

DNA: The Key for Future Storage

Written by Marco Attard
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Researchers at the European Bioinformatics Institute (EBI) believe they have the next storage format-- DNA, a material that is both robust and long lasting while being incredibly small.



The EBI claims one can store "at least" 100 million hours of HD video in a cup of DNA.

As an alternative to HDDs and magnetic tape, DNA might be hard to beat. As EBI researcher Nick Goldman puts it, "DNA is a robust way to store information because we can extract it from woolly mammoth bones, which date back tens of thousands of years, and make sense of it. It is also incredibly small, dense and does not need any power for storage."

The EBI method encodes the 1s and 0s of digital recordings in the chemical letters of a DNA sample (G, A, T and C), before synthesis of the code into physical DNA via California-based biotechnology company Agilent.

The result (apparently looks like "a tiny piece of dust") is readable via DNA reading machine, and the EBI says it is able to reconstruct original data with 100% accuracy. Files encoded into DNA include an mp3 of Martin Luther King's "I Have a Dream" speech, a jpg photo of EBI, a pdf of a Watson and Crick paper, a txt of all Shakespeare sonnets and a file describing the encoding.

This is not the first time DNA was used to store digital data-- last year Harvard encoded a book

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into DNA. But Goldman says the EBI method is the first to correct translation errors between digital and DNA codes.

The system is also scaleable for archival storage, with 1g of DNA able to store up to 1 million CDs worth of data for over 10000 years. "As long as someone knows what the code is, you will be able to read it back if you have a machine that can read DNA," Goldman claims.

The next step for the researchers is to perfect the coding scheme while working on commercial applications for the technology.

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