



UK SPF April 2022

6 GHz and Mid-Band Capacity

Ross Bateson

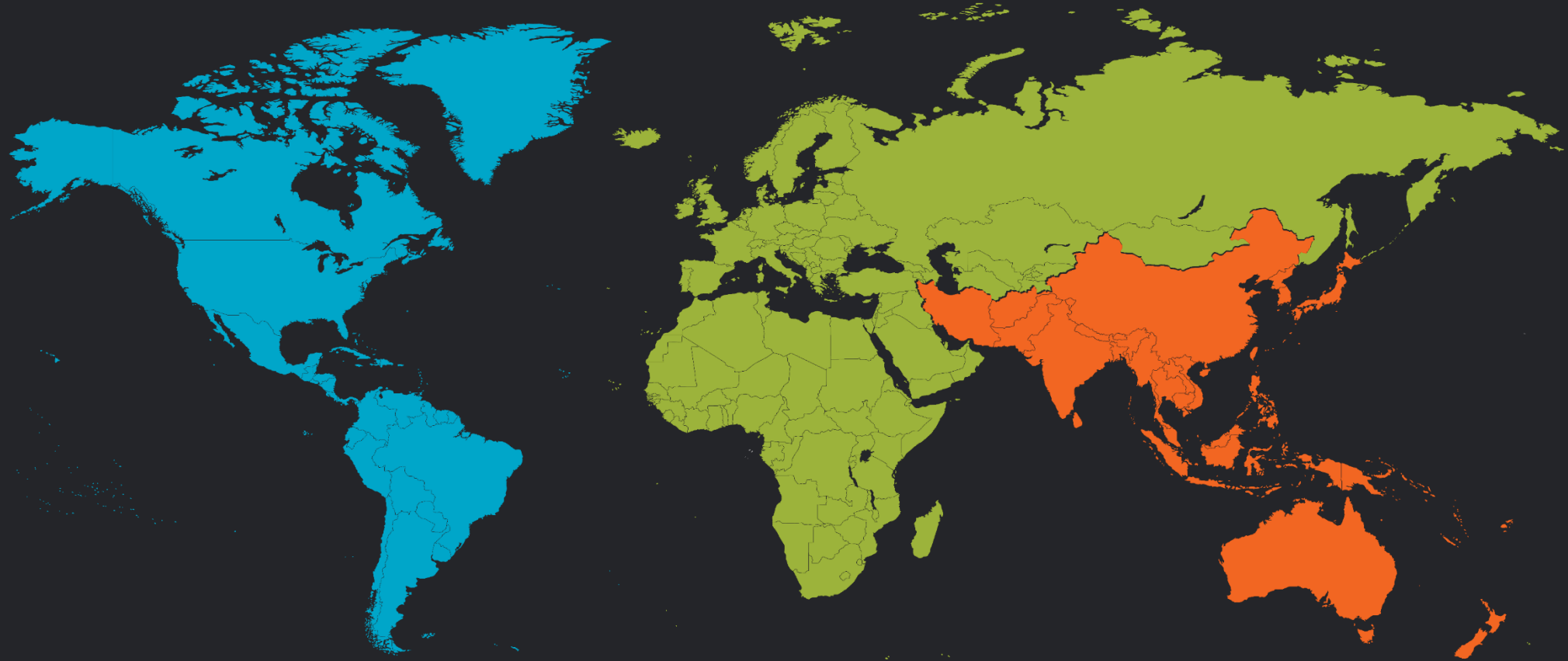
Special Adviser, Government Affairs, GSMA





WRC-23 IMT Agenda Items

● Region 1 ● Region 2 ● Region 3



Bands	470-960 MHz	3300-3400MHz	3600-3800MHz	4800-4990 MHz	6425-7025 MHz	7025-7125 MHz	10-10.5 GHz	IMT FS
● Region 1	AI 1.5 (IMT)	AI 1.2 (IMT)	AI 1.3 (MS)	AI 1.1 (IMT)	AI 1.2 (IMT)	AI 1.2 (IMT)		9.1.c
● Region 2		AI 1.2 (IMT)	AI 1.2 (IMT)	AI 1.1 (IMT)		AI 1.2 (IMT)	AI 1.2 (IMT)	9.1.c
● Region 3				AI 1.1 (IMT)		AI 1.2 (IMT)		9.1.c



Economic Impact of Mid-Band

Growth Depends on Spectrum

5G total benefits, 2030, with sufficient spectrum or constrained to today's levels

Optimal Scenario

\$961bn

0.68% of GDP

Constrained Scenario

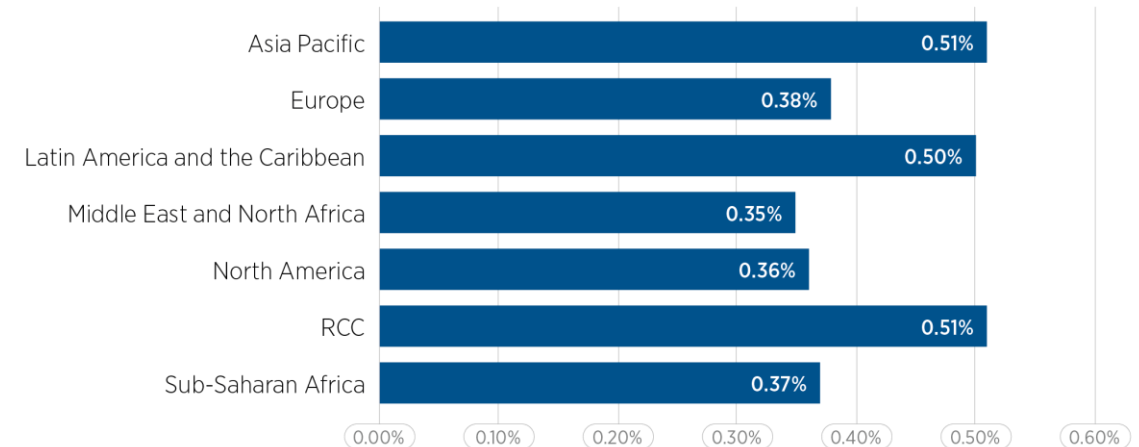
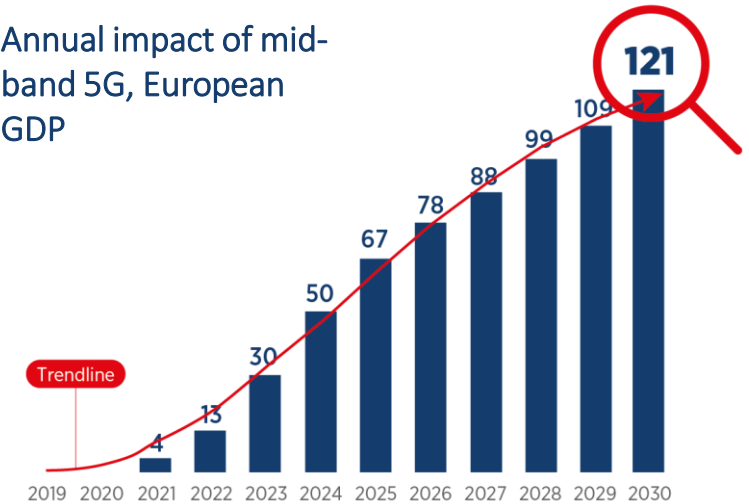
\$594bn

0.42% of GDP



Regional
breakdown
of GDP
contribution
(%) of mid-
band 5G in
2030

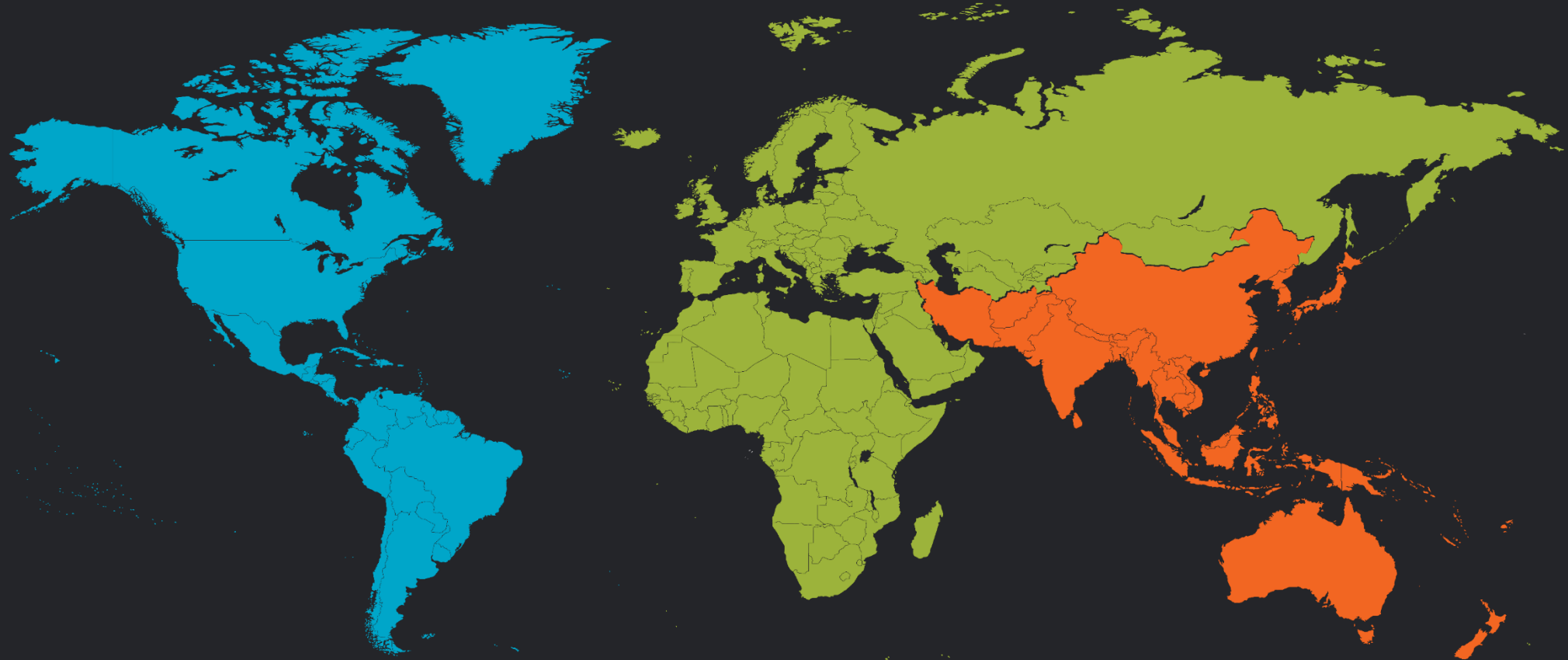
Annual impact of mid-band 5G, European GDP





Where Will the Spectrum Come From?

● Region 1 ● Region 2 ● Region 3

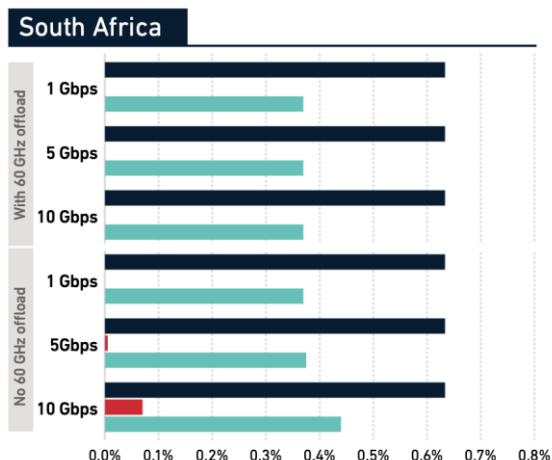
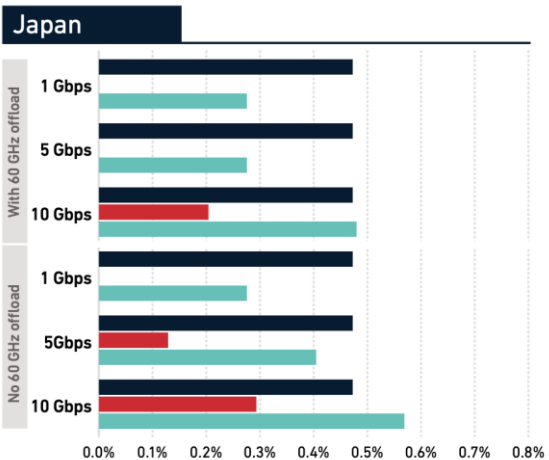
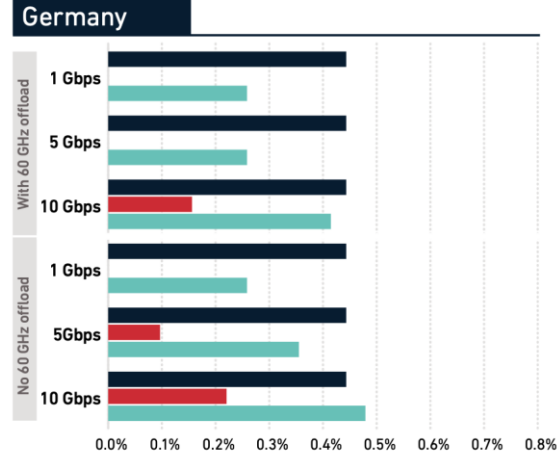
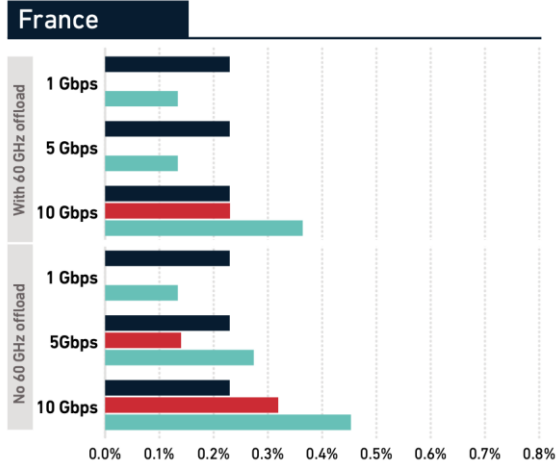


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Cost Benefit Analysis 6 GHz

5G vs Licence Exempt



- GSMA Intelligence carried out a cost-benefit analysis of three scenarios in a global group of markets for three given FTTP speeds (1, 5 and 10 Gbps), with and without 60 GHz Wi-Fi.
- Scenario 1 (all 6 GHz band assigned to licensed use)
- Scenario 2 (all 6 GHz band given to Wi-Fi / licence exempt)
- Scenario 3 (700 MHz assigned to licensed use; 500 MHz assigned to unlicensed used)
- Scenario 2 (all 6 GHz band assigned to unlicensed use) was not found to be the most beneficial allocation in any of market in the world for any fibre speed scenario.

Source: [The socioeconomic benefits of the 6 GHz band \(gsmainelligence.com\)](https://www.gsmainelligence.com)

■ Scenario 1: all to licensed ■ Scenario 2: all to unlicensed ■ Scenario 3: 700 MHz licensed; 500 MHz unlicensed



Shared Access

Where is the Success Story?

Enabling spectrum sharing in the upper 6 GHz band

Shared licences for local, low-power indoor use of the
upper 6 GHz band (6425-7070 MHz)





6 GHz | 5G Opportunity ...

...or long clean up operation?

5G Need

- UK is alone in high income world in believing it has assigned enough mid-band
- Densification plans require up to 50,000 small cells
- Increasing speed through this capex is not affordable or technically possible
- Shared and local licensing mechanisms have had tepid success in UK

5G Support

- Major fibre providers support 6 GHz 5G:
 - BT, Telefonica / Virgin, Vodafone etc
- Significant scale in ecosystem already guaranteed

History Lesson

- First mover advantage for Wi-Fi 6E no longer significant
- 500 MHz additional spectrum will produce most economic value at 10 Gbps FTTP
- Learn from history: don't create a new WiMAX



Cost of Living

Can we Afford to Make Next 5G Layer the Most Expensive?

2022 ARPU

United States of America	\$ 45.35
Saudi Arabia	\$ 29.02
Korea; South	\$ 26.73
<hr/>	
United Kingdom	\$ 18.76

