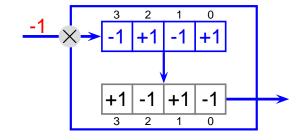## CDMA

Code Division is a method which every station uses the whole channel all the time.

The number of sub–channels is fixed; let it be $\mathcal{N}$. Each bit (which is represented as +1, −1, with 0 for silence) is sent as $\mathcal{N}$ pulses; the $\mathcal{N}$ corresponding pulses coming from the $\mathcal{N}$ sub–channels are added to form one common signal.

Each sub–channel is given an $\mathcal{N}$–bit **code** which is used to form the $\mathcal{N}$ pulses to be sent by this sub–channel. this is done by multiplying the kth digit of the code by the input signal to form the kth pulse.

A sub–channel with a code of (+1,-1,+1,-1) receives a -1 as input and produces 4 pulses: (-1,+1,-1,+1).

3	2	1	0
-1	+1	-1	+1

+1	-1	+1	-1
3	2	1	0

-1