

5G NR: Radio  
Access  
Networks

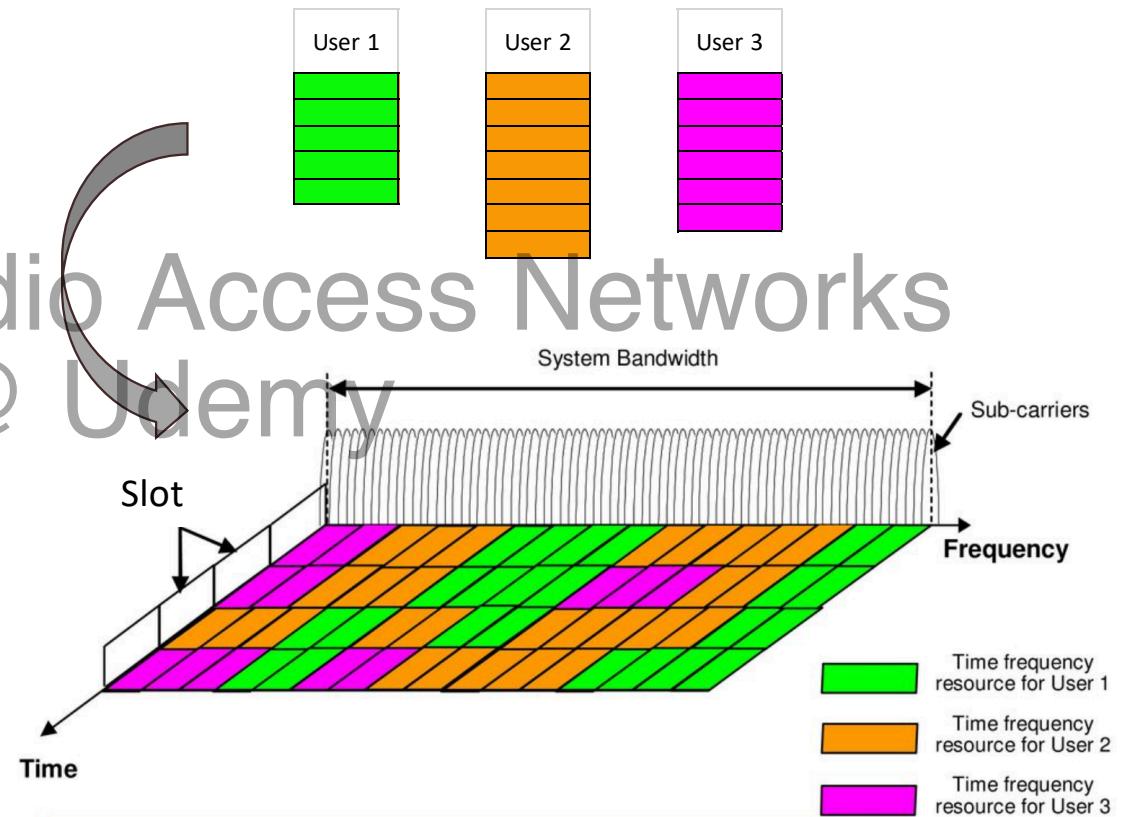
© 5G NR: Radio Access Networks  
@ Udemy

**SCHEDULER**

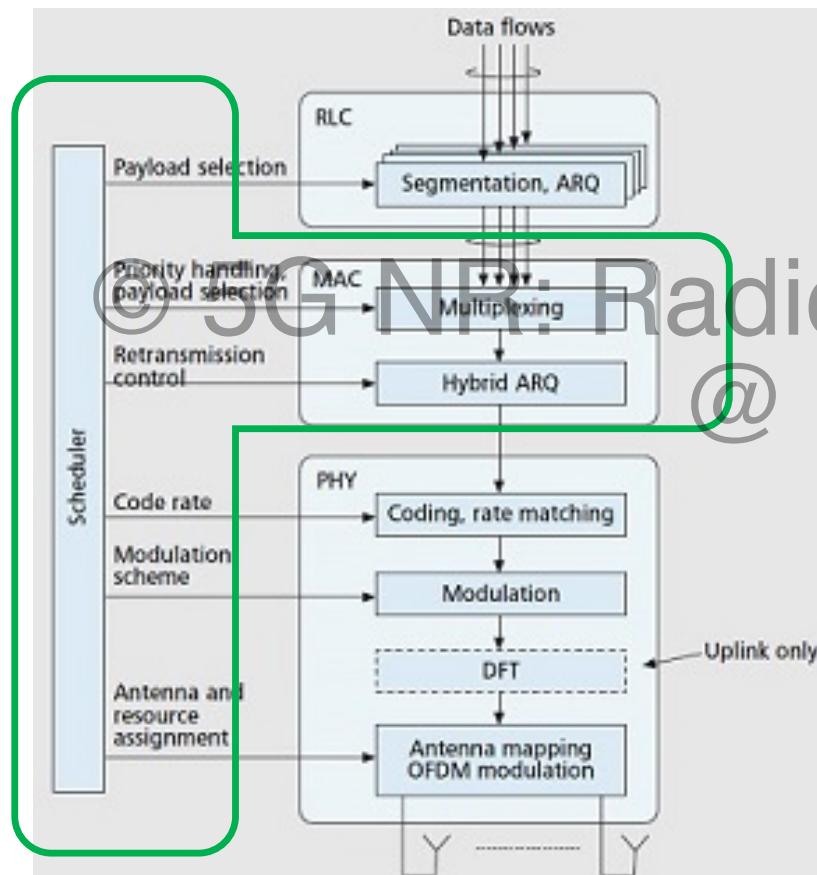
# What is a Scheduler?

Shared Channel Transmission

© 5G NR: Radio Access Networks  
@ Udemy



# Scheduler



## Inputs

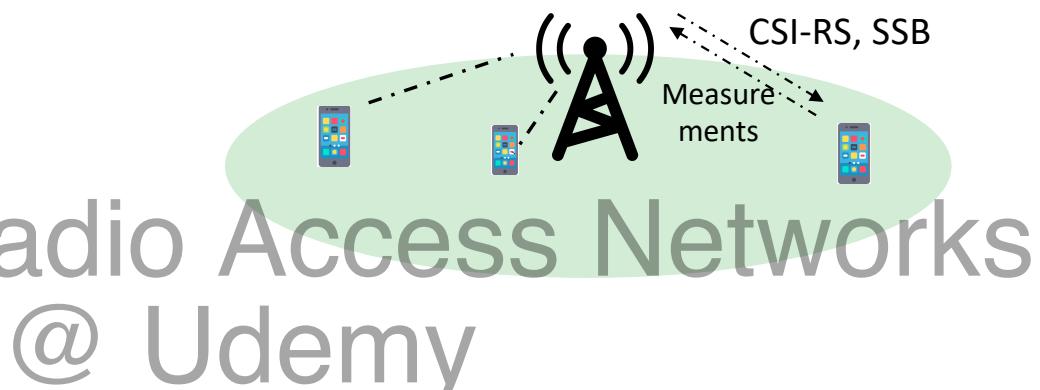
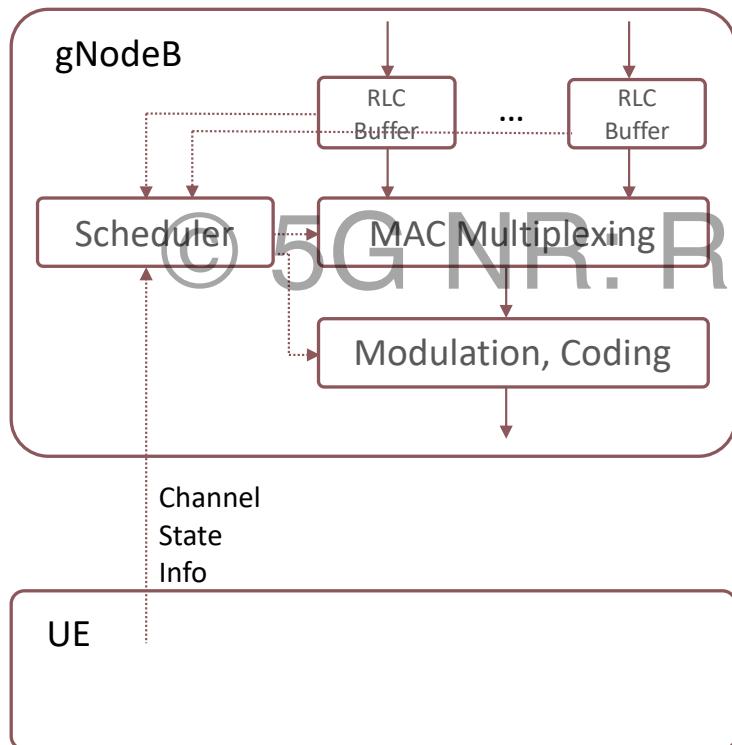
- Channel Conditions
- Buffer Status
- Data flows priority etc

## Scheduling

- Devices
- Resource blocks
- Transport format: TBS, Modulation, Antenna

© 5G NR: Radio Access Networks  
**DL SCHEDULING**  
@Udemy

# Downlink Scheduling: Inputs

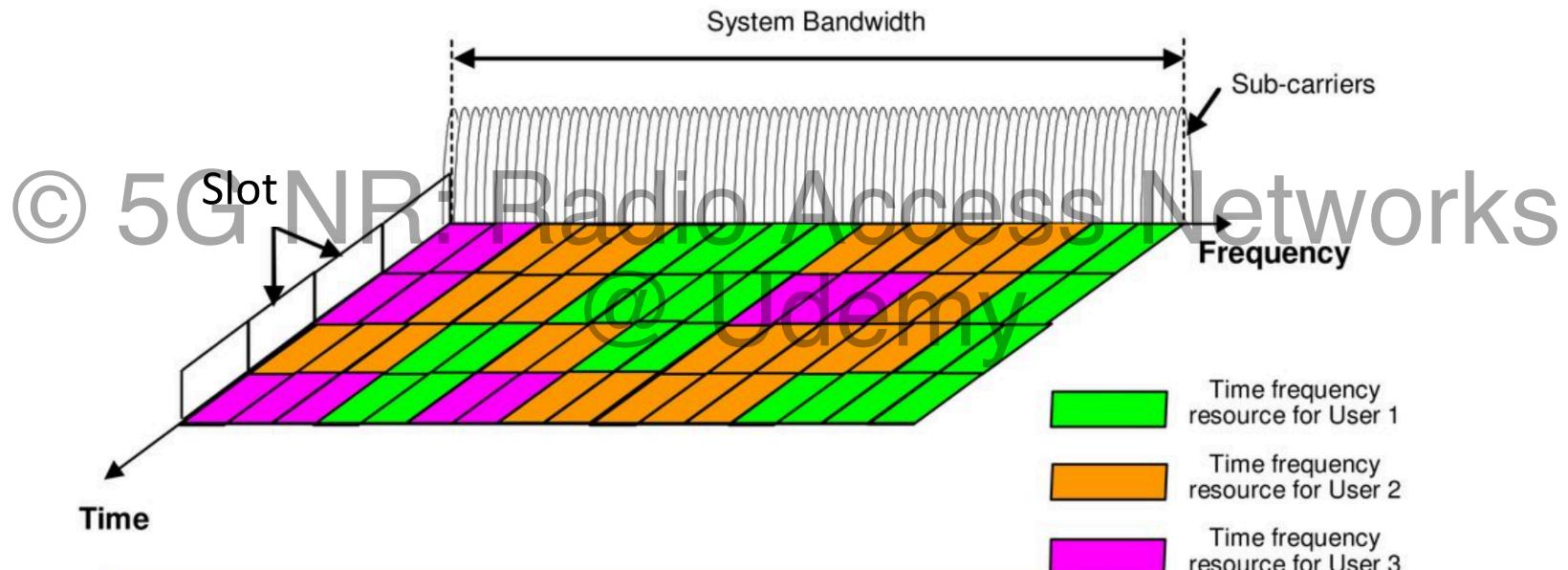


## © 5G NR. Radio Access Networks @ Udemy

### Channel Conditions:

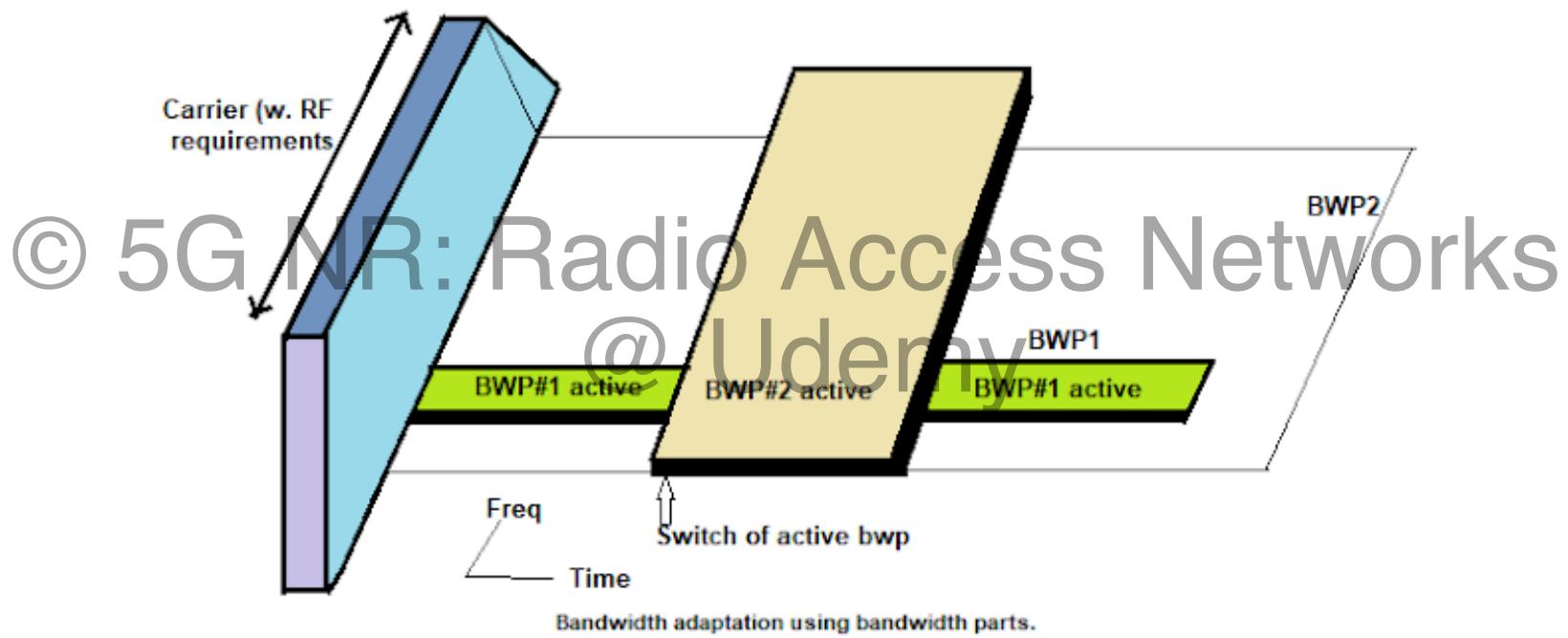
- Ref: CSI-RS (Channel State Information Reference Signal)
- What: RSRP, CSI (CQI, PMI, RI)
- Measured on: CSI-RS, SSB
- Type: Periodic, Semi-persistent, Aperiodic

# Downlink Scheduling: Scheduling



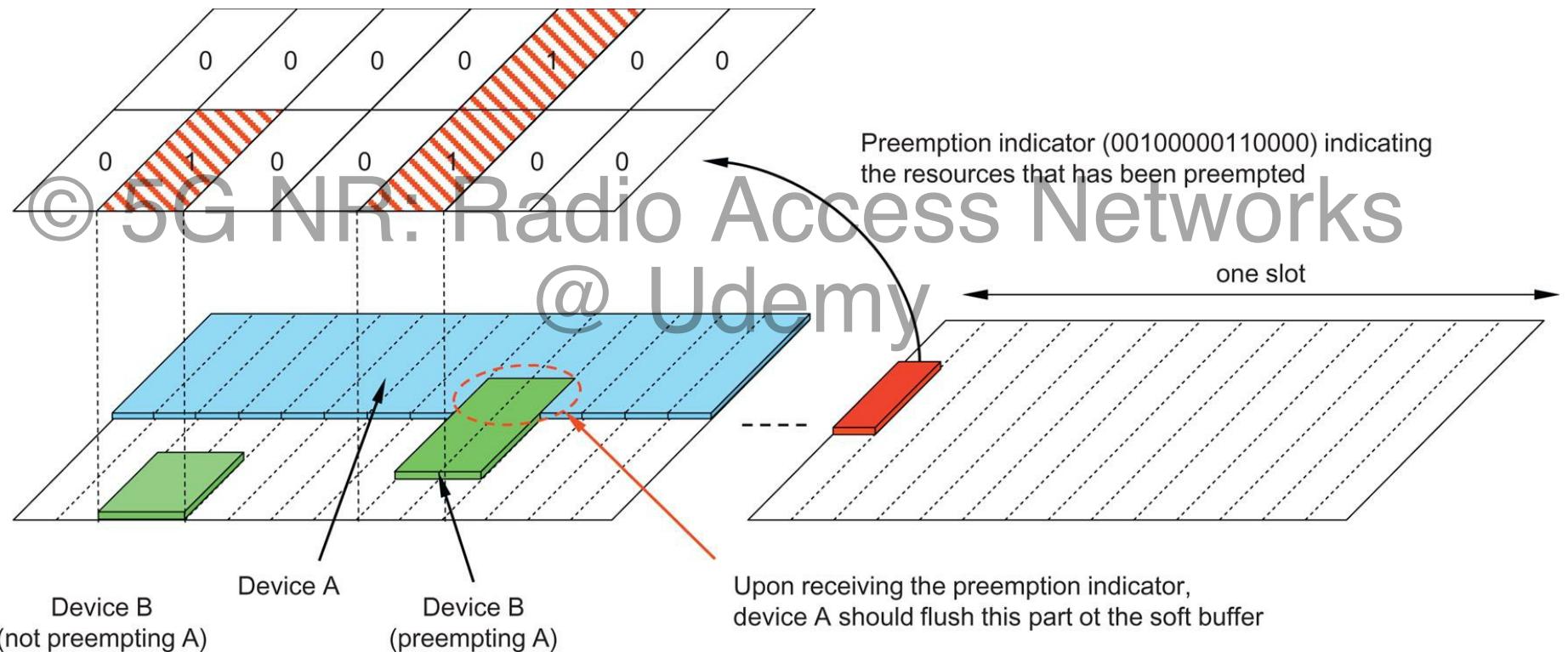
Channel Dependent Scheduling: Multi user diversity

# Downlink Scheduling: Bandwidth Parts



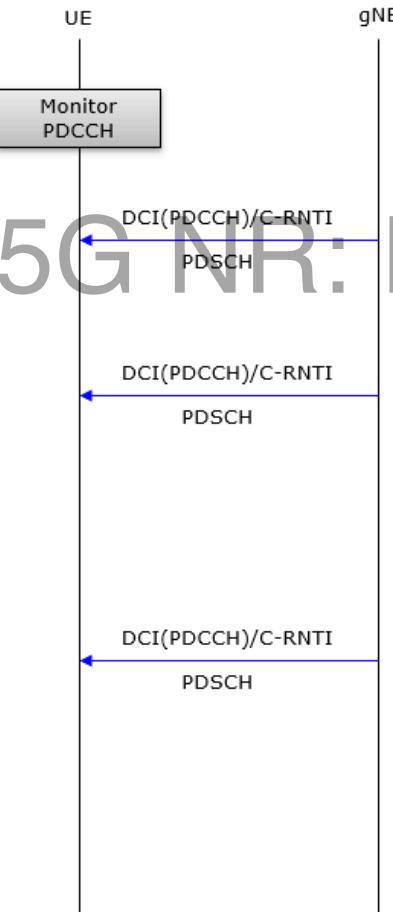
Receiver-bandwidth adaptation

# Downlink Scheduling: Preemption

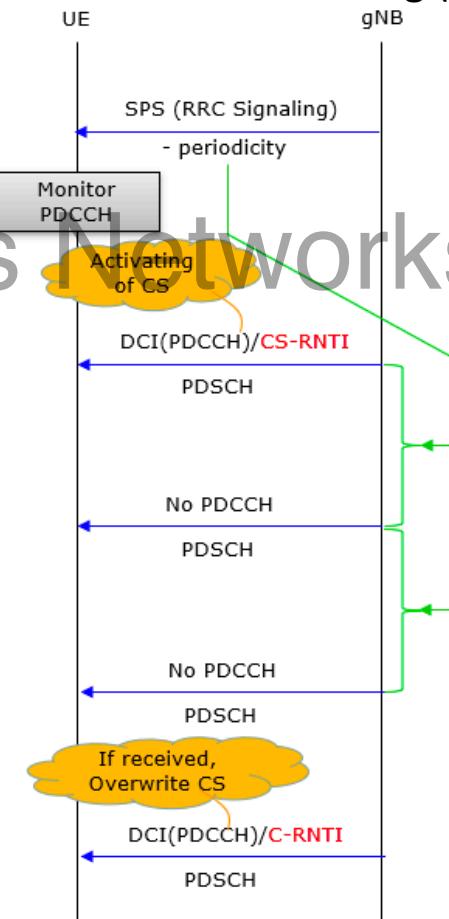


# Downlink Scheduling: Scheduling

Dynamic Scheduling



Configured Scheduling  
Semi Persistent Scheduling (SPS)

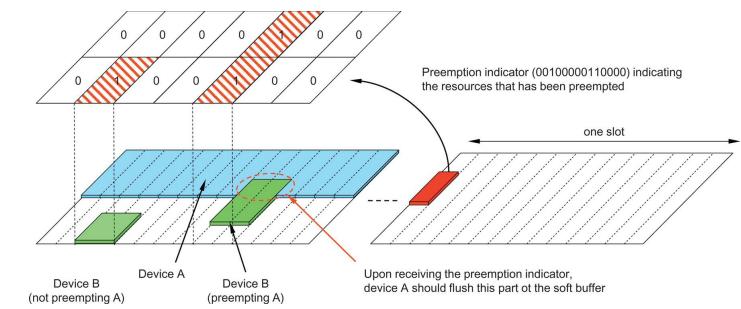
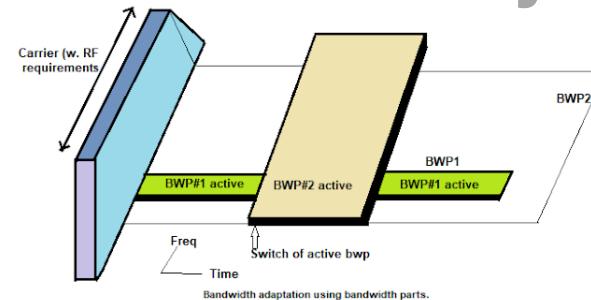
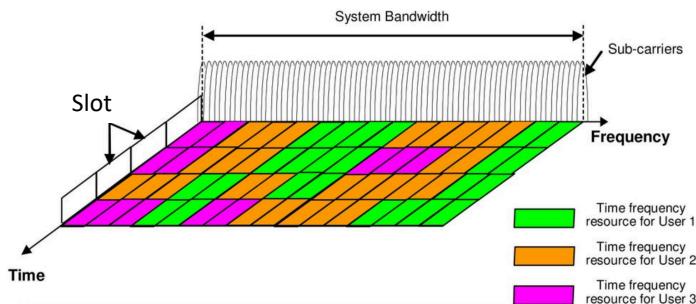


© 5G NR: Radio Access Networks @ Udemy

# Downlink Scheduling: Scheduling

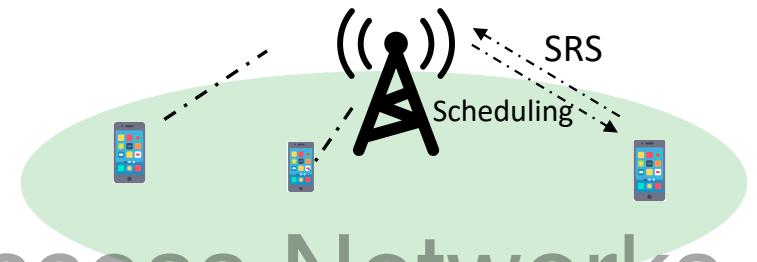
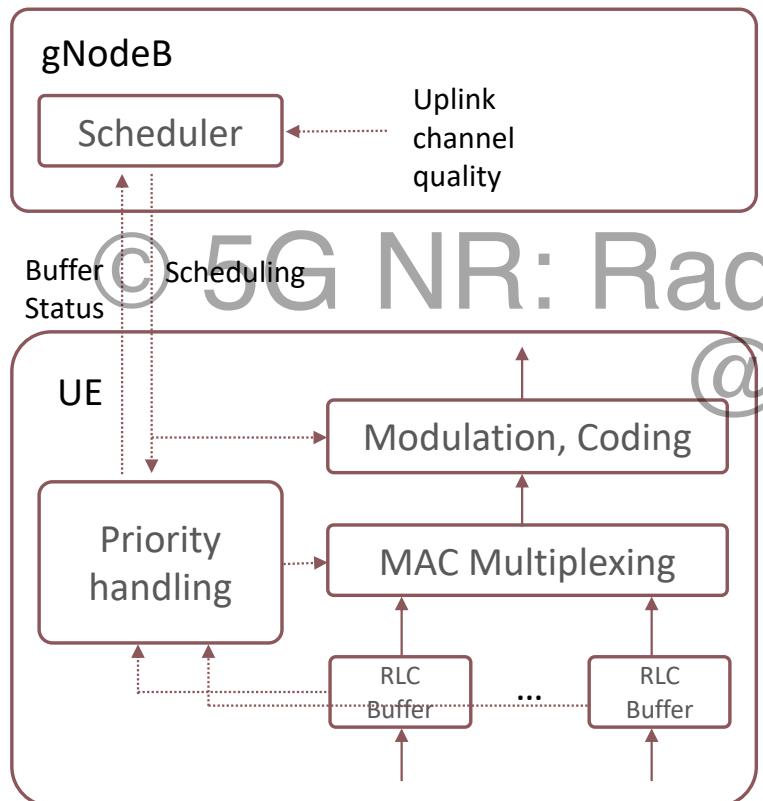


© 5G NR: Radio Access Networks  
@ Udemy



© 5G NR; Radio Access Networks  
**UPLINK SCHEDULING**  
@ Udemy

# Uplink Scheduling



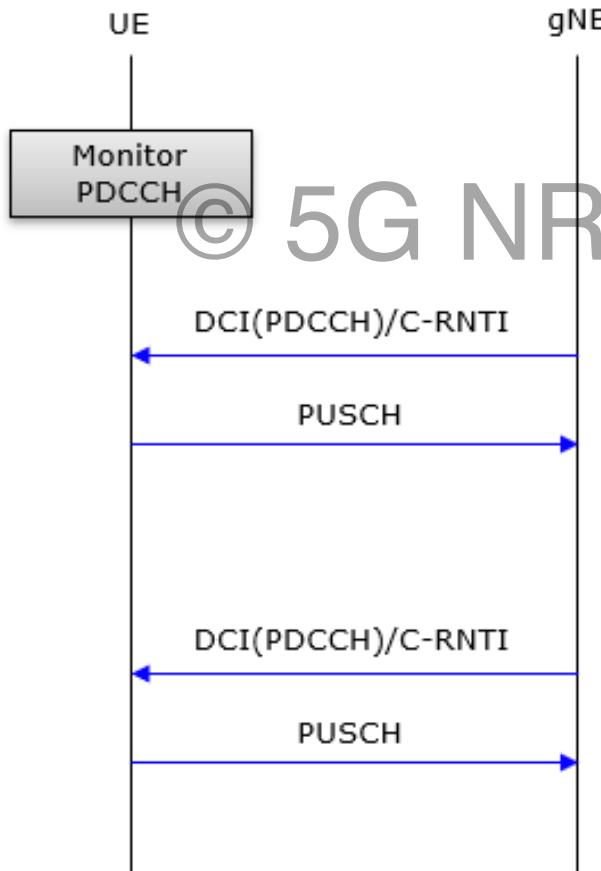
© 5G NR: Radio Access Networks  
@ Udemy

SRS (Sounding Reference Signals)  
- Max 4 ports (CSI-RS 32)

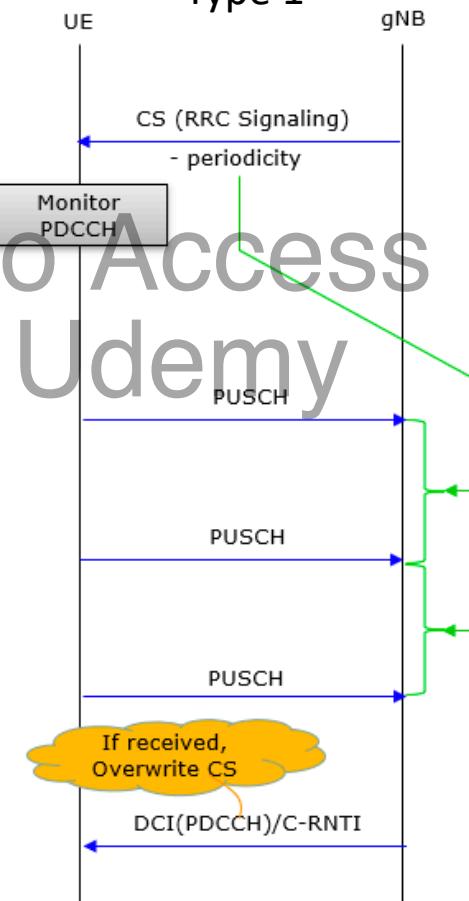
Scheduling  
- Power Limited (vs Bandwidth limited)  
- Per device (vs per radio bearer)

# Uplink Scheduling

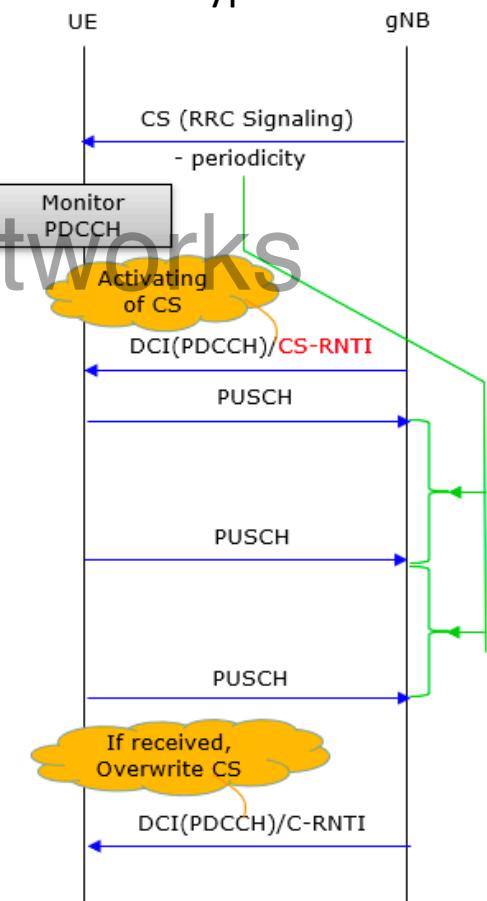
Dynamic Scheduling



Configured Scheduling  
Type 1



Configured Scheduling  
Type 2



© 5G NR: Radio Access Networks  
@ Udemy

© 5G NR: Radio Access Networks  
THANK YOU  
@Udemy