5G System

THE 5G USE CASES

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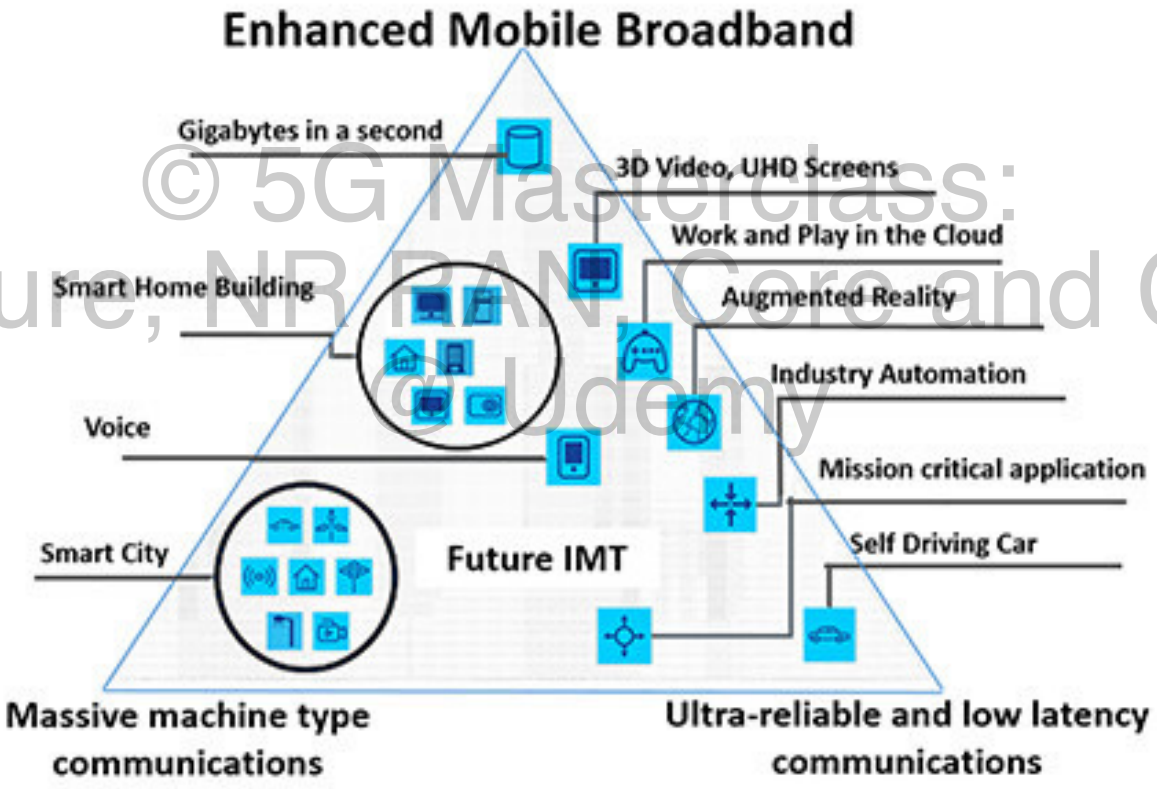
The 5G Use Cases



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Enhanced Mobile Broadband

- Peak data rate: 20 Gbps (DL) , 10 Gbps (UL)
- Peak spectral efficiency: 30 bps/Hz, 15 bps/Hz
- User experienced data rate: 100 Mbps (DL), 50 Mbps (UL)
- Area traffic capacity: 10 Mbps / Sq.m
- Speed: Up to 500 Kmph
- Energy Efficiency
- Low cost per bit

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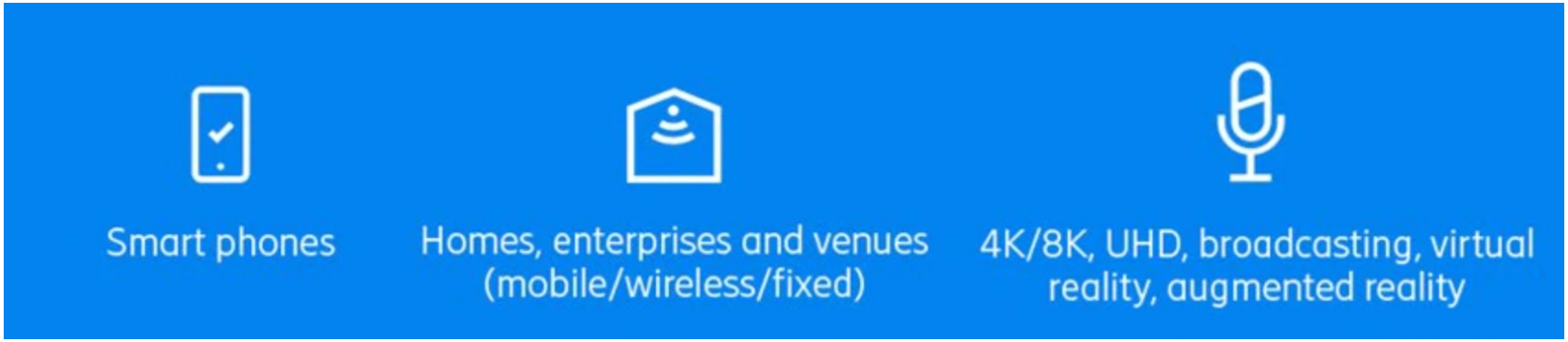

Massive Machine Type Communications (mMTC)

- Connection density: 1,000,000 devices per sq km2
- Battery life: Up to 10-15 years
- Low data rate: 1-100 kbps
- Enhanced coverage

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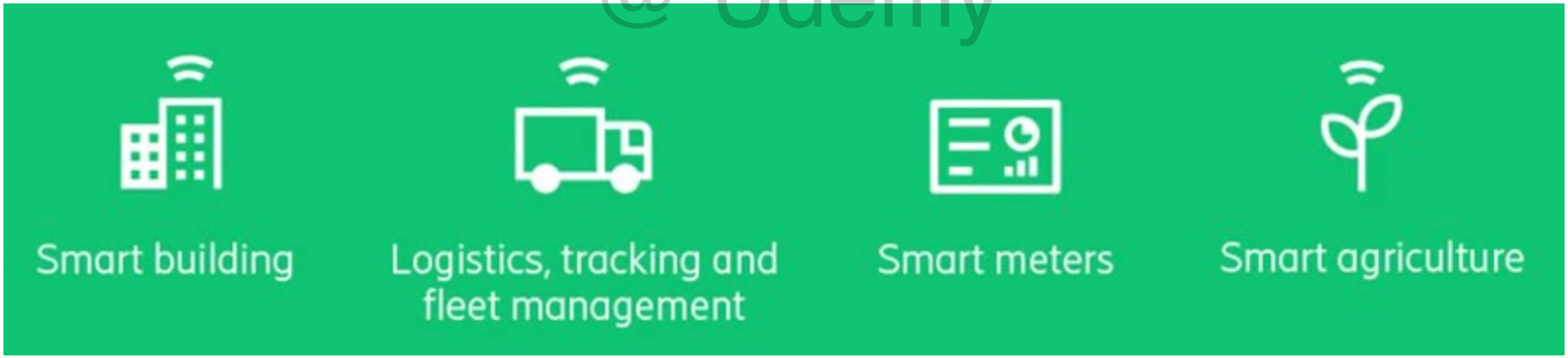

Ultra Reliable Low Latency Communications

- Low User plane latency: 1 ms
- Low Control plane latency: 10 ms
- Reliability: 99.999% success rate
- Mobility interruption time: 0 ms

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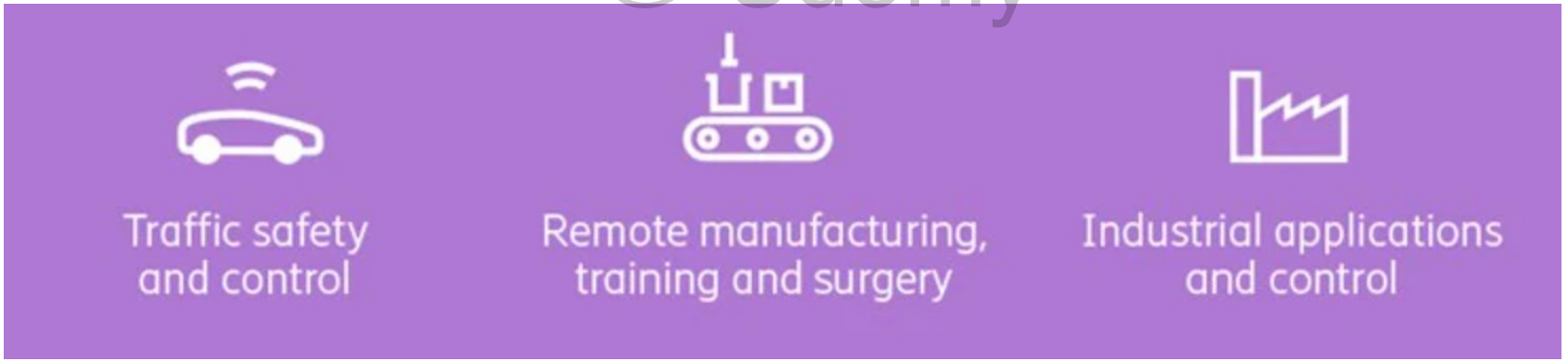


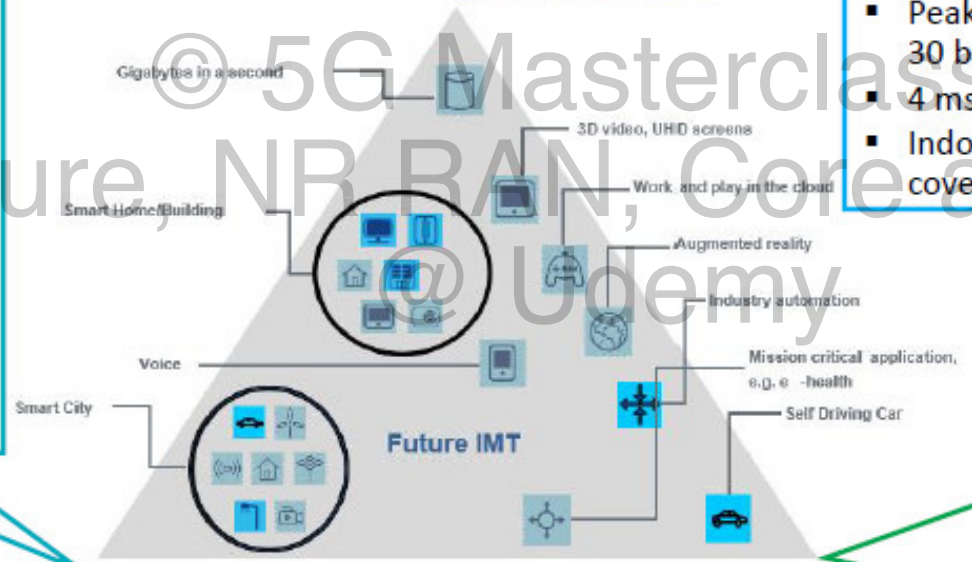
The 5G Use Cases - Summary

Enhanced Mobile Broadband (eMBB)

- Peak data rates: 20 Gbps (DL) and 10 Gbps (UL)
- Peak spectral efficiency:
  30 bps/Hz (DL) and 15 bps/Hz (UL)
- 4 ms user plane latency
- Indoor/hotspot and enhanced wide-area coverage

Massive Machine Type Communications (mMTC)

- Low data rates
  (1 to 100 kbps)
- High device density
  (up to 1,000,000 /km^2)
- Latency: Seconds to hours
- Low power: Up to 15 years battery life



Source: ITU-R SG5 WP-5D

Ultra-Reliable and Low Latency Communications (URLLC)

- Low to medium data rates
  (50 kbps to 10 Mbps)
- 0.5 ms user plane latency
- 99.999% reliability and availability within 1 ms
- High mobility

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