

Ecma International creates TC44 to standardize Holographic Information Storage systems

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Ecma has created Technical Committee 44 (TC44) to develop a standardization strategy for Holographic Information Storage (HIS) systems, initially based upon the Collinear Technologies of Optware Corporation, a leading developer of [Holographic Versatile Disc](#) (HVD) storage products. TC44 was set up at the request of Optware Corporation and several of its partners, including CMC Magnetics Corporation, Fuji Photo Film Co., Ltd., Pulstec Industrial Co., Ltd., Strategic Media Technology and Toagosei Co., Ltd.

Dramatically increased storage density

Holographic Information Storage breaks the density limits of conventional optical storage by recording through the full depth of the medium instead of recording on the surface only. One HVD can store upwards of 200 gigabytes of data, the equivalent of more than 40 of today's DVDs, and that is just for starters. Future implementations will be able to store more than 1.3 terabytes. Additionally, unlike optical discs, which record one data bit at a time, HVDs allow over 10 kilobits of data to be written and read in parallel with a single flash of light – and the recording and reading processes do not require spinning media. Data transfer rates of up to 20 megabytes per second (far faster than DVDs) are easily achieved with rotating or translating media.

Ambitious goals

TC44 will begin standardizing three different storage media: Holographic Versatile Disc cartridges (capacity: 200 Gbytes per cartridge), read-only Holographic Versatile Discs (capacity: 100 Gbytes per disc) and Holographic Versatile Cards (capacity: 30 Gbytes per card). The fourth project is standardization of a case for 120 mm read-only HVDs. Ecma has ambitious goals: In December 2006 the new standards will be submitted to ISO for fast-track processing.

Dr. Yoshio Aoki, President and CEO of Optware Corporation, commented: “We are very honored that Ecma International is undertaking standardization of Holographic Information Storage systems. We are particularly gratified that Ecma has chosen to start its standardization work with projects that make use of our Collinear Technologies for Holographic Versatile Discs (HVDs) and Holographic Versatile Cards (HVCs). HVDs and HVCs use a completely different technology from the conventional two-axis method and fully exploit the optical servo technologies associated with conventional CDs and DVDs. This unique feature of the Optware Collinear Technology is very well suited for high-performance recording formats, file structures and I/O interfaces for both the enterprise storage market and the AV/IT professional electronic media storage markets such as film and broadcast content for the disc and card form factors.”

“Intel is delighted that Optware and its HVD/HVC technology have made a significant step toward making the technology an industry standard. The standardization through Ecma process should accelerate the commercialization of the technology, as many of the key players in this field will actively participate in and collaborate with the committee's efforts. Intel looks forward to seeing a commercial HVD/HVC product that will advance the optical disk roadmap one generation ahead,” said Claude Leglise, Vice President of Intel Capital.

“The large capacity together with the high transfer speed of

holographically recorded media will create a quantum leap in media storage technology. Ecma International, which has developed 90% of all modern international standards for optical and magnetic storage media is very pleased to undertake the standardization of HVDs, HVCs and related subjects. We are looking forward to a new success story,” said Jan van den Beld, Secretary General of Ecma.

Werner Glinka, Chairman of TC44, noted: “Holographic Versatile Discs (HVDs) will hit the market soon. Ecma has an excellent track record for delivering standards in an efficient manner, and that is precisely what TC44 is prepared to do. I invite all interested parties to join in the development of HVD standards ensuring compatibility to speed up the adoption of this exciting technology.”

The Collinear Technologies – Optware's exclusive development of the collinear holography technique is part of its effort to make holographic recording technology practical. A patented technology, collinear holography combines a reference laser and signal laser on a single beam, creating a three-dimensional hologram composed of data fringes. This image is illuminated on the medium using a single objective. Using this breakthrough mechanism, Optware dramatically simplified and downsized the previously bulky and complicated systems required to generate holograms. Further enhancements were achieved with Optware's servo system. The introduction of this mechanism enabled reduced pickup size, elimination of vibration isolators, high-level compatibility with DVDs and CDs and low-cost operation, effectively obliterating the remaining obstacles to full commercialization.

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