5G NR: Radio Access Networks

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MEDIUM ACCESS CONTROL (MAC) LAYER

MAC

Functions of MAC

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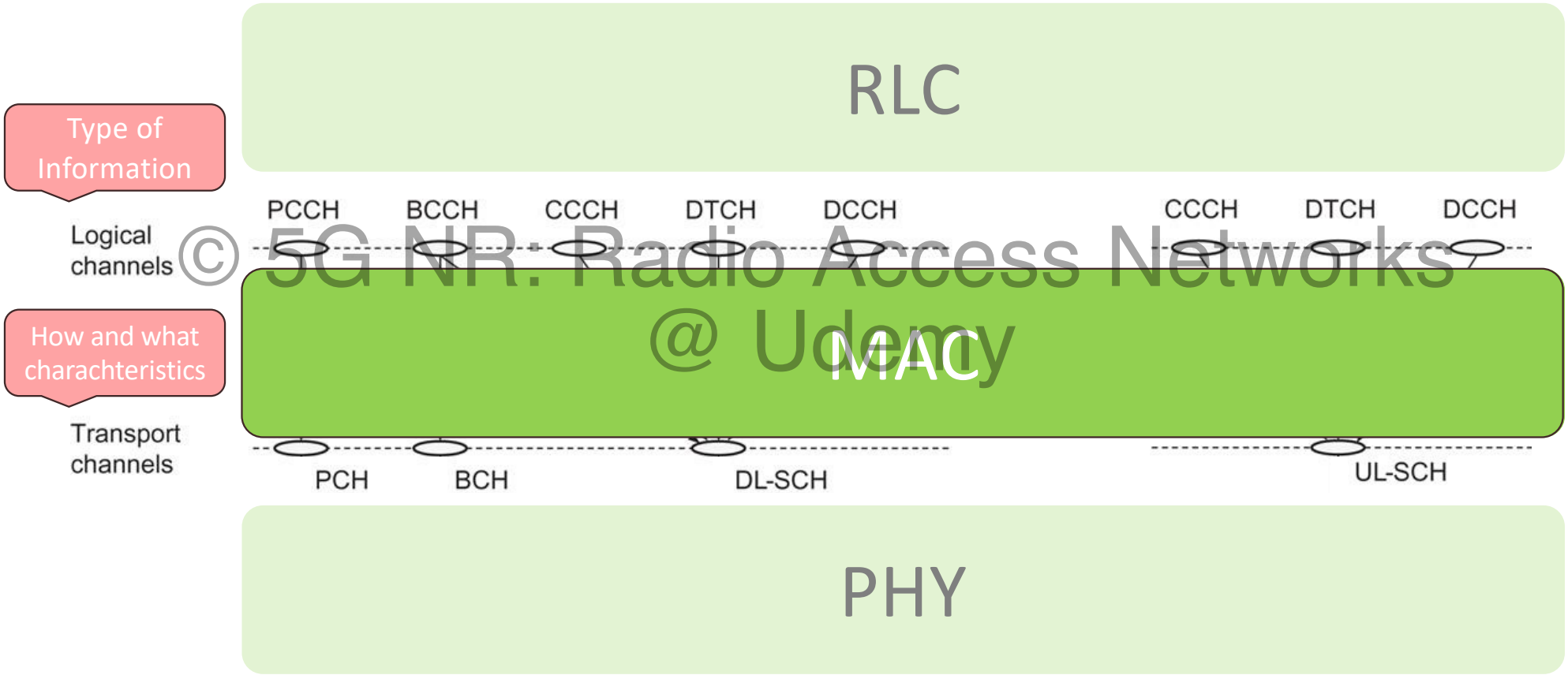
- logical-channel multiplexing
- hybrid-ARQ retransmissions
- scheduling
- multiplexing/demultiplexing for CA

Multiplexing logical channels



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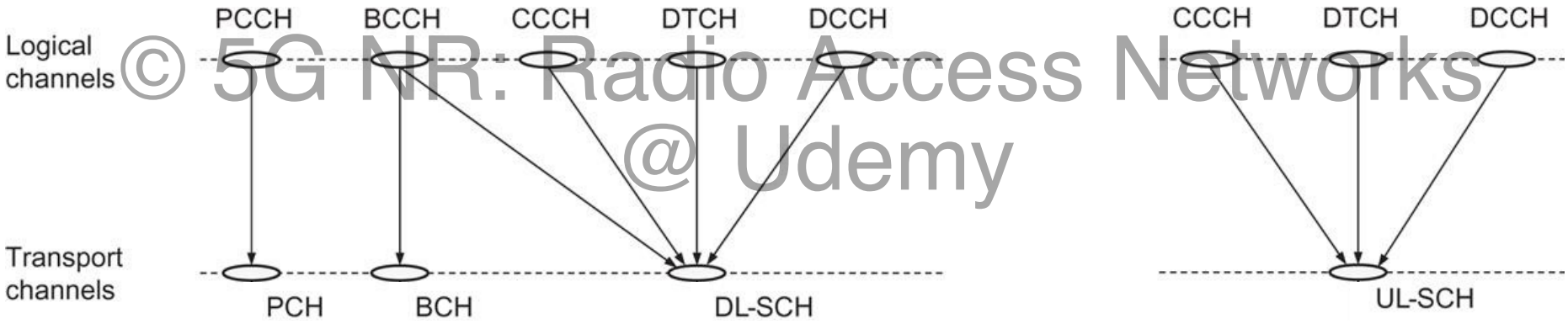
Multiplexing logical channels

Logical channels:
- Broadcast Control Channel (BCCH)
- Paging Control Channel (PCCH)
- Common Control Channel (CCCH)
- Dedicated Control Channel (DCCH)
- Dedicated Traffic Channel (DTCH)



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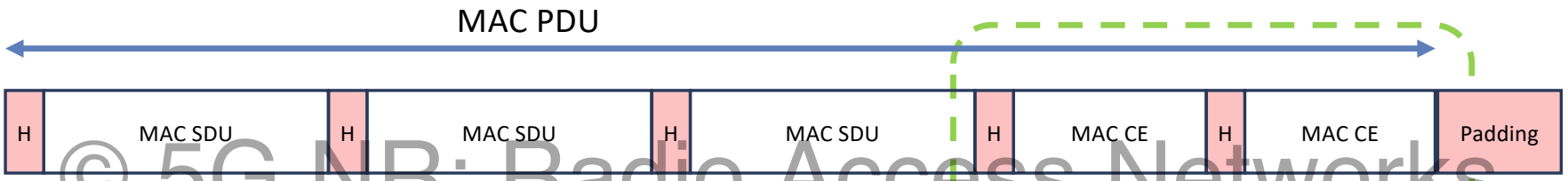
Transport channels:
- Broadcast Channel (BCH)
- Paging Channel (PCH)
- Downlink Shared Channel (DL-SCH)
- Uplink Shared Channel (UL-SCH)
- Random-Access Channel (RACH)

Control Elements



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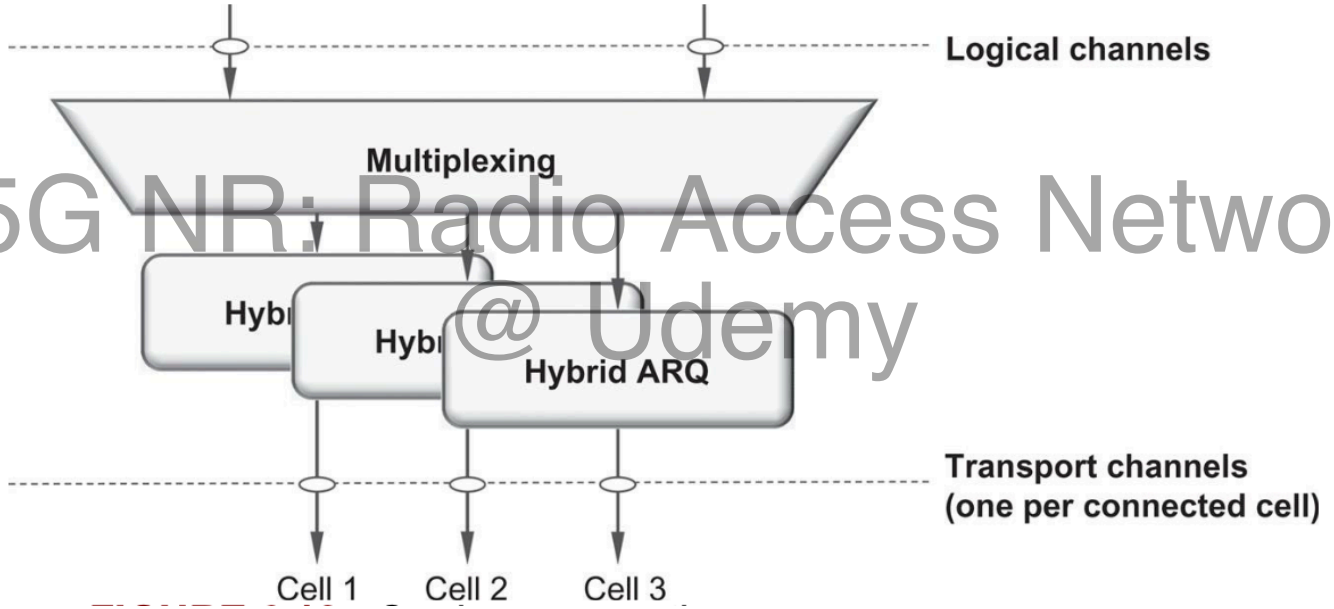
MAC CE

- Scheduling
- Random Access
- Timing Advance etc

Carrier Aggregation



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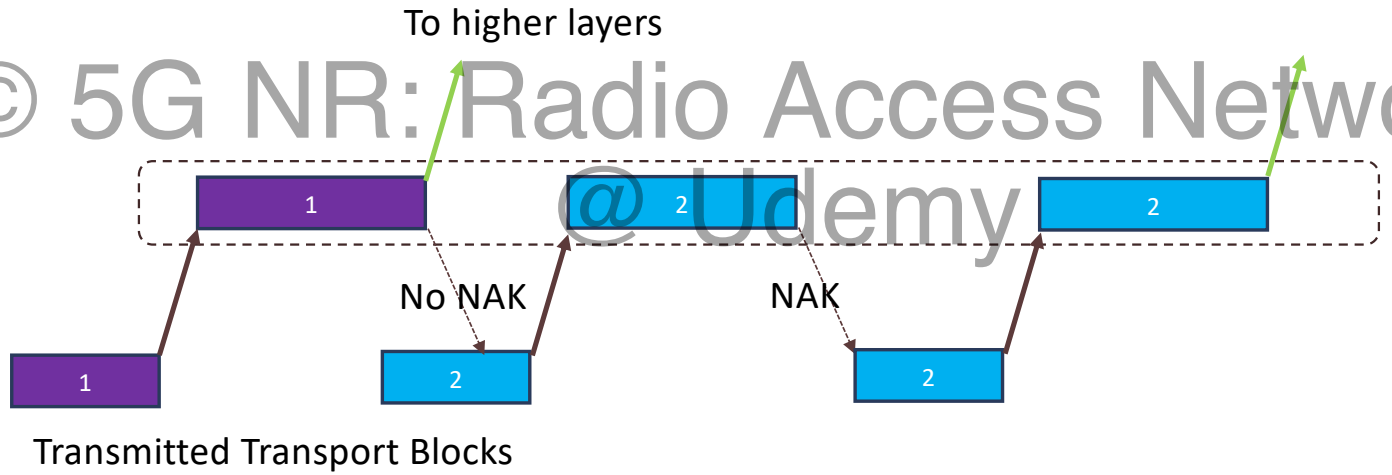
HARQ – Stop and wait

‘Hybrid’ ARQ



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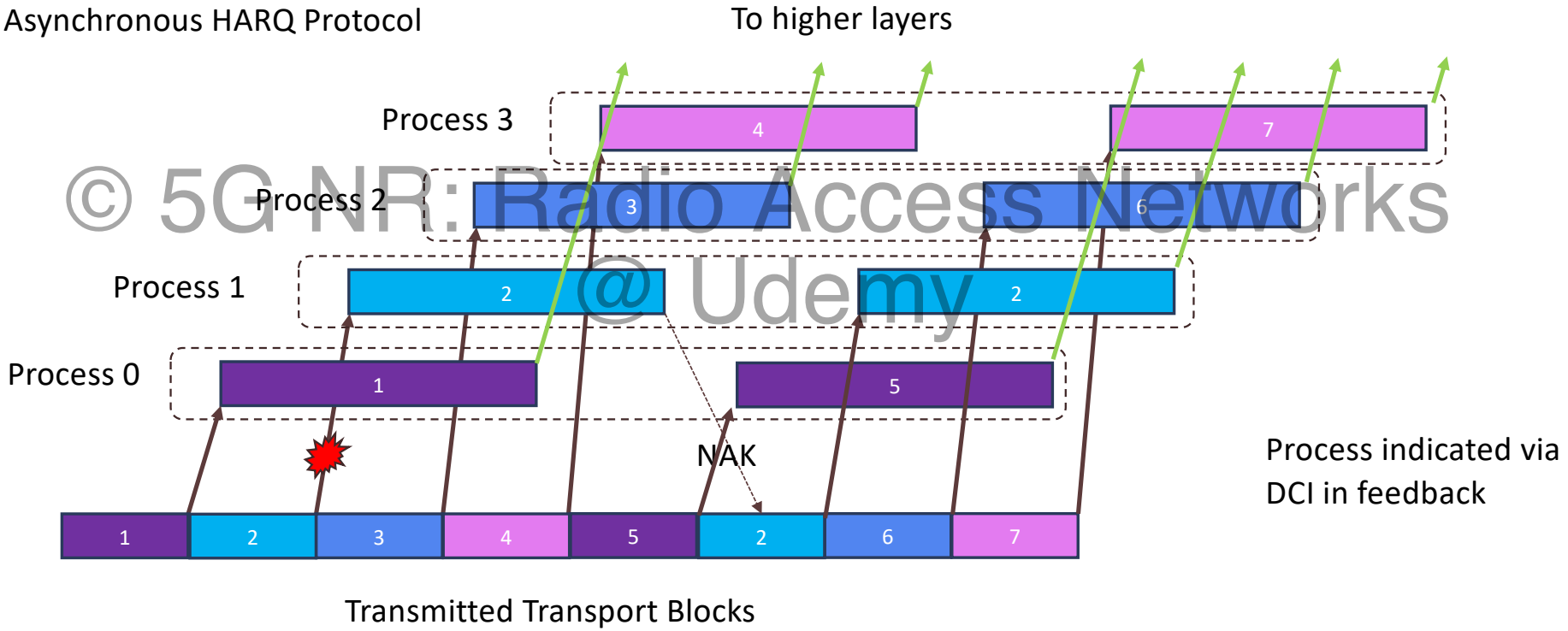
HARQ – Stop and wait

LTE: Synchronous HARQ protocol
NR: Asynchronous HARQ Protocol



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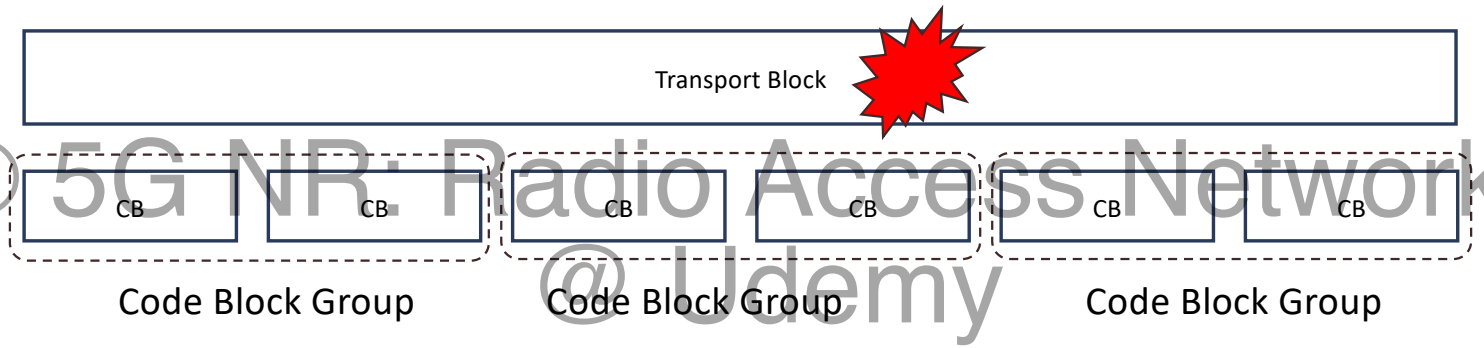
HARQ - CBG



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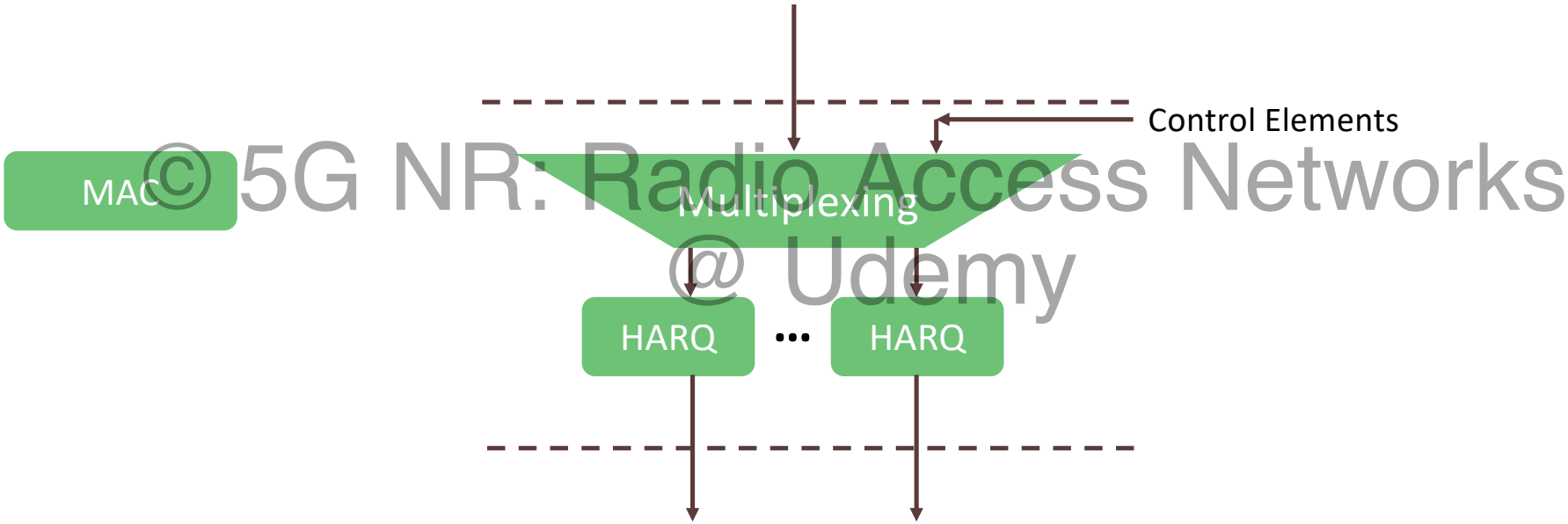
Summary



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THANK YOU

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