

5G for Production

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Make stuff



Move stuff around

send stuff out



Why?

In the beginning, it was analogue.

5G RECORDS

And then we went digital.....

5G RECORDS

And now we have IP

And it's not just us

5G RECORDS

And it's not just us

1G	2G	3G	4G	5G
1980s	1990s	2000s	2010s	2020s
Analog Voice Human-to-Human Early Mobile Phones	Digital Voice Low-Speed Data Voice and Some Text	Mobile Broadband High-Speed Data Internet Access	Faster/Better 3G IP-Based Network High-Speed Internet, Streaming, Apps	Interconnected Devices, Sensors, and Systems For Consumers, Governments, and Business

3GPP Standardization (spanning 3G, 4G, and 5G)

5G RECORDS




Why?

	<1GHz	3GHz	4GHz	5GHz	6GHz	24-30GHz	37-50GHz	64-71GHz	>95GHz
	600MHz (2x35MHz) (2x3MHz) (B41/n41)	900MHz 2.5/2.6GHz (B41/n41)	3.1-3.45GHz 3.45-3.55GHz 3.55-3.7GHz	3.7-3.98GHz 4.99GHz	4.94-5.9-7.1GHz	24.25-24.45GHz 24.75-25.25GHz 27.5-28.35GHz	37-37.6GHz 37.6-40GHz 47.2-48.2GHz	57-64GHz 64-71GHz	>95GHz
	600MHz (2x35MHz)		3.475-3.65 GHz 3.65-4.0GHz			26.5-27.5GHz 27.5-28.35GHz	37-37.6GHz 37.6-40GHz	57-64GHz 64-71GHz	
	700MHz (2x30 MHz)		3.4-3.8GHz		5.9-6.4GHz	24.5-27.5GHz		57-66GHz	
	700MHz (2x30 MHz)		3.4-3.8GHz			26GHz		57-66GHz	
	700MHz (2x30 MHz)		3.4-3.8GHz			26GHz		57-66GHz	
	700MHz (2x30 MHz)		3.46-3.8GHz			26GHz		57-66GHz	
	700MHz (2x30 MHz)		3.6-3.8GHz			26.5-27.5GHz		57-66GHz	
	700MHz	2.5/2.6GHz (B41/n41)	3.3-3.6GHz		4.8-5GHz	24.75-27.5GHz		40.5-43.5GHz	
	700/800MHz	2.3-2.39GHz	3.4-3.42GHz 3.42-3.7GHz 3.7-4.0GHz		5.9-7.1GHz	25.7-26.5GHz 26.5-28.9GHz 28.9-29.5GHz	37GHz	57-66GHz	
			3.6-4.1GHz	4.5-4.9GHz		26.6-27GHz 27-29.5GHz	39-43.5GHz	57-66GHz	
	700MHz		3.3-3.6GHz			24.25-27.5GHz 27.5-29.5GHz	37-43.5GHz		
			3.4-3.7GHz			24.25-29.5GHz	39GHz	57-66GHz	

Global snapshot of allocated/targeted 5G spectrum

5G is being designed for diverse spectrum types/bands

New 5G band

-  Licensed
-  Unlicensed / shared
-  Existing band

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Standards and regulation



Partnerships

Tests and Trials



Activity Map

IBC Accelerators
Industry engagement
Tests and Trails

5G Records
EBU 5GCP
5G MAG
Academic engagement
UK5G Creative industries WG
(DCMS)

3GPP (standards)
Ofcom

One Year

Three Year

Five Year

Industry Influencing and Governance



Industry Influencing and Governance

- 3GPP → ETSI → ITU (standards)
- 5G MAG (MRP), GSMA
- Engagement with telecoms industry
- Ofcom (Spectrum)
- Getting the landscape right

Production

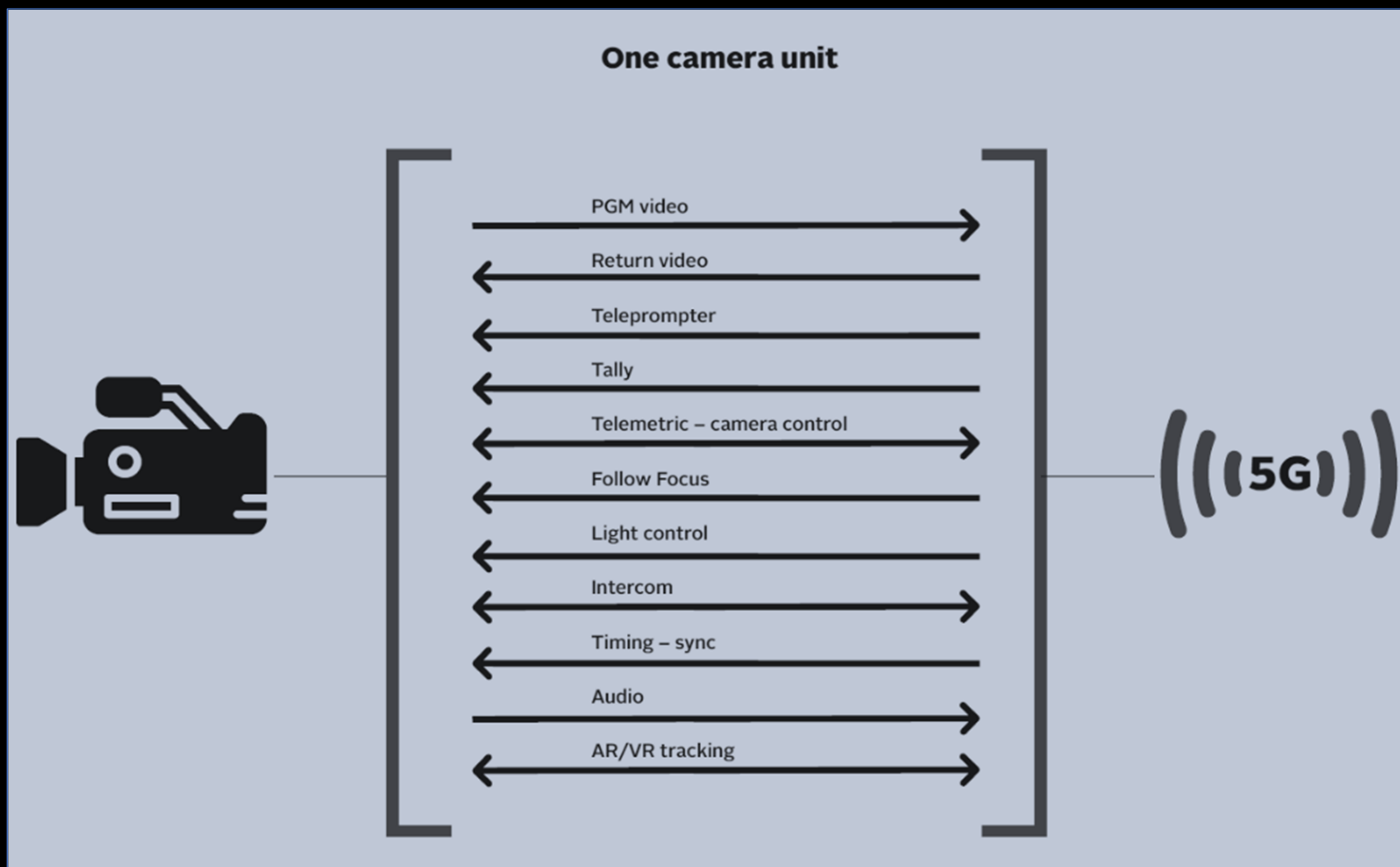


Production

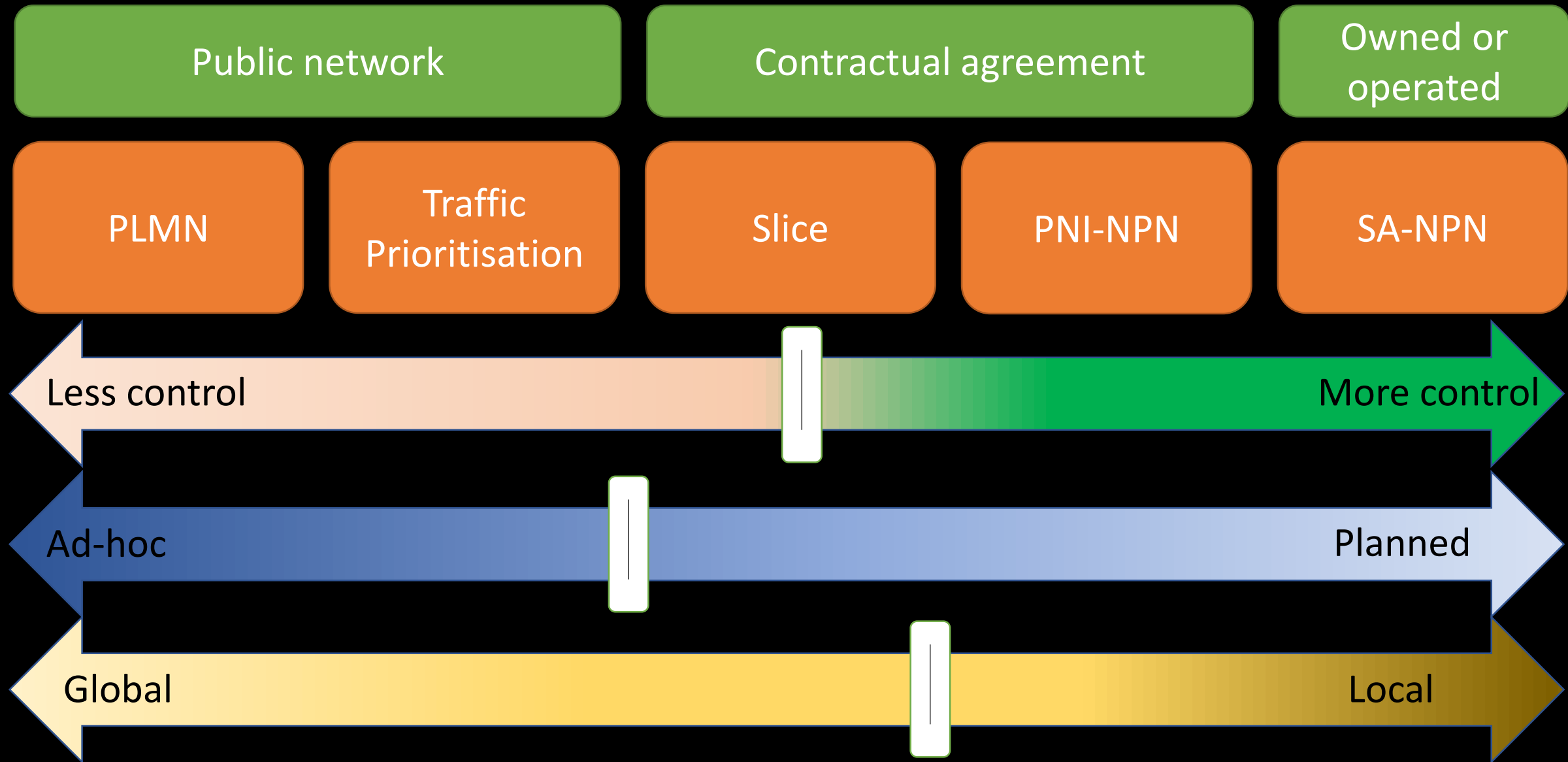
- Throughput
- latency
- Timing
- Reliability
- Ad-hoc and nomadic
- Rural and remote support
- Types of network important



More efficient



It won't be one size fits all



Production Tests and Trials



Production Tests and Trials

- Non-public networks
- Codecs and transport
- Audio
- Timing
- Public networks
- Spectrum sharing

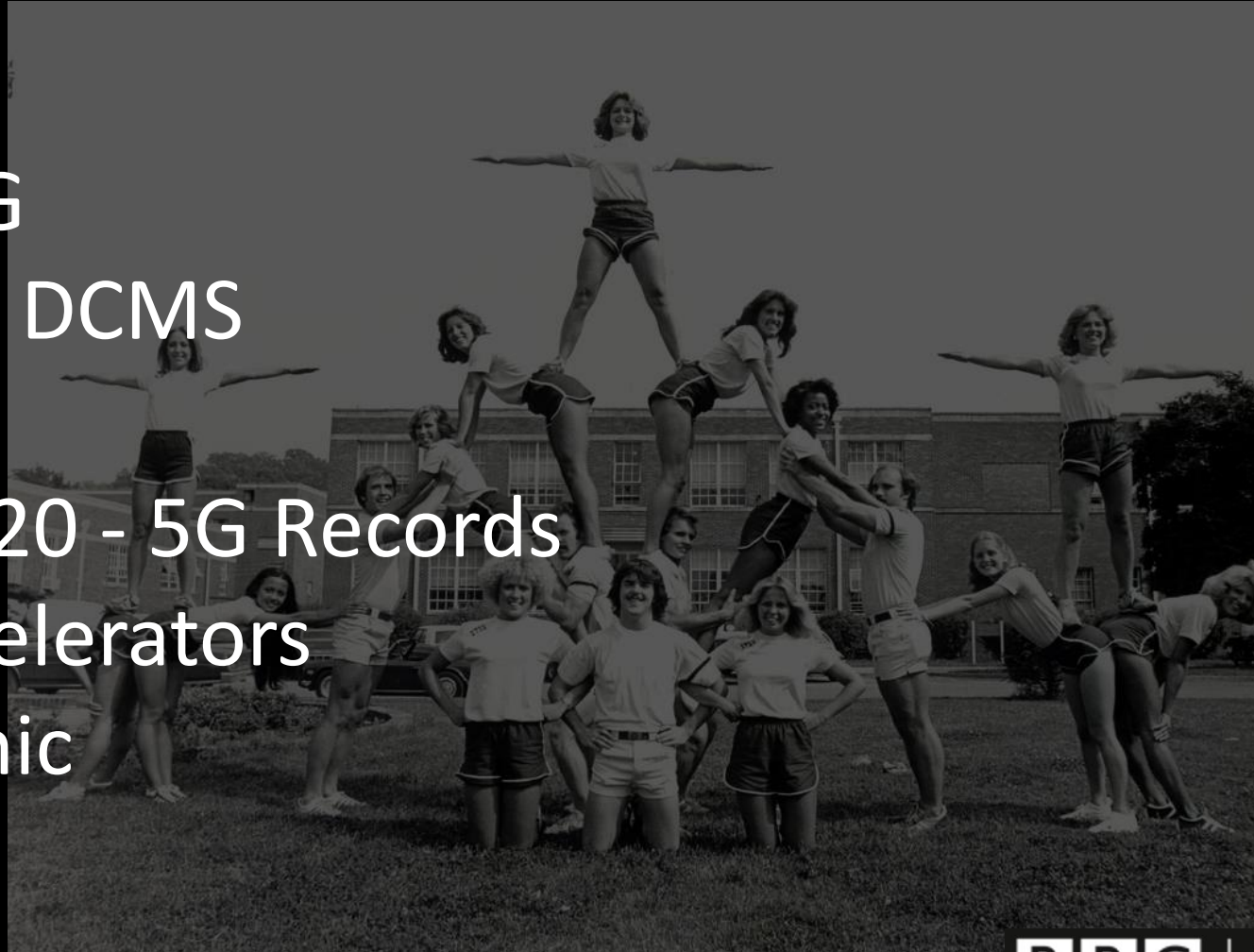


Projects and partnerships



Projects and Partnerships

- EBU
- 5G MAG
- UK 5G / DCMS
- DTG
- EU H2020 - 5G Records
- IBC Accelerators
- Academic



Joining it all up

