

## ***Statement for Proceedings - Session 205***

### **New Strategies to Overcome 3bpc Challenges**

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### **Abstract**

3 bit per cell (3bpc) devices offer great potential for price reduction without the need to move to a smaller process. Nevertheless, several inherent obstacles have prevented them from becoming widespread. 3bpc devices exhibit a far worse statistical behavior with substantially deteriorated reliability. New strategies including adaptive DSP and ECC algorithms must be adopted to cope with these devices and represent to the host a reliable device. 3bpc devices are inherently slower and contain larger erase block sizes which pose real challenges in terms of memory management aspects and other limitations.

In this talk we shall present the main obstacles facing 3bpc controllers, and the solutions DensBits provides to enable premium NAND based devices.

Copies of the presentation are available at [www.densbits.com](http://www.densbits.com) or by e-mailing [hanan.weingart@densbits.com](mailto:hanan.weingart@densbits.com).

**Hanan Weingarten** – Hanan currently holds the position of CTO at DensBits Technologies, a company which develops advanced IP and controller technology for Flash memories. Hanan holds B.Sc, M.Sc, and Ph.D degrees from the Technion – IIT, all in electrical engineering. Hanan's fields of expertise include information theory, coding, communication, and DSP. During his Ph.D Hanan won several awards in the fields of information theory and communication, including the prestigious 2007 IEEE information theory society award. Hanan served as a special technical consultant to leading storage and communications companies and has spent some time at Bell Labs as an information theory researcher.

**DensBits Technologies** develops advanced IP and controller technology for Flash memories enabling a significant cost reduction along with an enhanced performance in Flash-based storage systems. DensBits tightly cooperates with leading Flash manufacturers, complementing their advanced process node technologies with DensBits' cutting-edge controller technology in the way of pushing forward Flash memories roadmap.

## *Biographical statement*

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