

The Importance of IPv6 for 5G

Prof Mischa Dohler

Fellow of the IEEE, Royal Academy of Engineering & Royal Society of Arts Director, Centre for Telecom Research Chair Professor, King's College London Cofounder, Worldsensing

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Overall Vision: Internet of Skills



Yesterday's

Innovation & Standards:

IP network technologies, audio and video codecs

Proprietary Circuit-Switched Audio & Video Technologies



Standardized Packet-Switched Internet, enabling Economy of Scale



Today's

Innovation & Standards:

low-latency IP networks, intelligence, tactile codecs



Proprietary (and expensive) Haptic-Edge Technologies

Standardized Internet of Skills, enabling Service Economy of Scale

Fundamental Shift



What is 5G: KPIs



What is 5G: Technology



Challenge #1: Delay



Challenge #2: Bandwidth

Cooper's Law

Wireless capacity increase over past decades: x1,000,000



Challenge #3: Architecture

- [from ETSI NGN "Next Generation Protocols – Market Drivers and Key Scenarios", 2016]
- Throughput in Mbps for delay in ms/us versus packet loss rate (PLR)
- Upper table: cut-off line for Quasi 8K UHD at 75Mbps
- Lower table: cut-off line for Ultra VR at 1.1Gbps

PLR/latency(ms)	1.8	4	5.7	12.7	<mark>18</mark>	40	57
0.00001	2387.42785	1074.34253	753.92458	33 8 .3756	238.7428	107.4343	79.5925
0.00002	1688.16642	759.674889	533.10519	239.2677	168.8166	75.9675	53.31052
0.0001	754.970974	339.736938	238.41189	107.0038	75.4971	33.97369	23.84119
0.0002	533.845096	240.230293	168.58266	75.6631	53.38451	24.02303	16.85827
0.001	238.742785	107.434253	75.39246	33.83756	23.87428	10.74343	7.539246
0.002	168.816642	75.96749	53.310519	23.92677	16.88166	7.596749	5.331052
0.01	75,4971	33.9736938	23.841189	10.70038	7.54971	3.397369	2.384119

0 0 0

PLR/latency(us)	11	25	36	8 0	114	255	360		
0.00001	390670.011	171894.805	119371.39	53717.13	37696.23	16852.43	1937.1		
0.00002	276245.414	121547.982	84408.321	37983.74	26655.26	11916.5	8440.8 32		
0.0001	123540.705	54357.9102	37748.549	16986.85	11920.6	5329.207	3774.855		
0.0002	87356.4702	38436.8469	26692.255	12011.5	8429.133	3768.318	2669.225		
0.001	39067.0011	17189.4805	11937.14	5371.713	3769.623	1685.243	1193.714		
0.002	27624.5414	12154.8	8440.8321	3798.374	2665.526	1191.647	844.08 32		
0.01	2554.07	5435.79102	3774.8549	1698.685	1192.059	532.9207	377.4855		

Limits of TCP/IP?





With roots in the telecoms industry, Room One is a design and technology lab focused on immersive technologies. From unique content to building platforms for future 5G services, we are designing the future of communication.

King's 5G Testbed



Transforming Industries

VISUAL PERFORMANCE SYSTEMS PROJECTED SETTING VIRTUAL ACTOR **VIRTUAL ACTOR** LIVE ACTOR LIVE ACTOR EXTERIOR SETTING OUTDOOR CAMERA LIVE STAGE LIVE STAGE AUGMENTED REALITY GLASSES **3D STUDIO** TUDIO

Disrupting Performing Arts

Disrupting Health & Care

The Internet of Skills will be an enabler for remote skillset delivery and thereby democratize labour globally the same way as the Internet has democratised knowledge.