

Data Communications
Code Division Multiplexing

Assume users A, B, and C are assigned the following codes:

A: 10101100

B: 01000011

C: 00101010

To transmit a bit, the code of the sender is changed so that the 0 bits are replaced by -1, then it is multiplied by the data bit after replacing 0 with -1. We assume all senders can send data at the same time.

Show that if A sends a 0, B sends a 1, and C sends no bit, the receivers can detect all transmitted bits correctly.