Scheduling algorithms

- A possibility to implement scheduling algorithms (used e.g., for LTE):
  - each radio channel, or resource block (RB) is allocated to a user, according to an auction
  - A parameter p[i] is considered for each user and for each RB, the user with the biggest p[i] wins the auction and receives the RB
  - The number of RBs allocated to a user in a scheduling cycle can be limited
    - Either by user's weight W[i]
    - Or by a parameter equal to all users

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- The parameter p[i] can be:
  - For Opportunistic scheduling (OS), the quality r[i] of the radio link between the Base Station (BS) and the user equipment (UE) for DL scheduling, or from the UE to BS for UL sched
  - For Round Robin (RR): The (simulation) time elapsed since the user *i* was served last time
    - $t_{now} - t_{last\_time\_served\_user[i]}$ (1)
  - For WRR: the same parameter like for RR, multiplied with a weighting factor W[i]>0 (usually ≥ 1)
  - For proportional fair (PF): the product between the parameter from WRR and the quality of the radio link
  - For longest queue (LQ): the queue length q[i] of user i, multiplied with W[i]