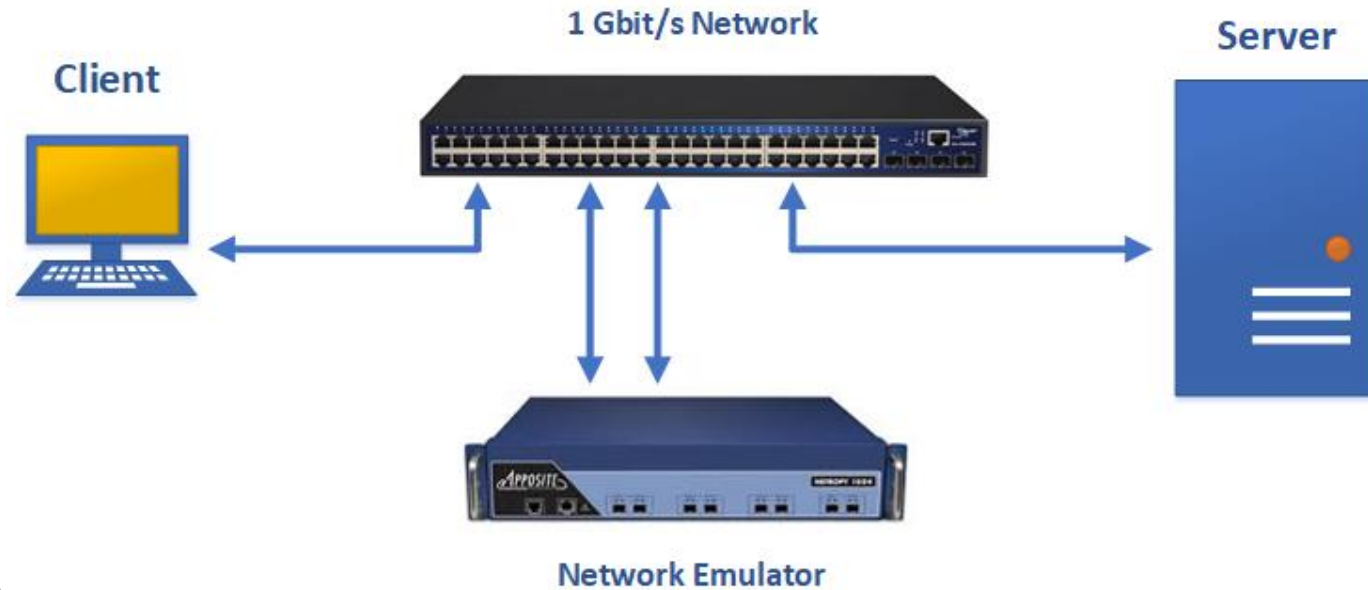


1 Gbit/s Latency Throughput Benchmark

TCP|TLS|http ./. HTTP-SS 5G

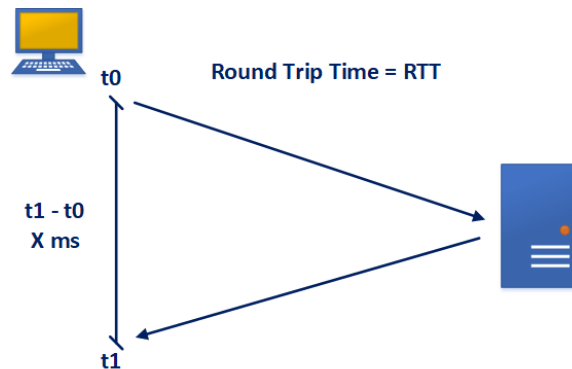
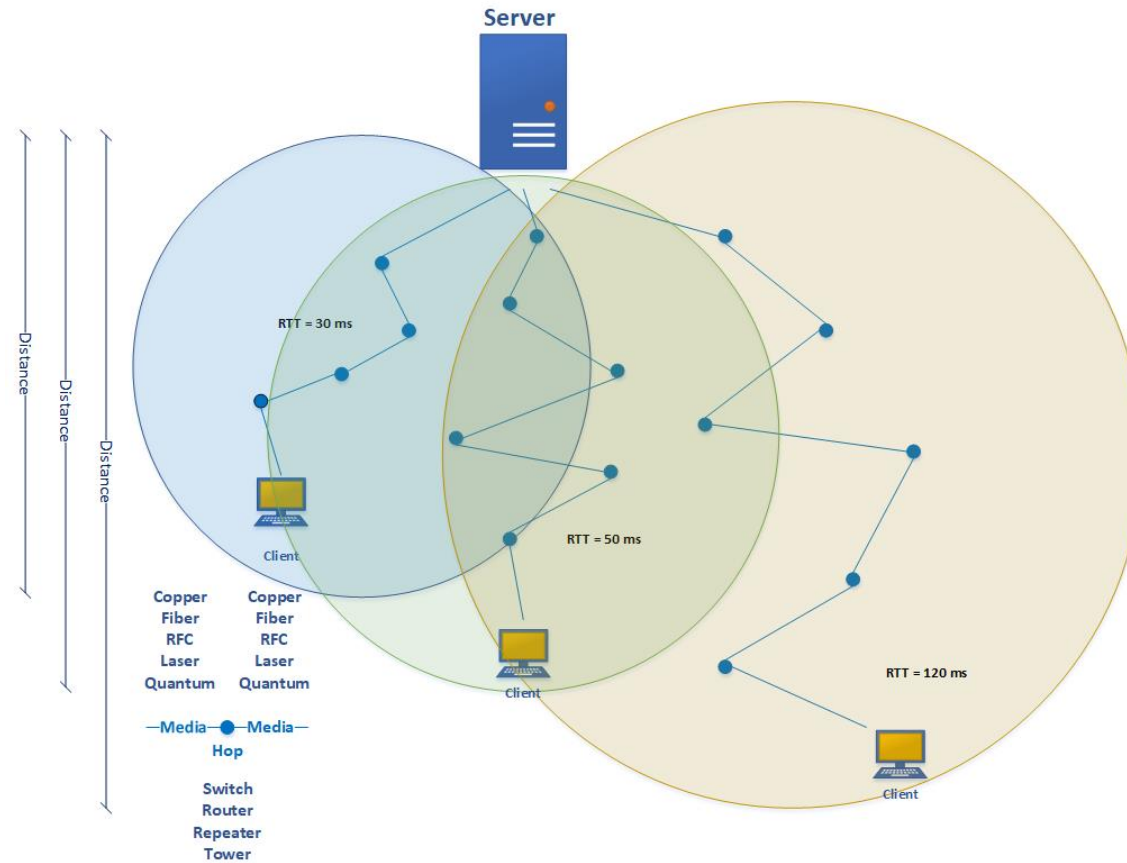


Very Accurate Network Emulator



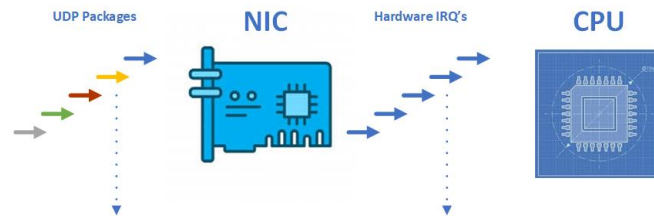
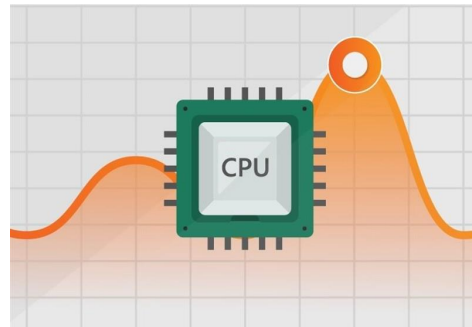
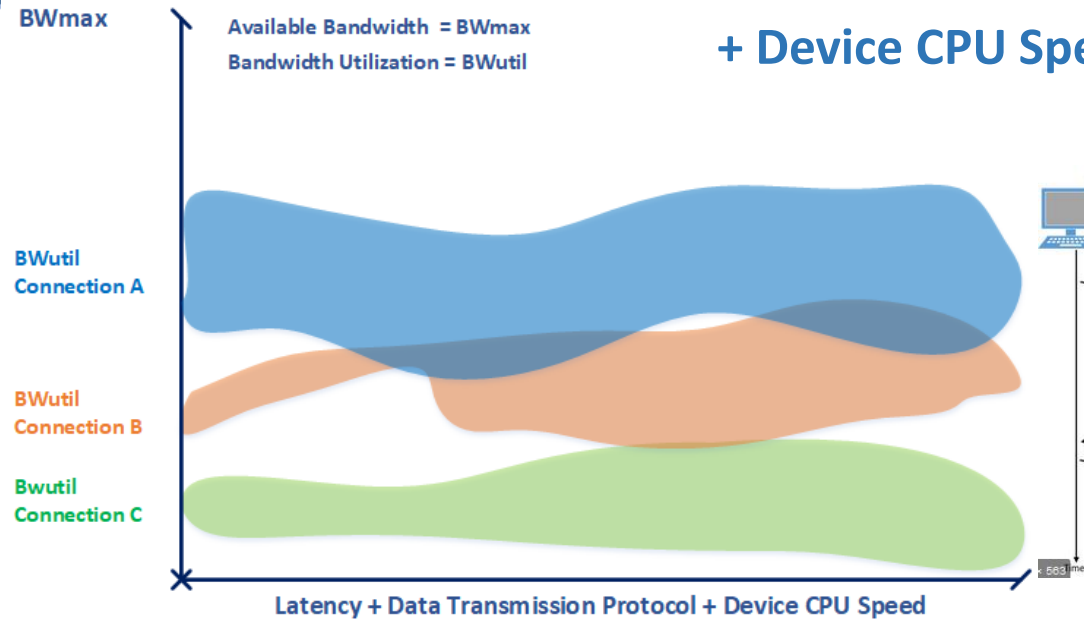
Used for
Following Test Results

$$\text{Latency} = f \Sigma \text{Hops} + \text{Media} + \text{Distance}$$

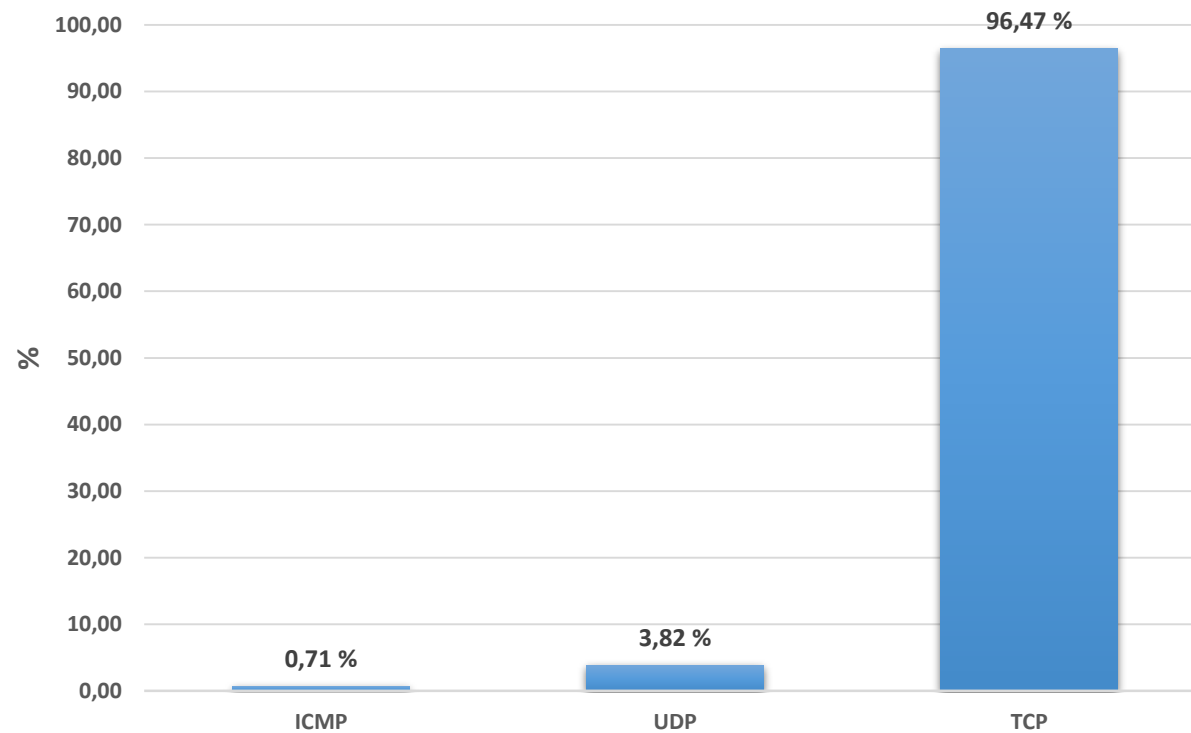


$$\text{Bandwidth Utilization} = f \text{ Latency}$$

+ Data Transmission Protocol
+ Device CPU Speed



Proportion of incoming and outgoing Protocols in normal Traffic

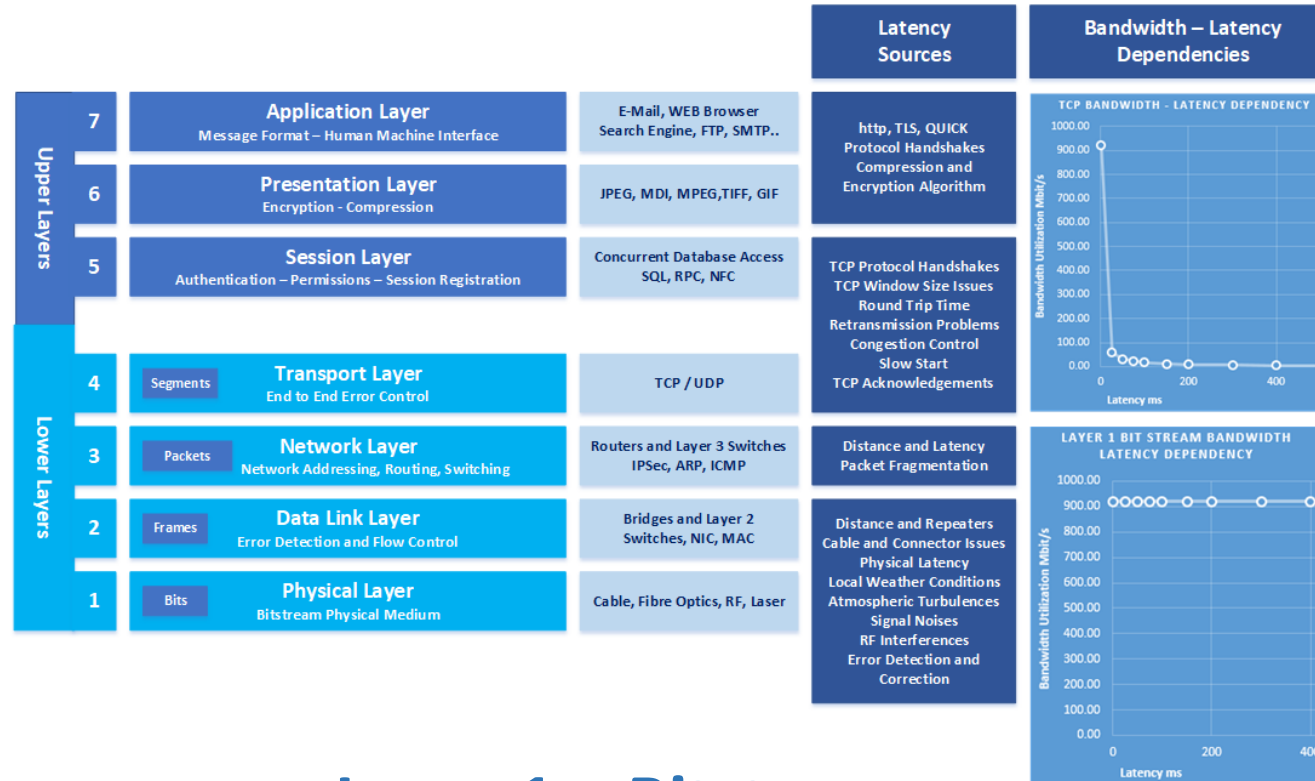


OSI Layer Bandwidth Dependencies

			Bandwidth Dependencies	Measurement Tools
Upper Layers	7	Application Layer Message Format – Human Machine Interface	E-Mail, WEB Browser Search Engine, FTP, SMTP..	Network Simulators Traffic Generator Protocol Analyzer
	6	Presentation Layer Encryption - Compression	JPEG, MDI, MPEG,TIFF, GIF	
	5	Session Layer Authentication – Permissions – Session Registration	Concurrent Database Access SQL, RPC, NFC	
Lower Layers	4	Transport Layer End to End Error Control Segments	TCP / UDP	Distance and Latency Packet Fragmentation Distance and Repeaters Cable and Connector Issues Physical Latency Local Weather Conditions Atmospheric Turbulences Signal Noises RF Interferences Error Detection and Correction Cable Testers Network Connectivity Tools
	3	Network Layer Network Addressing, Routing, Switching Packets	Routers and Layer 3 Switches IPSec, ARP, ICMP	
	2	Data Link Layer Error Detection and Flow Control Frames	Bridges and Layer 2 Switches, NIC, MAC	
	1	Physical Layer Bitstream Physical Medium Bits	Cable, Fibre Optics, RF, Laser	

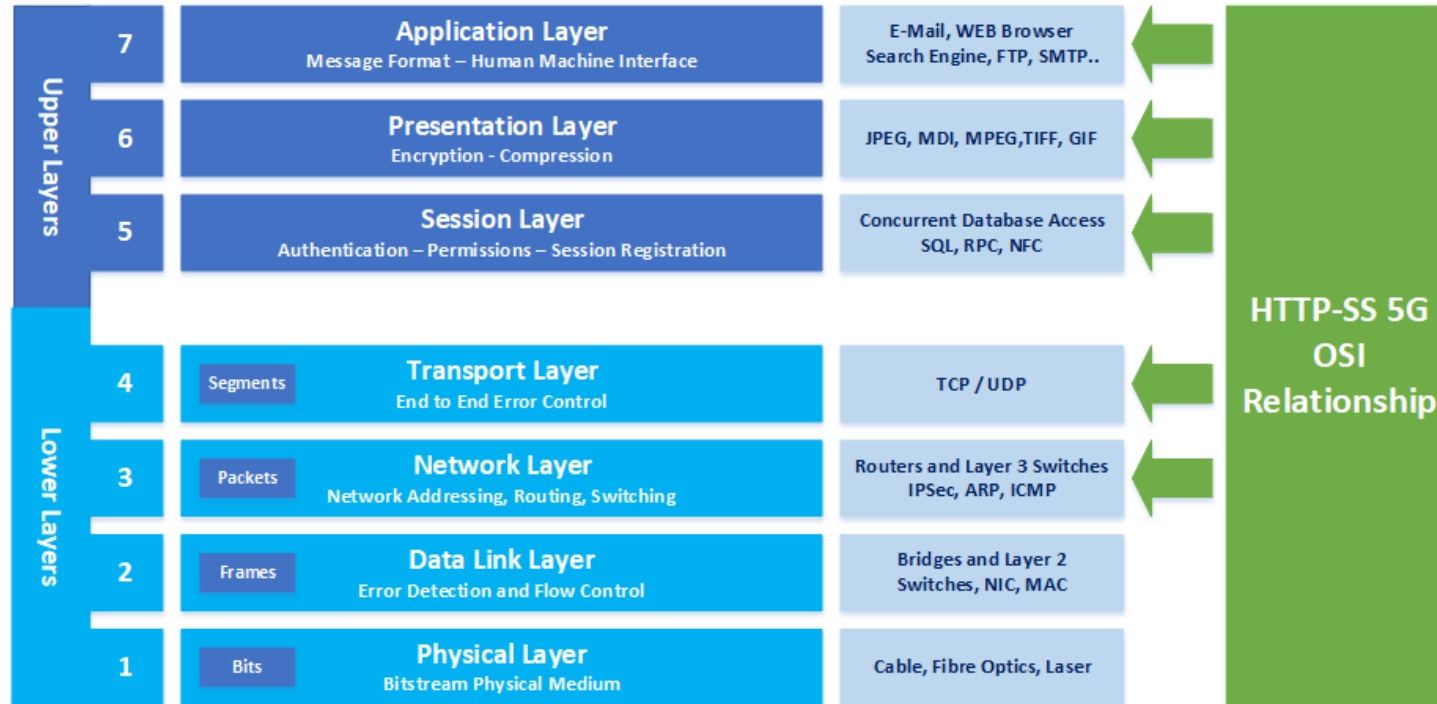
Used Measurement Tools

OSI Layer Bandwidth Differences Between Layer 1 - Physical And Layer 2 - 7



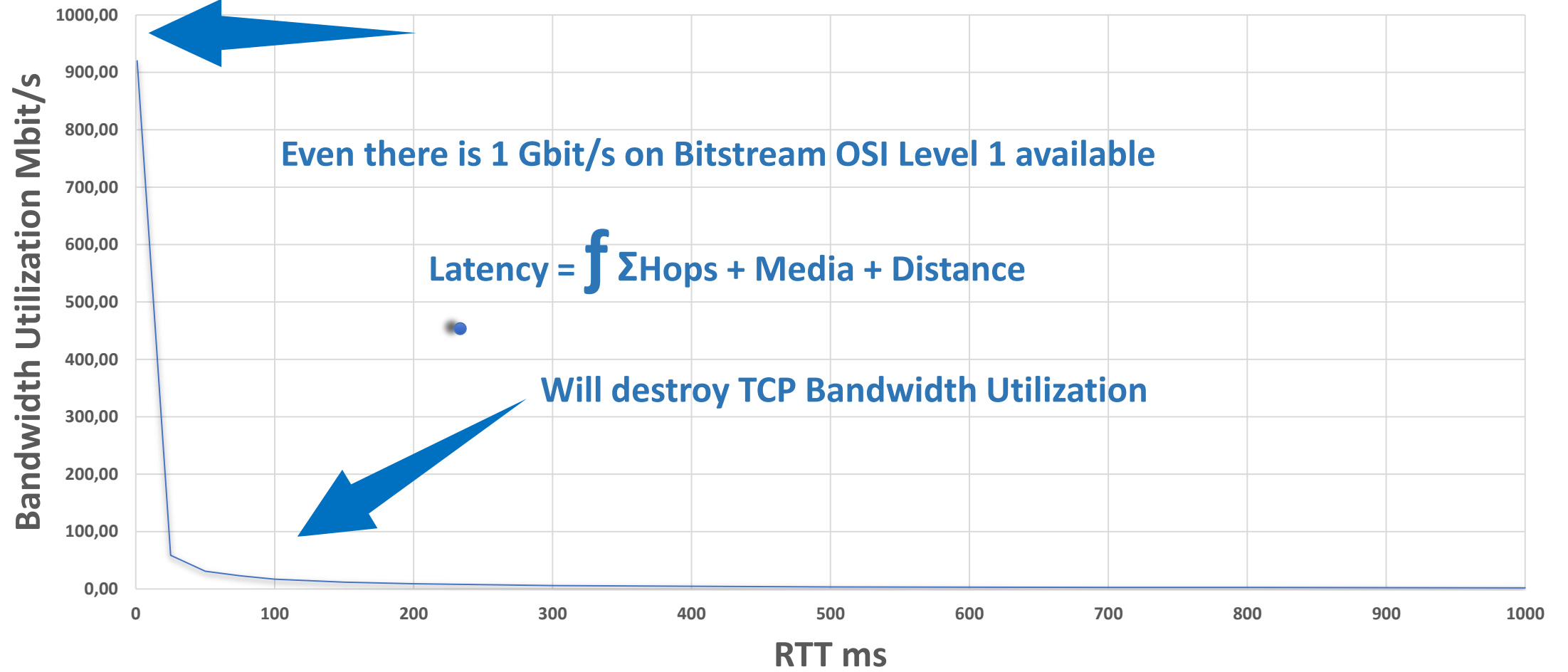
**Layer 1 = Bitstream
Unrealistic High**

HTTP-SS 5G OSI Layer Relationship

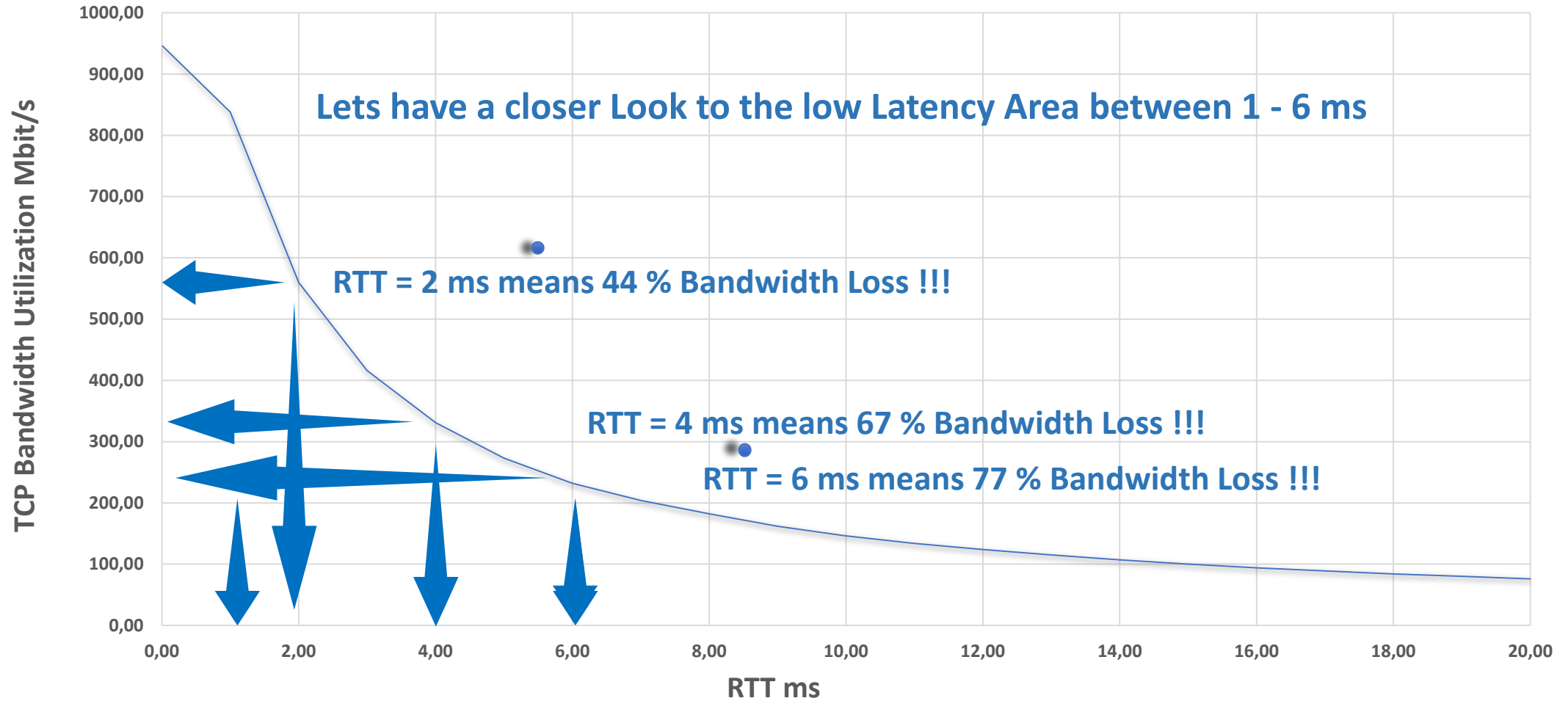


HTTP-SS 5G Cross Layer Technology

TCP Bandwidth - Latency Dependency

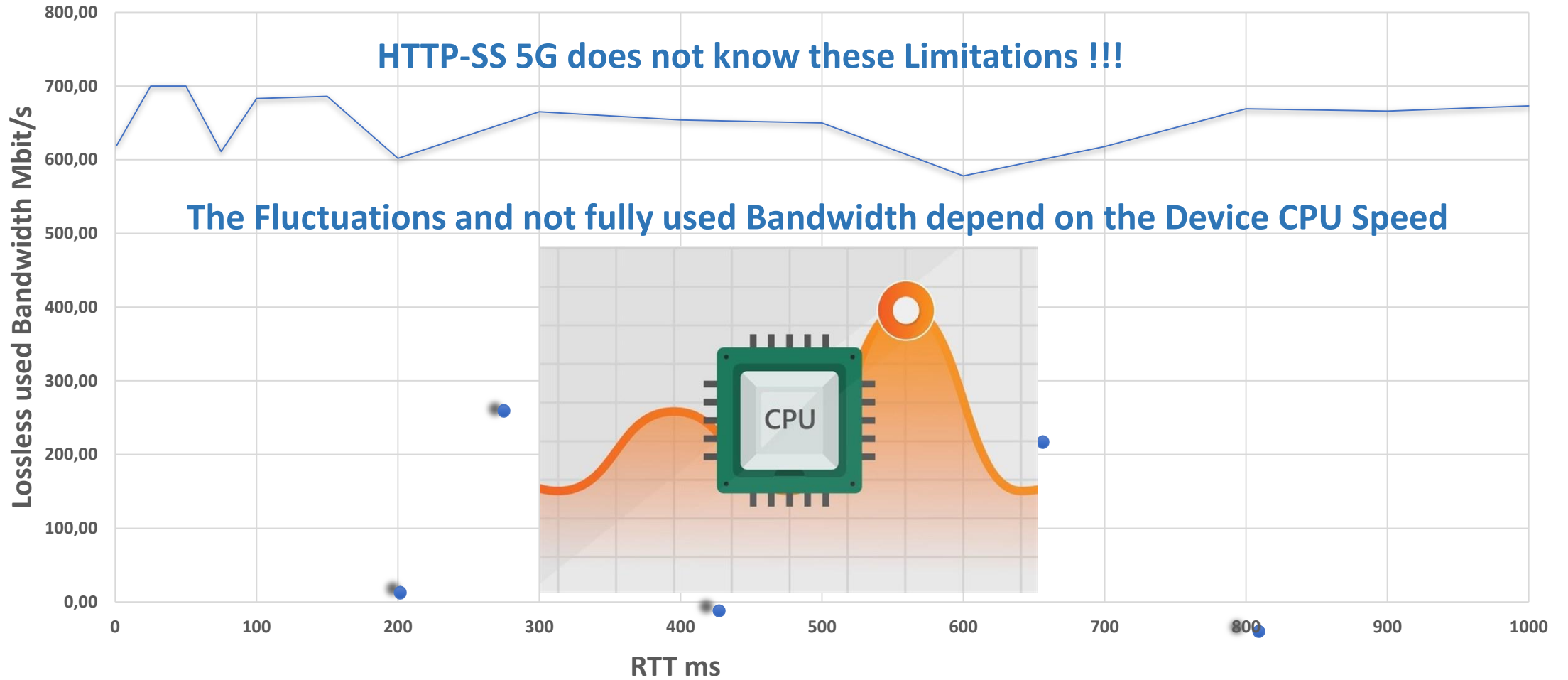


Low Latency High Speed TCP Bandwidth Dependency



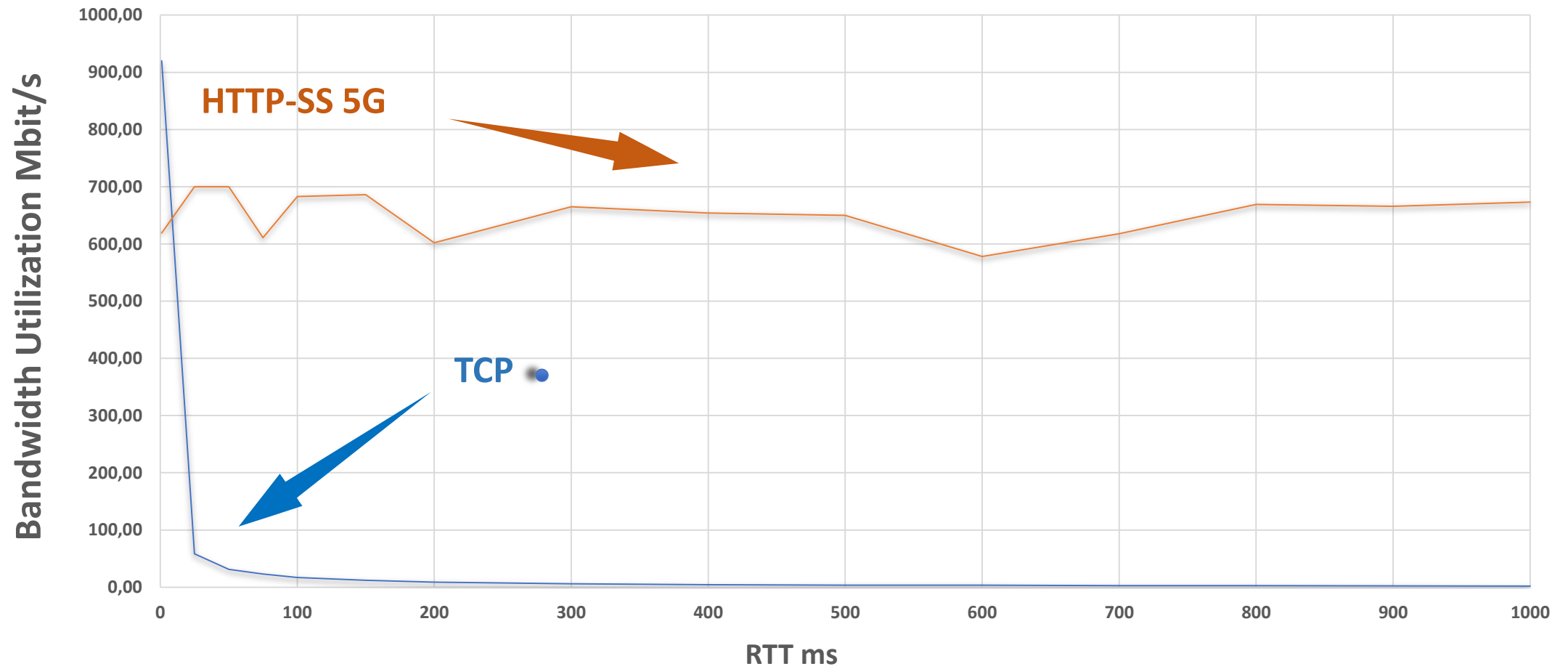
HTTP-SS 5G - http | FTP | VoIP | Media Streaming | ...

HTTP-SS 5G does not know these Limitations !!!



TCP ./ HTTP-SS 5G

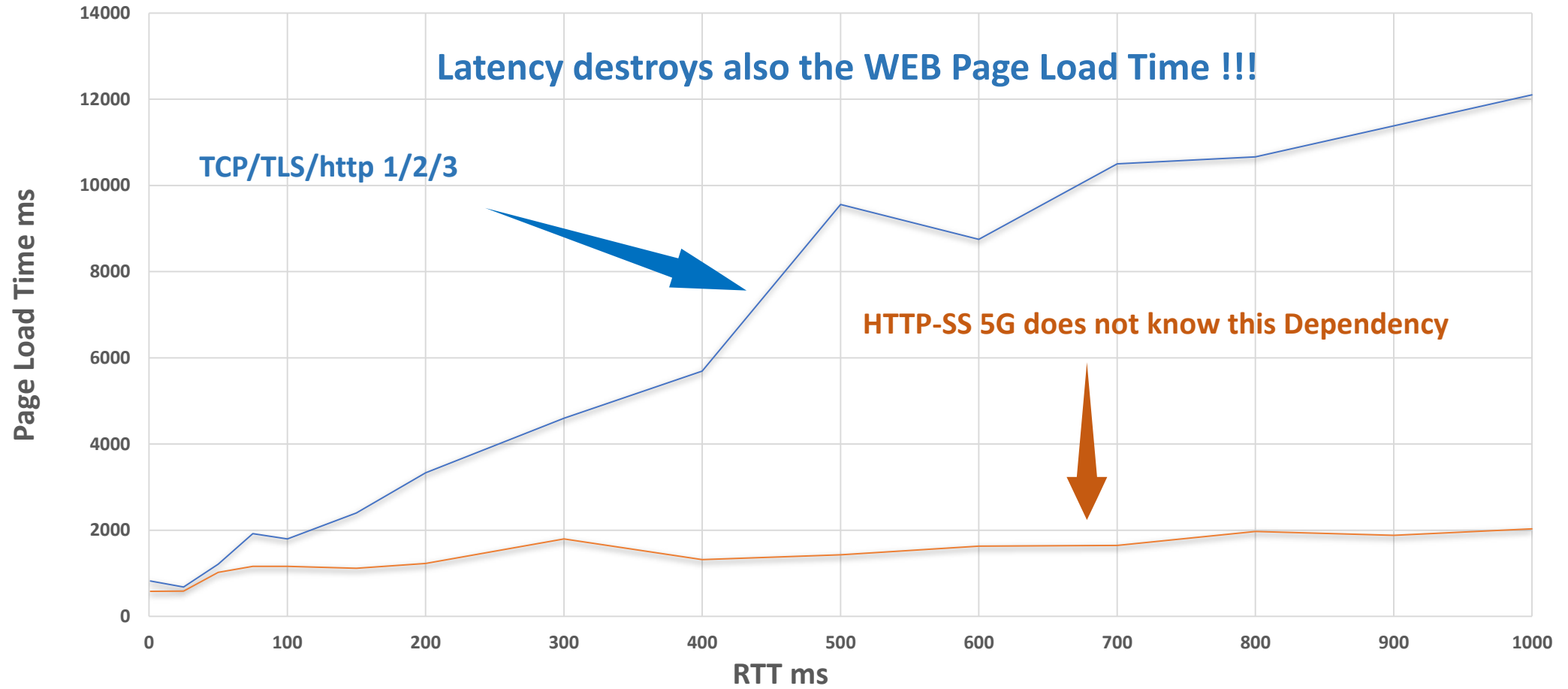
TCP HTTP-SS 5G

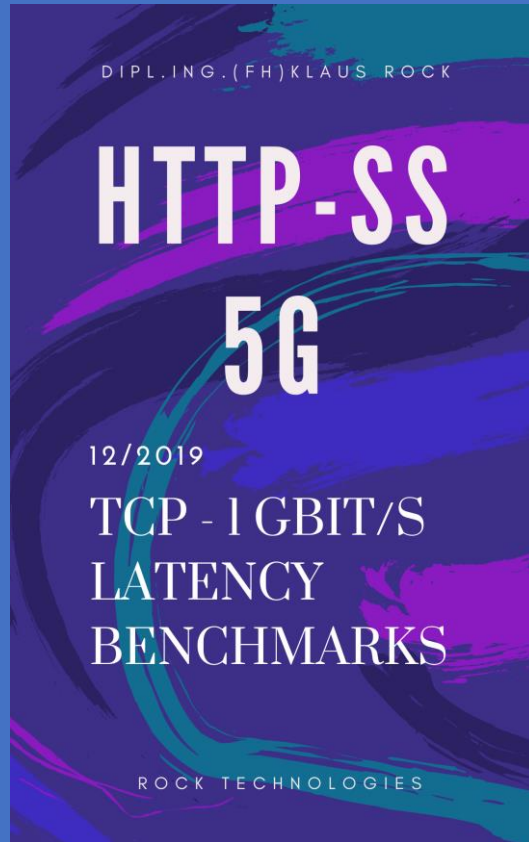


WEB Page Load Time

● TCP/TLS/HTTP 1/2/3

● HTTP-SS 5G





Request the complete Benchmark Test

Rock Technologies

Bonhoefferstrasse 37

73432 Aalen – Germany



k.rock@rock-technologies.com



++49-7367-9222-958