

# 1. CONTEXT: THE GAP BETWEEN LOGIC AND PHYSICS

## Scenario: High-Density Inventory



## Core Conflict: Efficiency vs. Stability



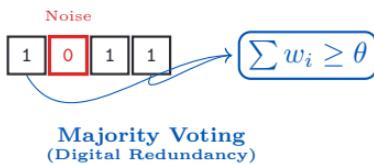
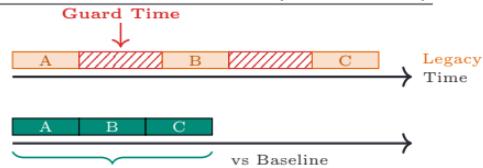
## 2. MECHANISM AND PHYSICAL IMPACT (HOW IT WORKS)

### A. MECHANISM (INPUT)



SPECTRAL COMPRESSION

### B. PHYSICAL RESULT (OUTPUT)



ERROR CORRECTION

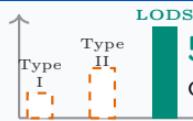
Soft Sync: Recovers Data



## 3. PERFORMANCE BREAKTHROUGHS (CORE OUTCOMES)



**10x Lower Energy**  
 $\approx 150\mu J/tag$  (vs Analog)



**5,200+ Tags/sec**  
Goodput ( $P_e \approx 0.1$ )



**99.1% Accuracy**  
Safe Operating Area