



GSM Air Interface U_m



- Uses Physical **FDMA/TDMA/FDD** physical
 - In 900 MHz band: 890-915 MHz Uplink band, 935-960 MHz Downlink
 - Radio carrier is a 200kHz channel => 125 pairs of radio channels
 - Called Absolute Radio Frequency Channel Number (ARFCN)
 - ARFCN numbers given by $f(n) = 890 + .2n$ MHz for Uplink band $n = 0, \dots, 124$
 - Corresponding downlink is $f(n) + 45$ MHz
 - Channels and ARFCN slightly different in other frequency bands
 - A TDMA frame is defined on the radio carrier (8 users per carrier)
 - Channel rate is 270.833 kbps
 - (RELPC) digital speech 13.3kbps
 - Two types of logical channels map onto physical channels
 - Control Channels (call setup, power adjustment, etc..)
 - Traffic Channels (voice or data) = 22.8kbps = 1 slot in a TDMA frame

GSM - TDMA/FDMA

