras and various other product groups such as cameras are tested for special demands in security, automotive, and machine vision areas. After the takeover of Esser Test Charts in 2006, Image Engineering developed into the market-leading producer of test equipment for digital imaging products. More than 260 different test charts are currently available for use in photo, video and broadcasting areas.

About the Society for Imaging Science and Technology (IS&T)

Based in Springfield, Virginia, IS&T is a professional, non-profit Society that serves the international community of scientists and engineers working in the broad field of imaging science, with particular emphasis given to digital printing, electronic imaging, image assessment, pre-press technologies, color science, hybrid imaging systems, image preservation, and photofinishing. IS&T sponsors technical conferences and publishes a wide array of products that promote the field of imaging science.