



Wi-Fi 6 e Wi-Fi 7: Internet com maior velocidade e eficiência



Agenda



Evolução do WiFi



**Tecnologias
Embarcadas**



Aplicações

Quem Sou?



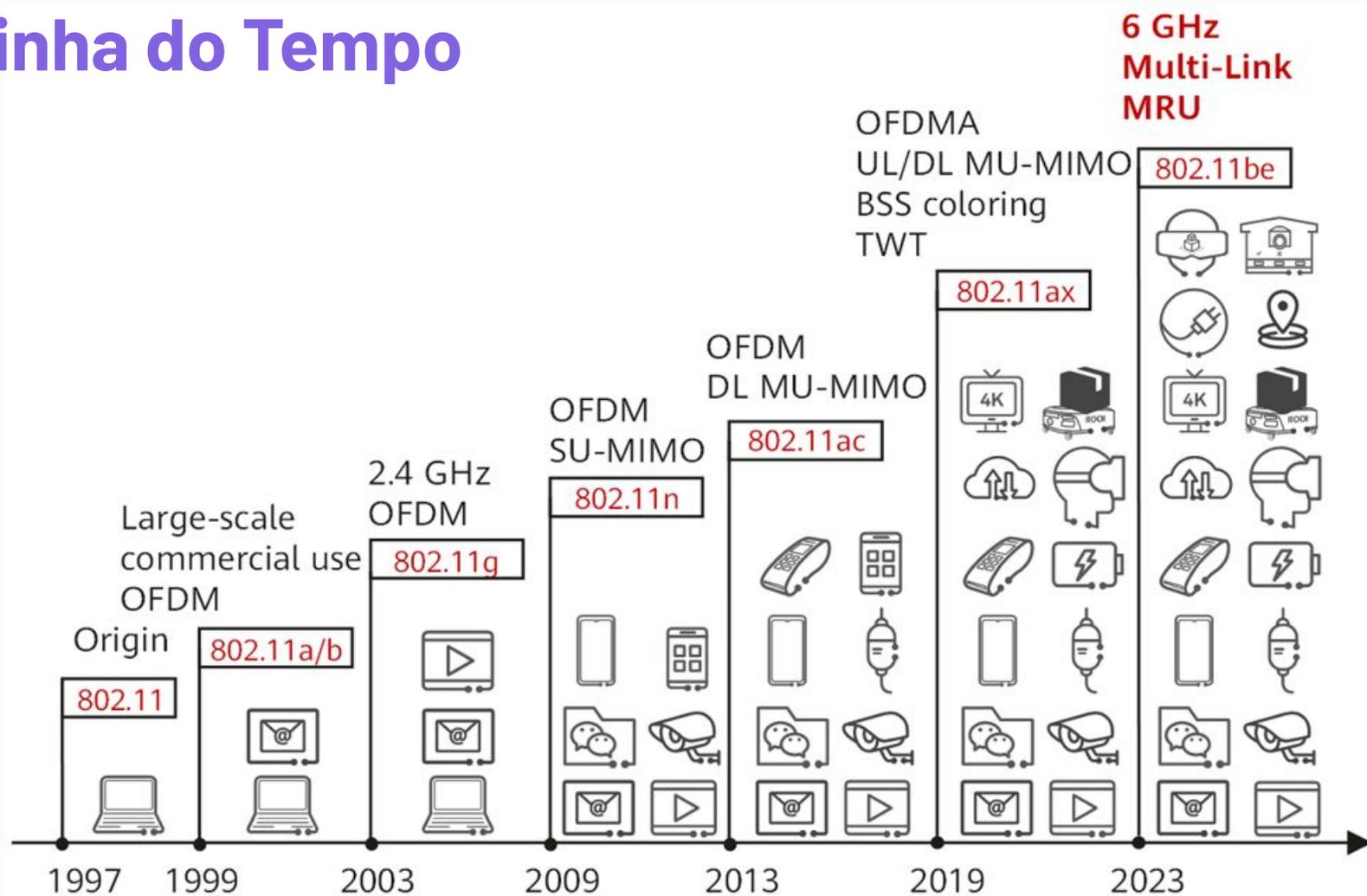
- Head de Treinamentos na FiberX Training
- Graduado em Sistemas da Informação – Unicarioca/RJ
- MBA em Serviços de Telecomunicações – UFF/RJ
- Especialização em Comunicações Móveis – UFF/RJ

- +25 anos em Telecom
- +70 Certificações Profissionais
- Sendo 22 da Huawei – Incluindo HCSI-HCIE-Datacom

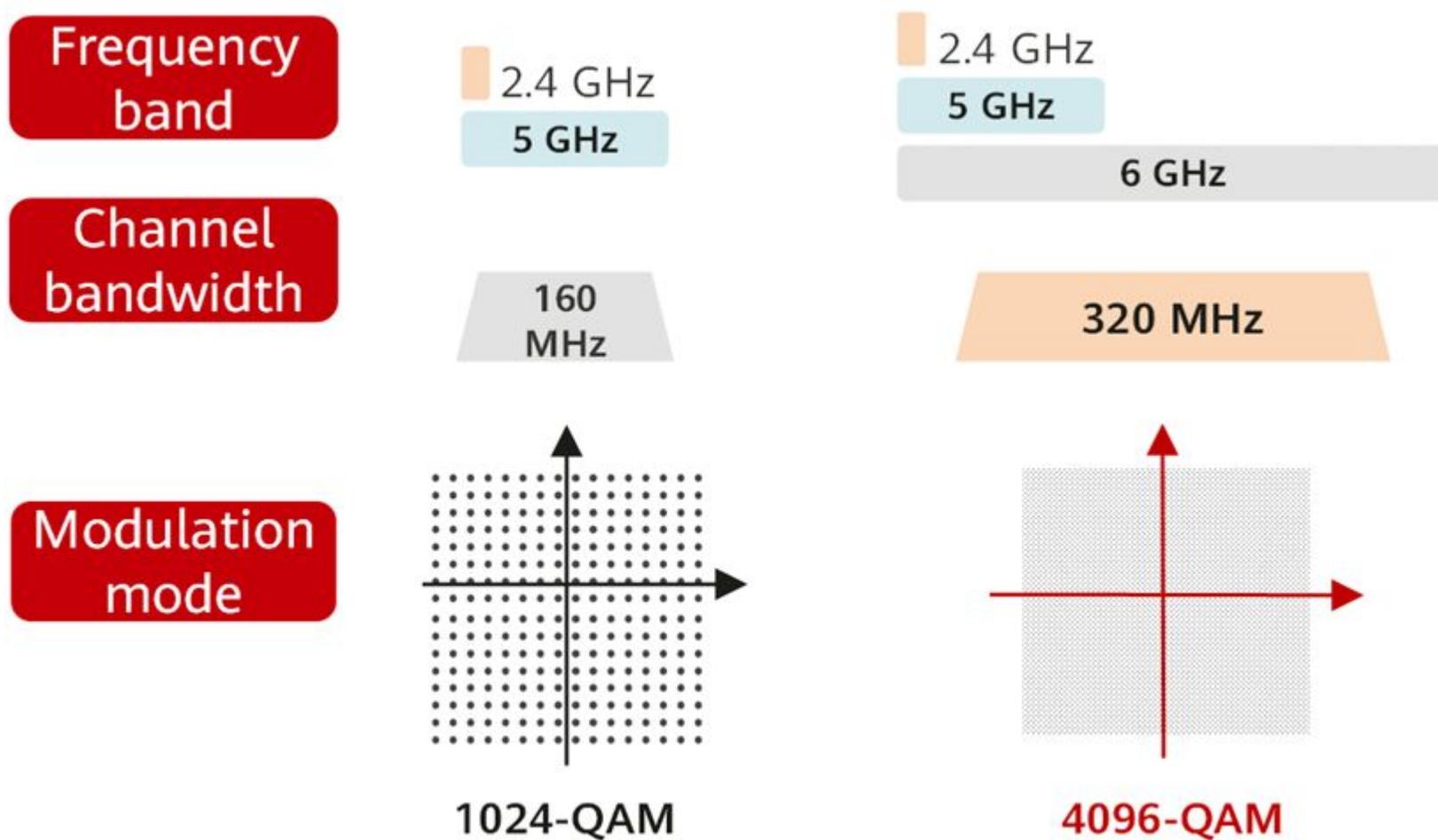
Evolução do Wi-Fi



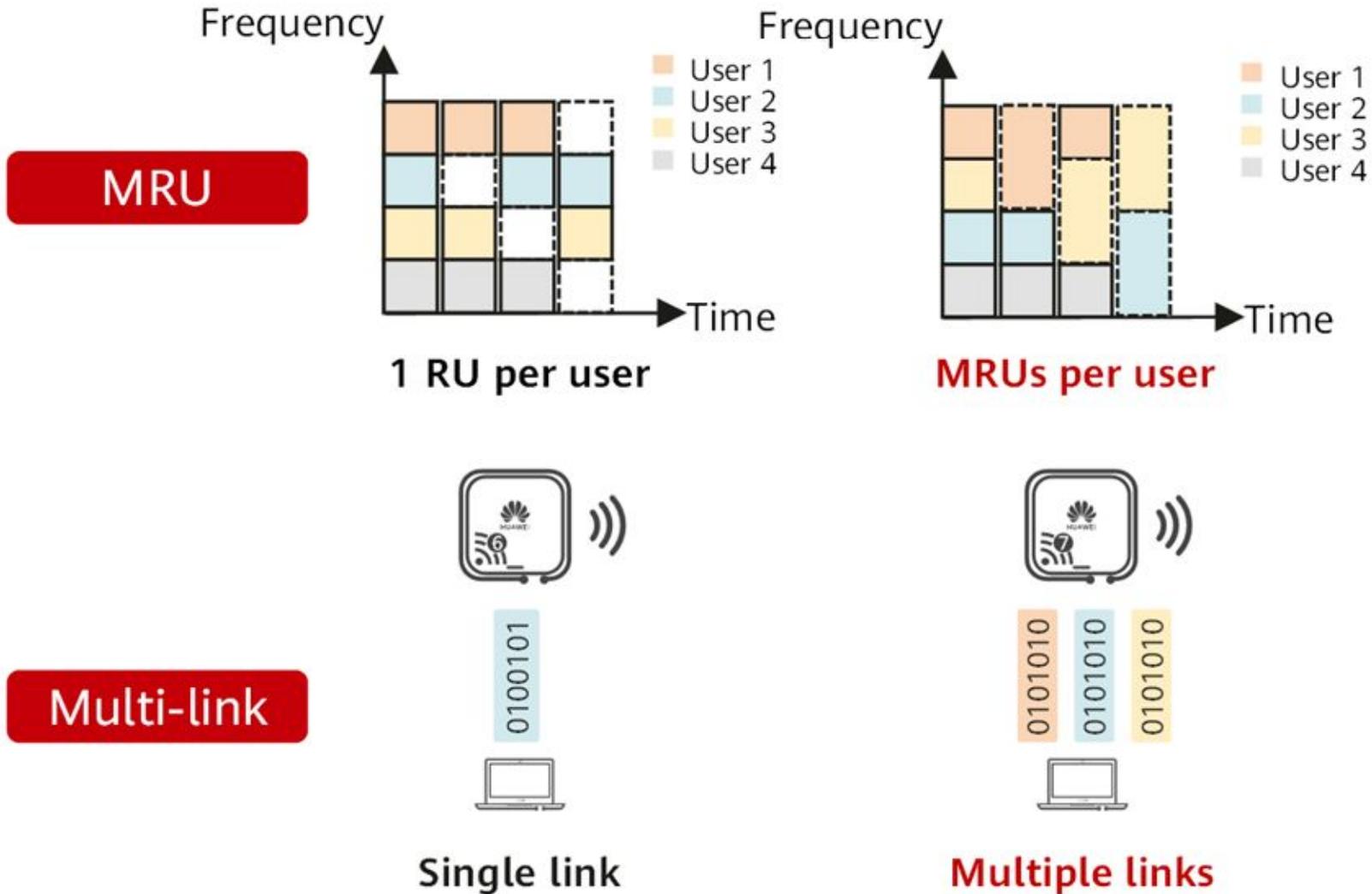
Linha do Tempo



WiFi 6 x WiFi 7



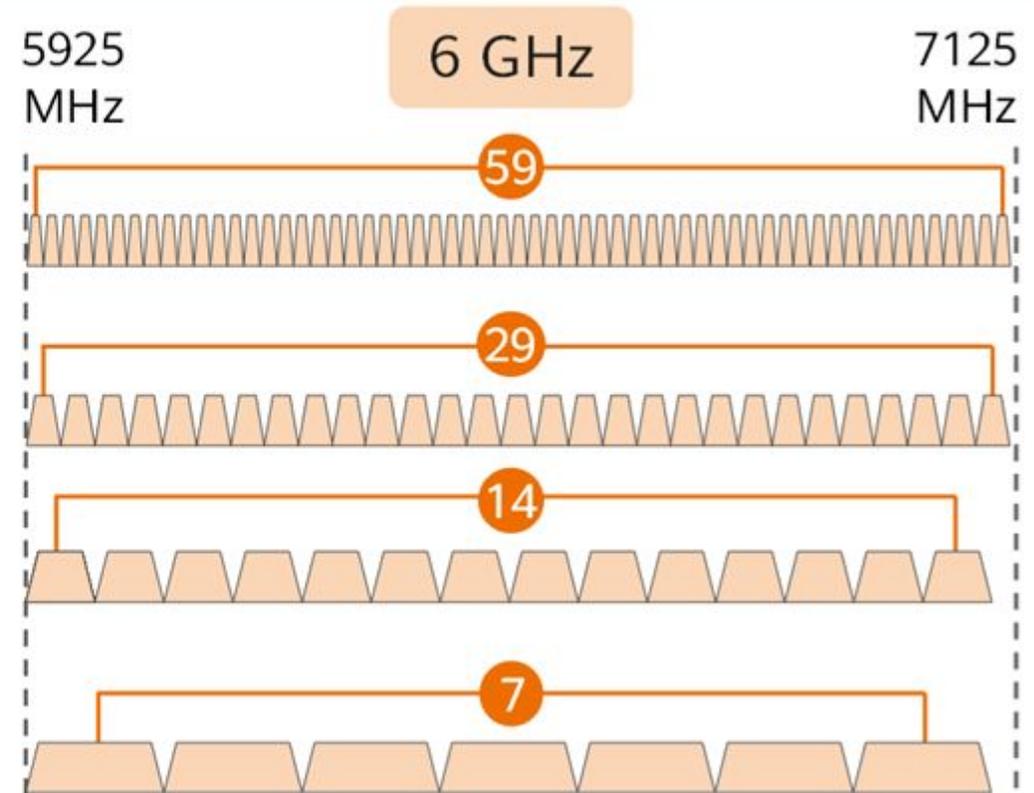
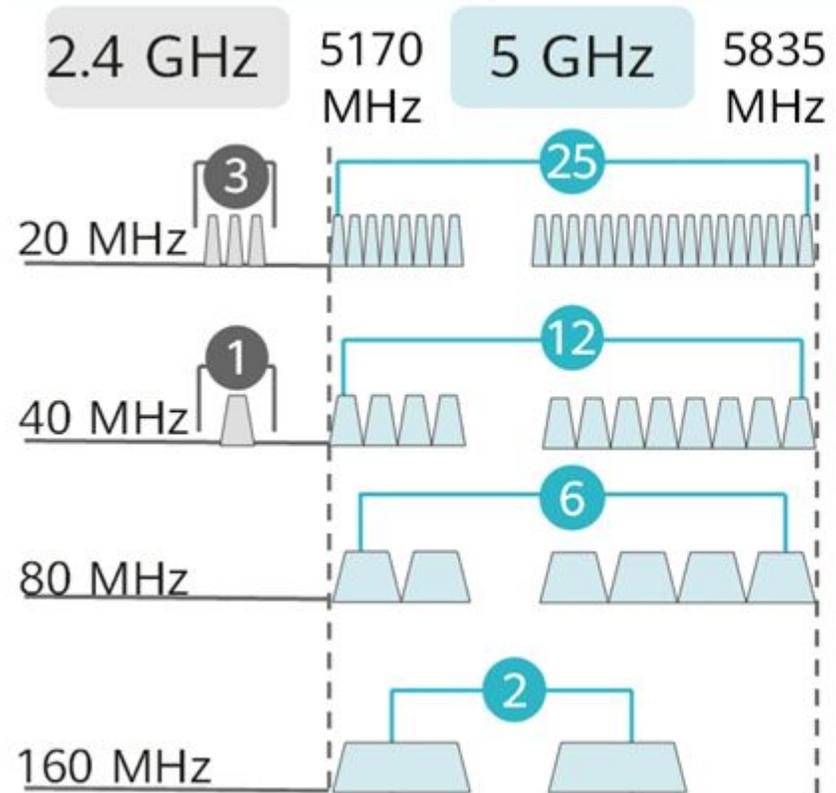
WiFi 6 x WiFi 7



Tecnologías Embarcadas



Faixa de 6 GHz

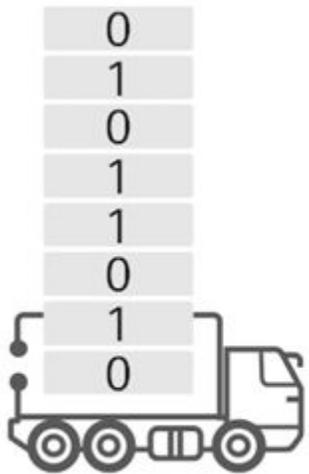


Canal de 320 MHz

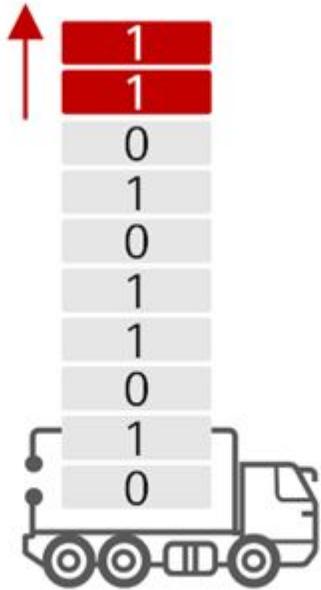
Standard Version	Supported Channel Bandwidth (MHz)
802.11n (Wi-Fi 4)	20 and 40
802.11ac (Wi-Fi 5)	20, 40, 80, 160, and 80+80
802.11ax (Wi-Fi 6)	20, 40, 80, 160, and 80+80
802.11be (Wi-Fi 7)	20, 40, 80, 160, 80+80, 160+160, and 320

$$\text{Wi-Fi speed} = \text{Number of spatial streams} \times \frac{1}{(\text{Symbol} + \text{GI})} \times \text{Modulation mode} \times \text{Coding rate} \times \text{Number of valid subcarriers}$$

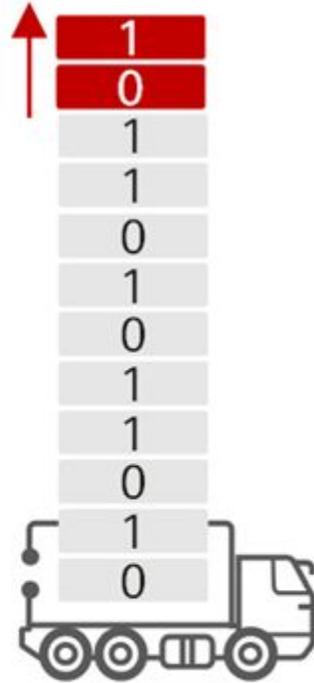
4096-QAM



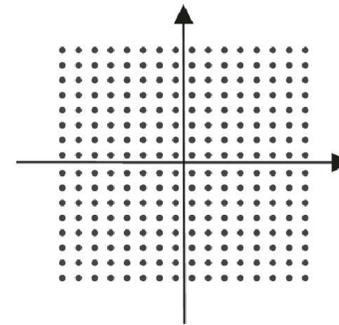
Wi-Fi 5
256-QAM
8 bits per
symbol



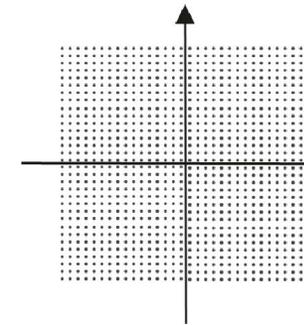
Wi-Fi 6
1024-QAM
10 bits per
symbol



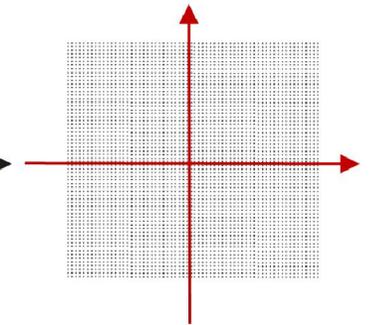
Wi-Fi 7
4096-QAM
12 bits per
symbol



Wi-Fi 5
256-QAM



Wi-Fi 6
1024-QAM



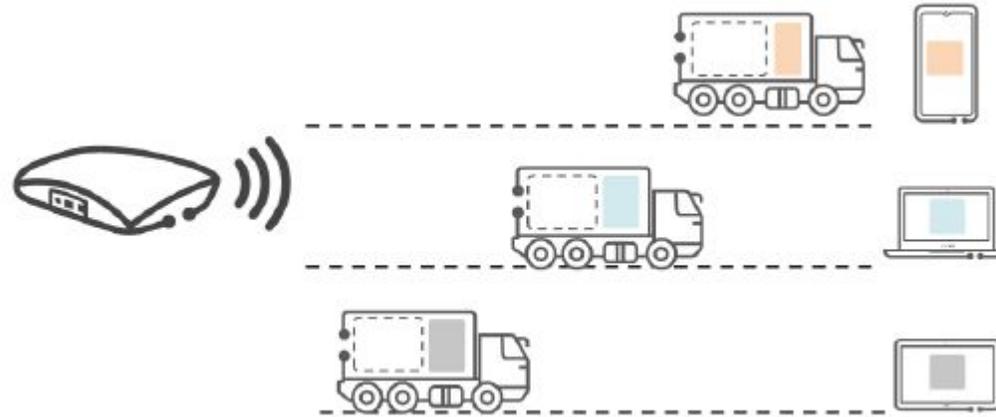
Wi-Fi 7
4096-QAM

Garante melhor performance?

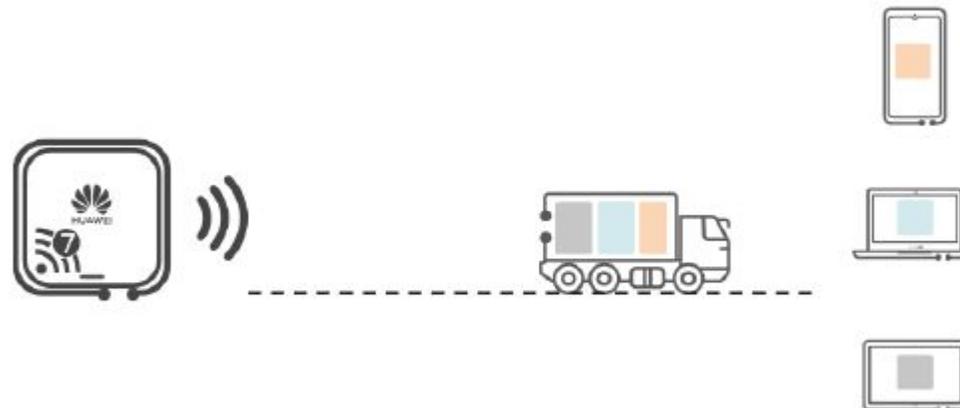
Maior a quantidade de bits por símbolo garante sozinho a melhor performance?

O que acontece com uma relação sinal-ruído ruim (SNR)?

OFDMA



OFDM
WiFi 4 / 5

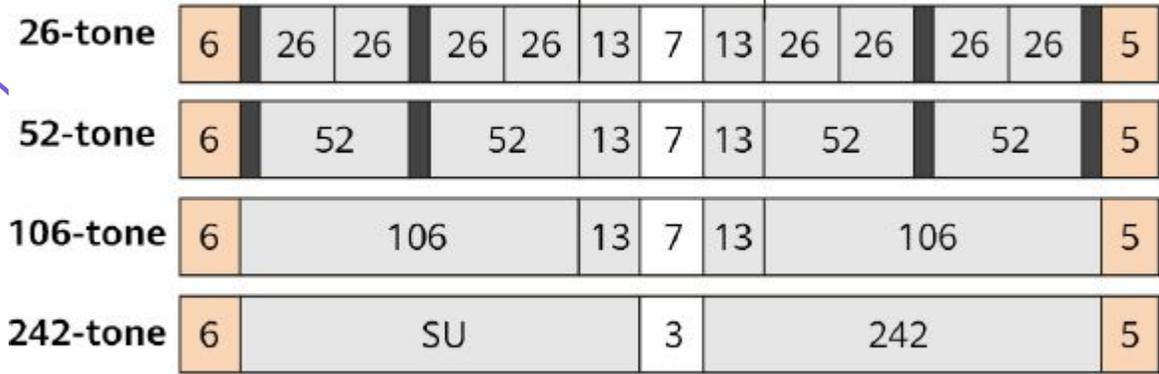


OFDMA
WiFi 6 / 7

Resource Units (RU)

Canal de 20 MHz

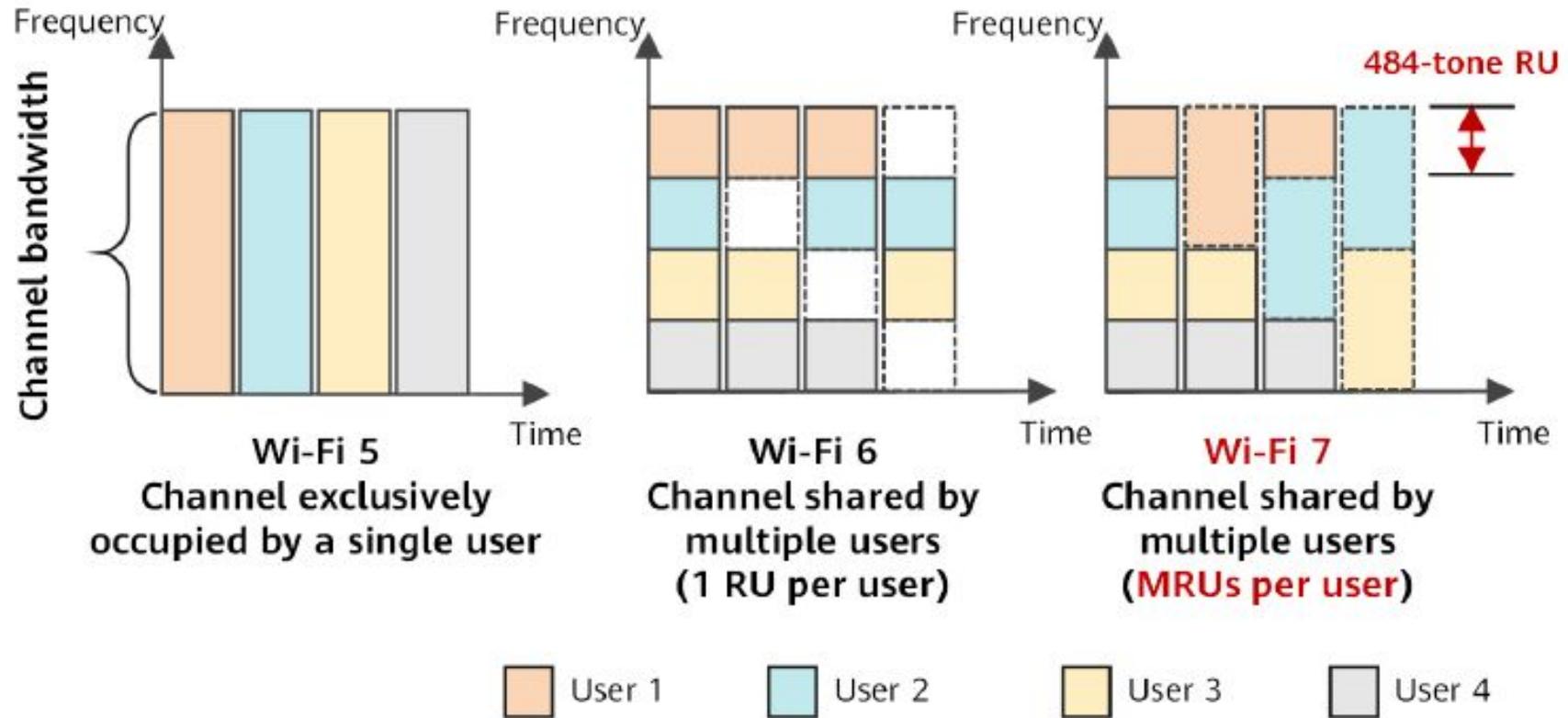
26 tones in the middle



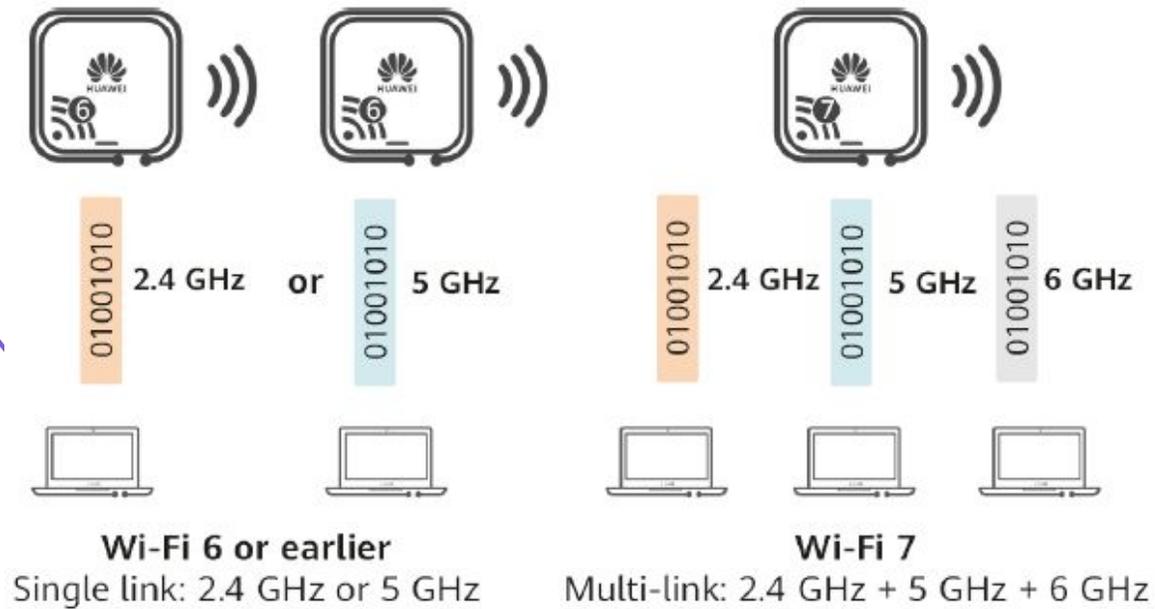
□ DC tone ■ Pilot tone □ Guard tone □ Data tone

RU Type	20 MHz	40 MHz	80 MHz	160 or 80+80 MHz	320 or 160+160 MHz
26-tone RU	9	18	37	74	148
52-tone RU	4	8	16	32	74
106-tone RU	2	4	8	16	32
242-tone RU	1	2	4	8	16
484-tone RU	-	1	2	4	8
996-tone RU	-	-	1	2	4
2x996-tone RU	-	-	-	1	2
4x996-tone RU (New in Wi-Fi 7)	-	-	-	-	1

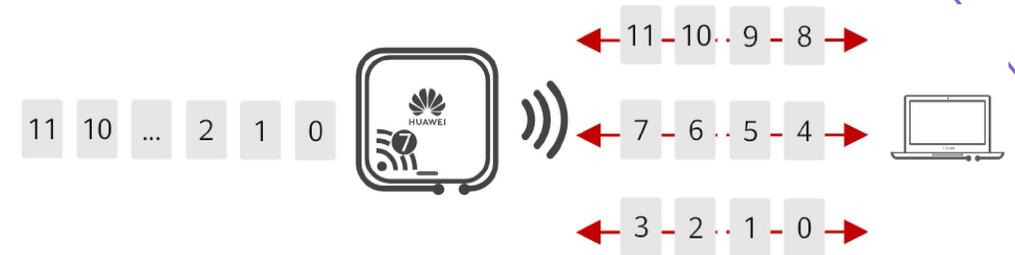
MRU



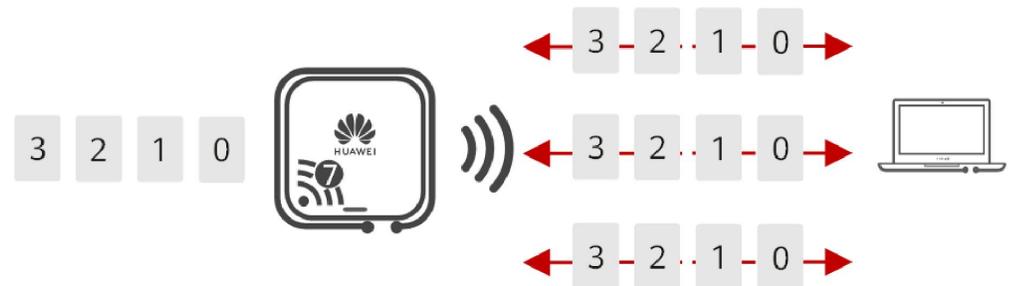
Multi-Link



LoadBalance



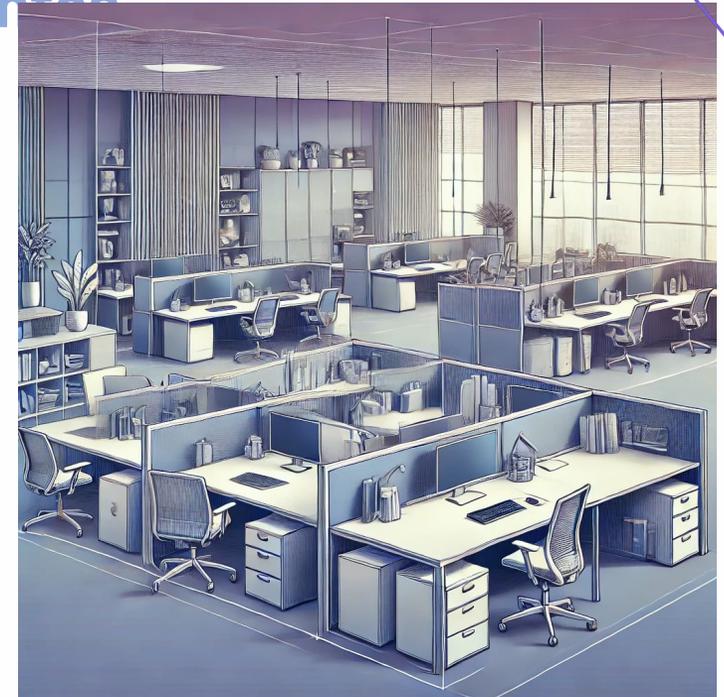
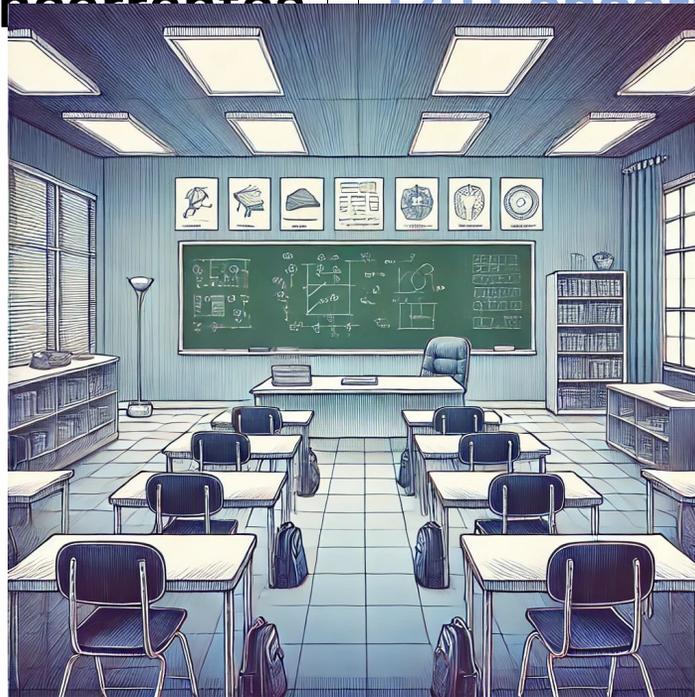
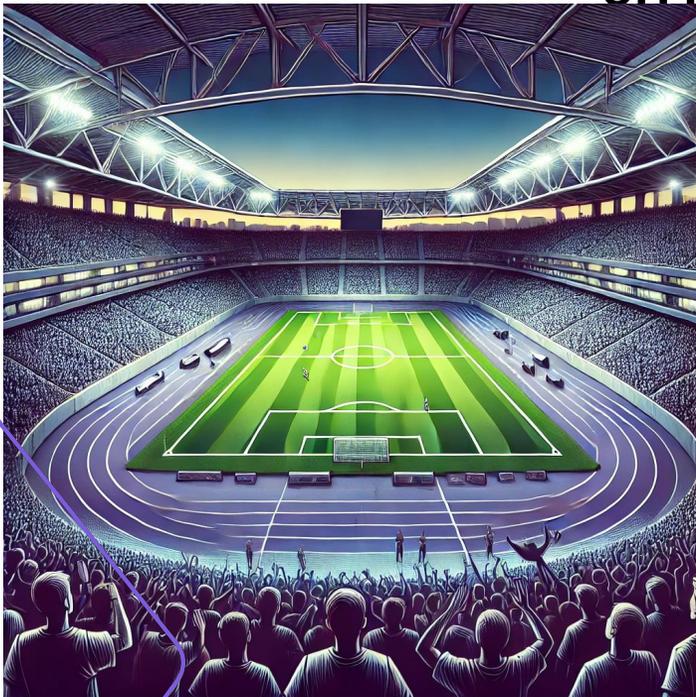
Redundância



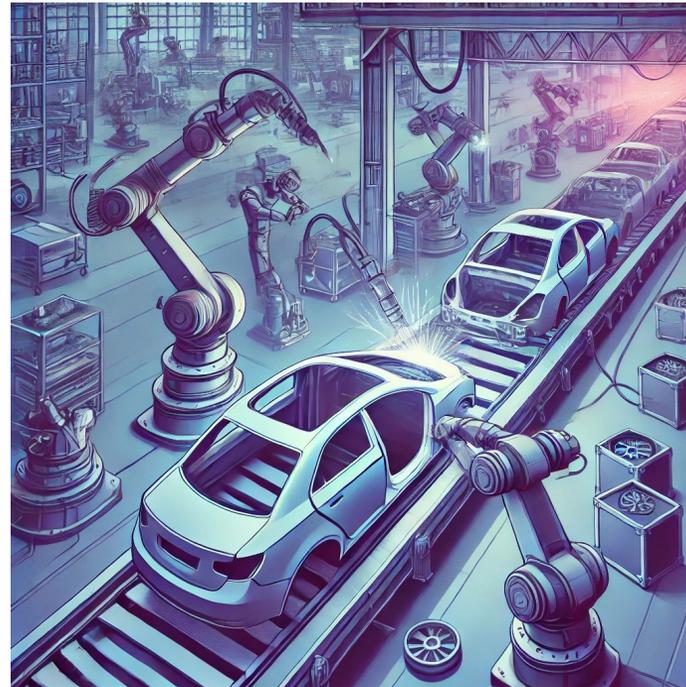
Escritórios / Educação / Local de Alta Densidade de Acessos

Redução da Interferência em Alta Densidade

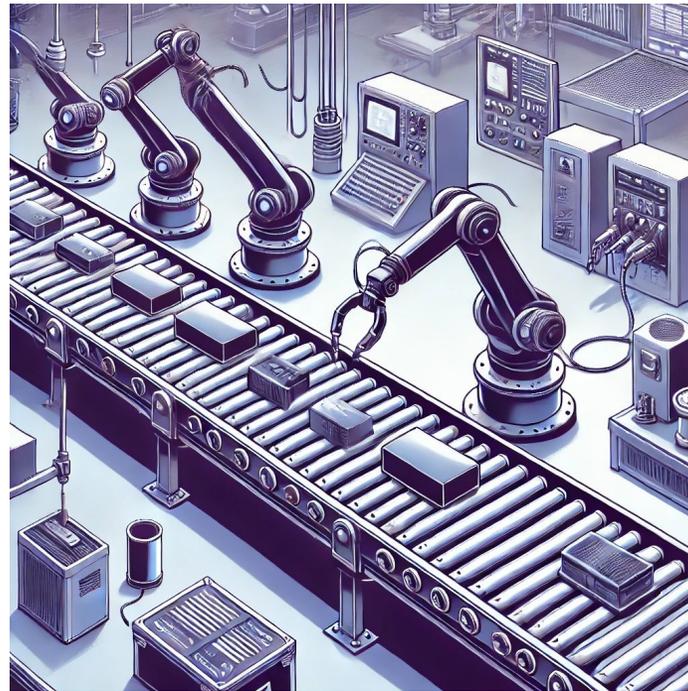
90 Concurrentes 120 Concurrentes



Inspeção de Qualidade em Fábricas Alta Largura de Banda 10Gbps □ 30Gbps



Controle em Indústria de Manufatura Baixa Latência e Alta Confiabilidade 20 ms □ 10 ms □ 5 ms



Obrigado por
sua atenção.

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