

# Apacer

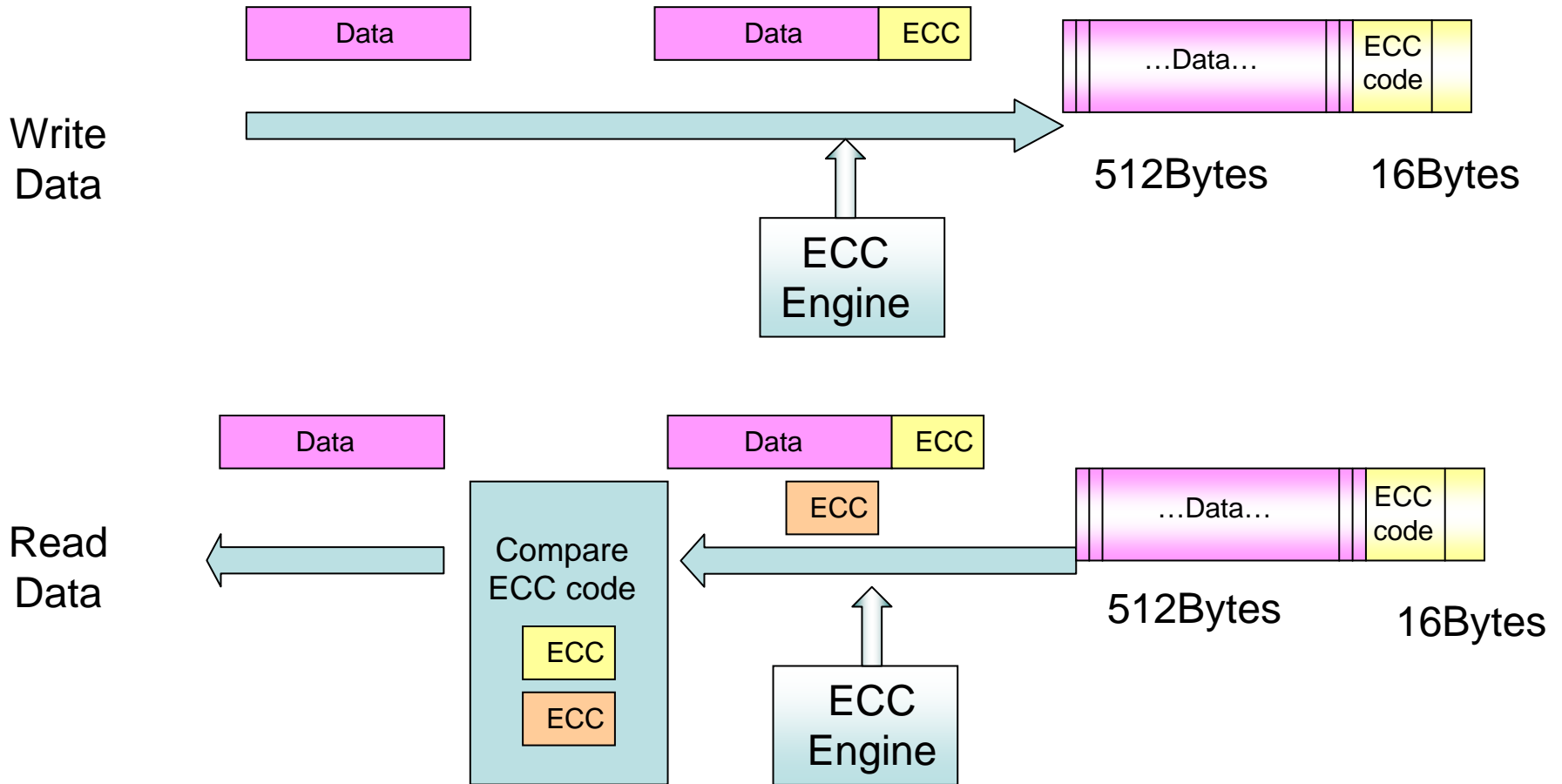
## *ECC - Error Correction Code*

*HW Development Dept.  
6 May 2009*

# What is ECC

- Error Correction Code
- Implements hardware ECC engine to enhance data integrity and useable block life

# Data and ECC operation

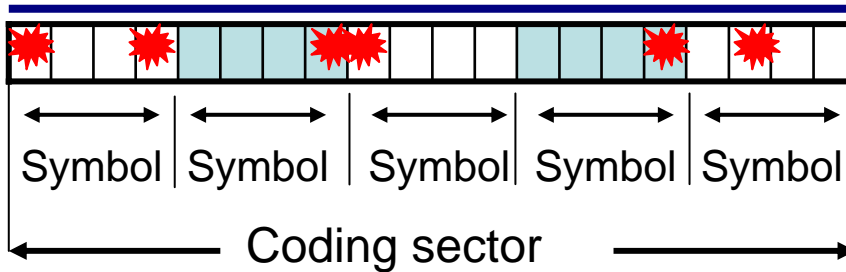


# NAND Error Correction Choices

- NAND flash requires multiple bit error correction
  - Hamming codes only correct single bit errors
  - Reed-Solomon (Symbol-based)
  - BCH (Binary-based) – ***all current products use***

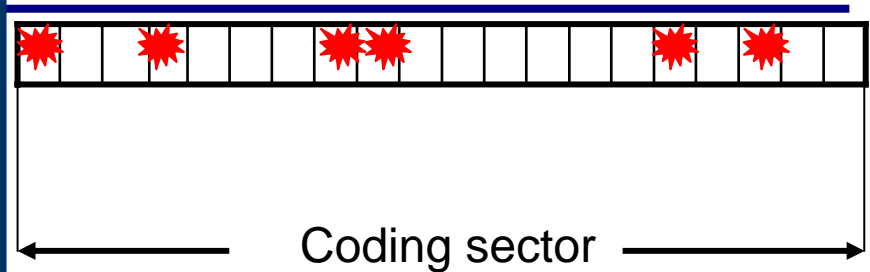
# Comparing R-S and BCH coding

R-S



- Symbol length = 4 bits
- Code length = 5 symbols
- Bit errors = 6
- Error correction = 4
- Corrects 4 errors for every 5 symbols (20 bits)

BCH



- Symbol length = 1 bit
- Code length = 20 symbols
- Bit errors = 6
- Error correction = 6
- Corrects 6 errors for every 20 symbols (20 Bits)

The Apacer logo is rendered in a dark green, serif typeface. The letters are bold and well-spaced, with a classic, slightly formal appearance. The 'A' is particularly prominent, with a sharp peak and a wide base. The 'p' has a long, elegant descender. The overall style is clean and professional, typical of a corporate brand mark.

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