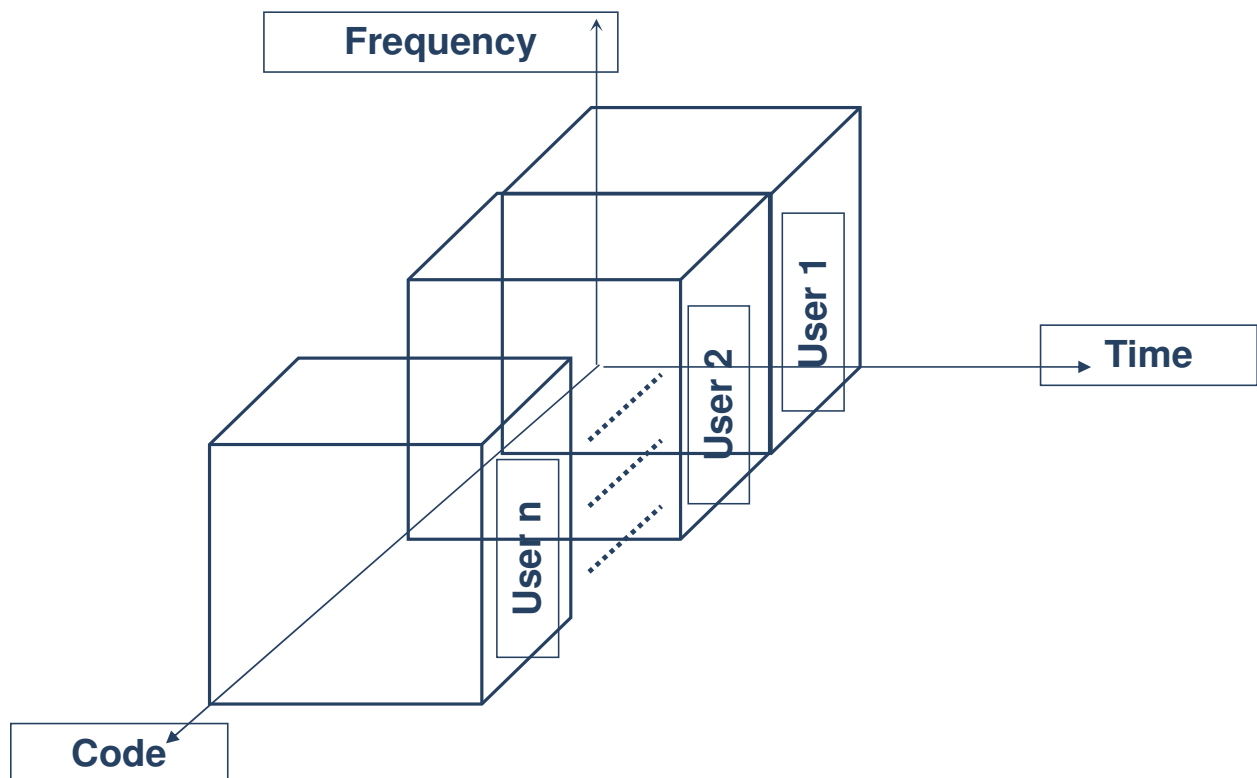


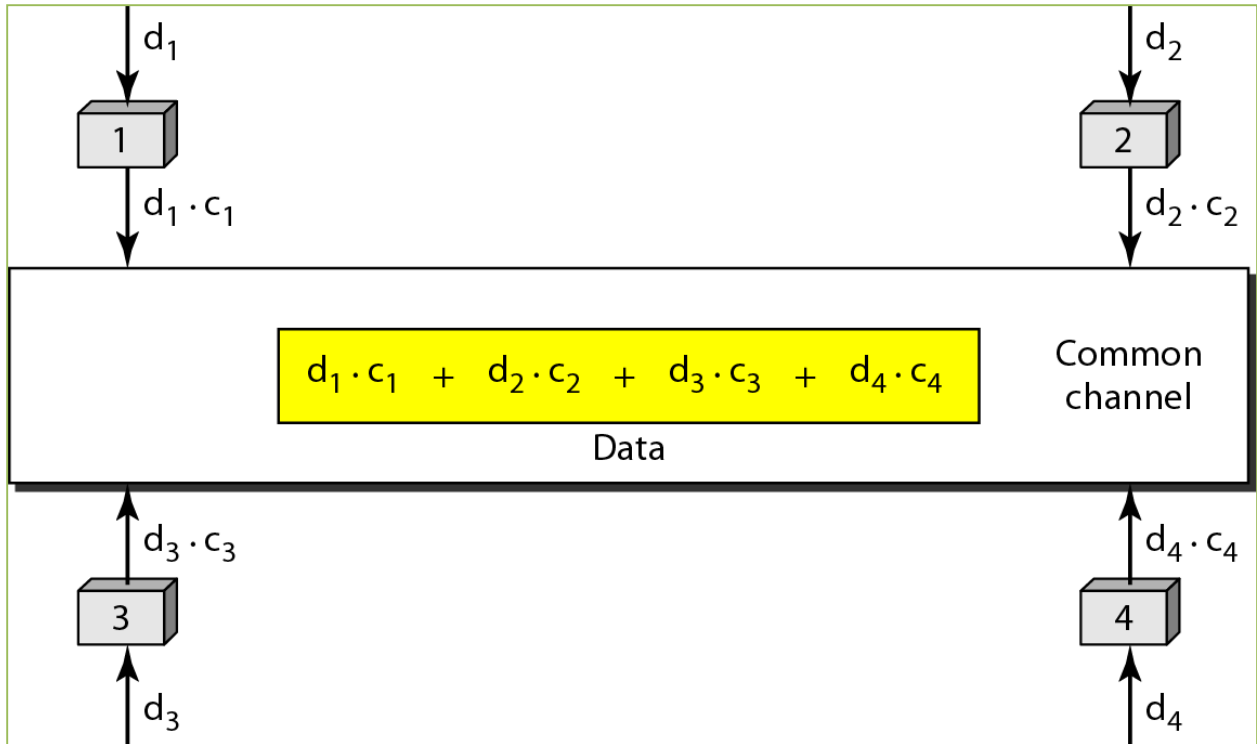
Code Division Multiple Access:

- Narrow band message signal is multiplied by large bandwidth signal called spreading code or PN sequence.
- All users use same carrier frequency & transmit simultaneously.
- Each user has pseudorandom codeword which is approximately orthogonal to all other codeword.
- Codes must have good auto correlation property but no cross correlation property.

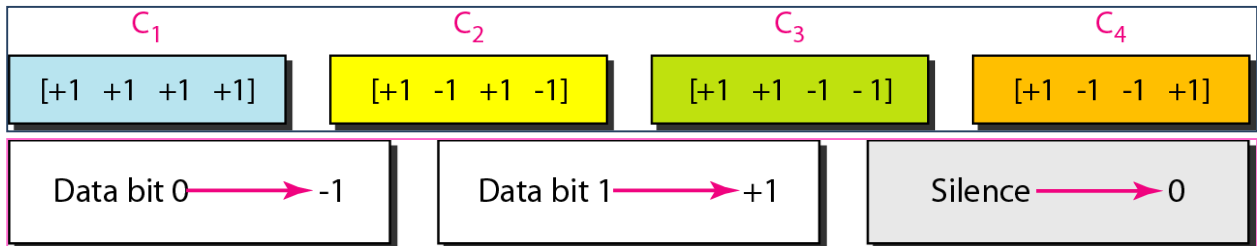


Features:

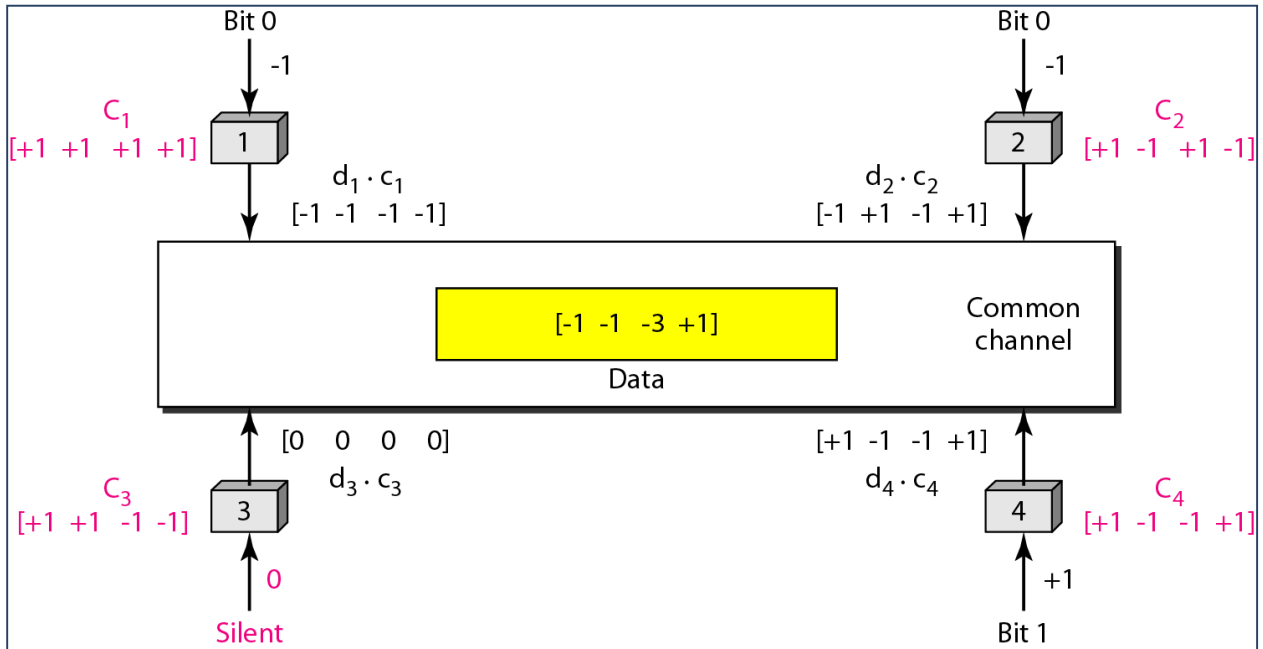
- In CDMA system users share the same frequency, either TDD or FDD may be used.
- No absolute limit on the no. of users. The system performance gradually degrades as the no. of users increases.
- Soft handoff is performed.
- Self jamming is the problem.
- The near far problem occurs at CDMA receiver if an undesired user has a high detected power as compared to the desired user.



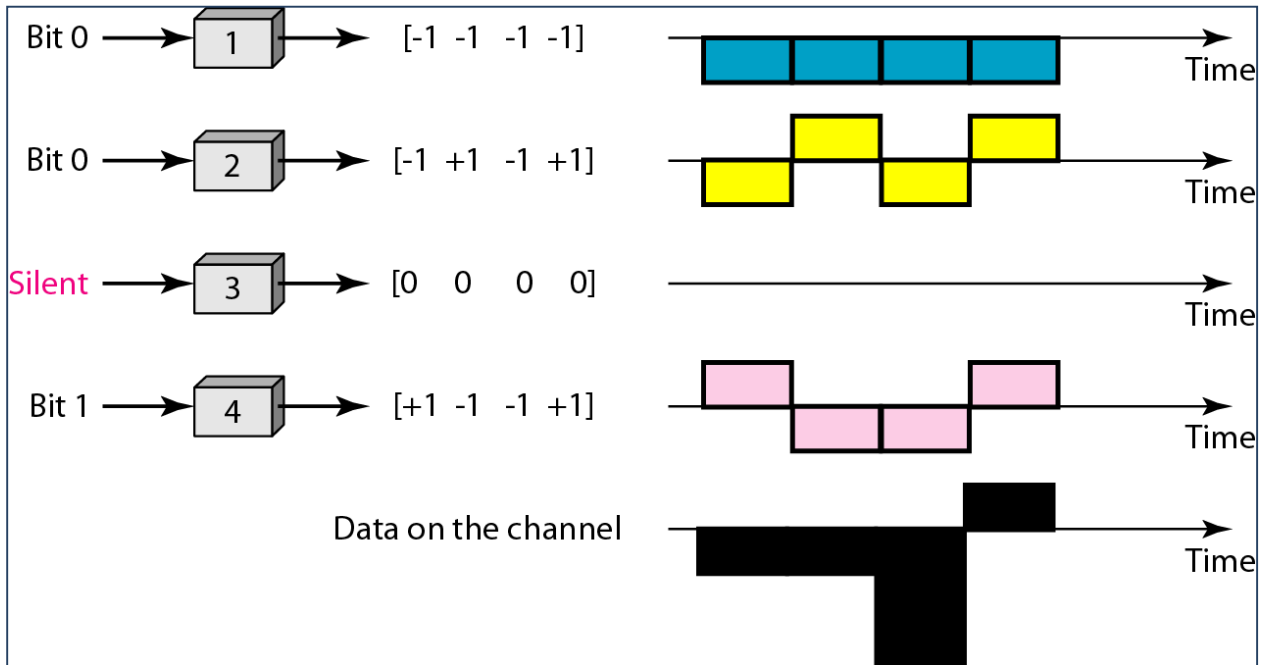
Chip Sequences and Data Representation:



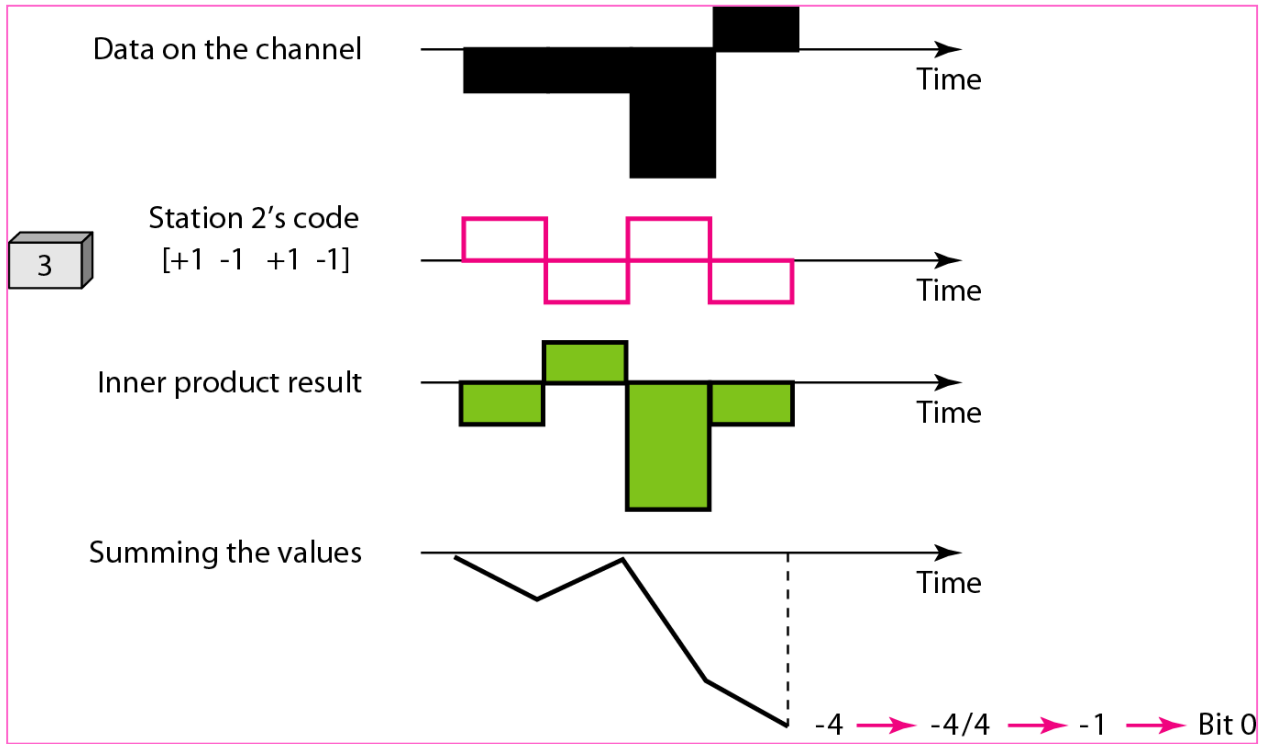
Sharing channel in CDMA:



Digital signal created by four stations in CDMA:



Decoding of the composite signal for one in CDMA:



In CDMA subscriber near the base station must have low power than the subscriber far away from the base station with larger power since nearer subscriber will generate more noise than the farthest one so there must be some mechanism to reduce the power of nearer subscriber.

Since chip code has less interval than information signal, hence chip code has high rate of frequency. So when chip code is multiplied with information signal, transmitted signal gets spread due to high frequency. That's why it is called spreading code.

When received signal will be multiplied by the same chip code then same information signal will be attained.

Always a control channel will contain the respective chip code and intimate the mobile phone prior the user channel call set-up.