

Update on IPv6 Performance Data

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Methodology

What's new in this data?

- Old RTT data only tracked TCP connection establishment latency
- New data also captures smoothed RTT values observed by TCP over entire connection lifetime

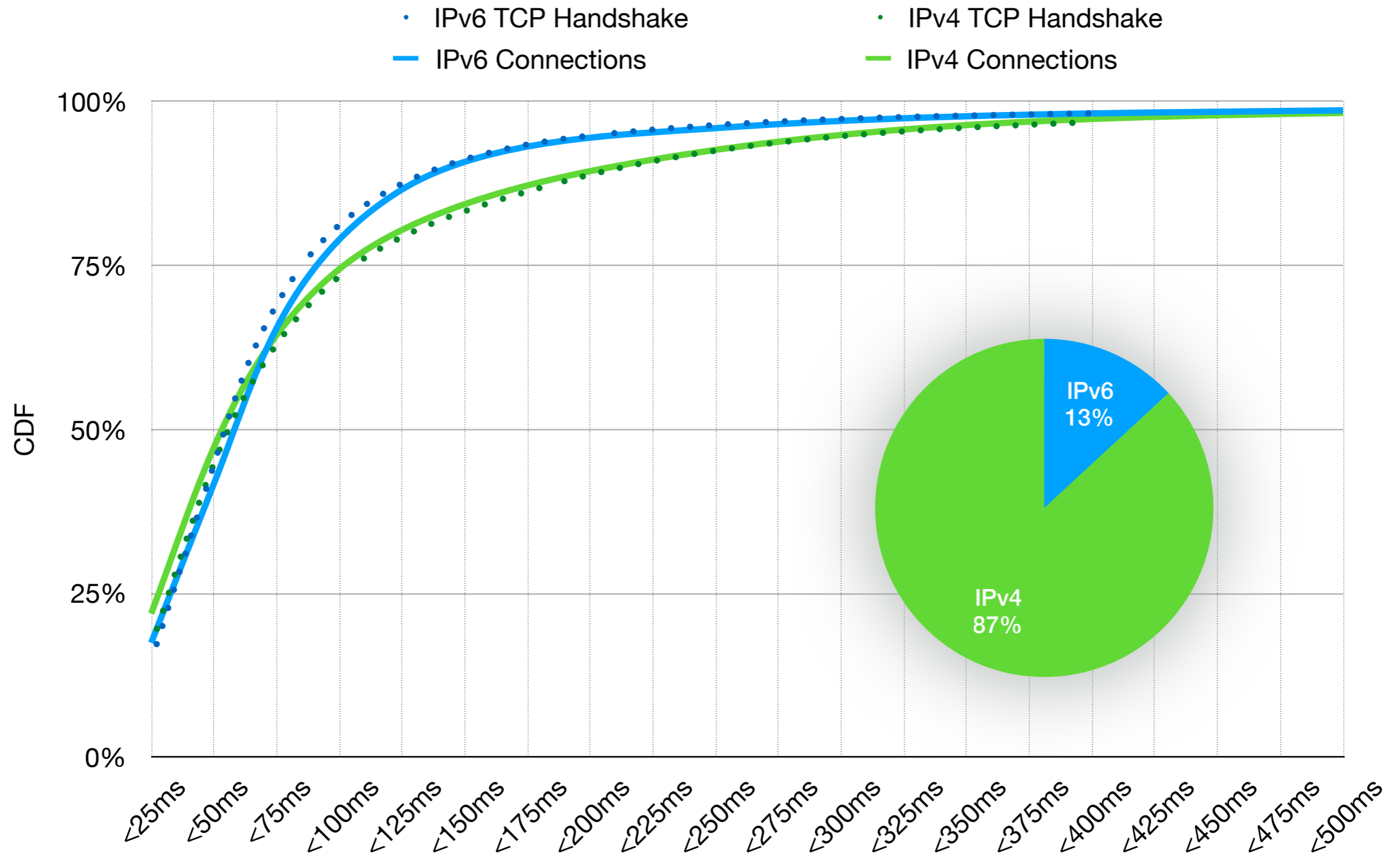
Data in this presentation was collected over the course of one month (February 2018) on a random sample of 0.1% of connections

IPv6 Availability

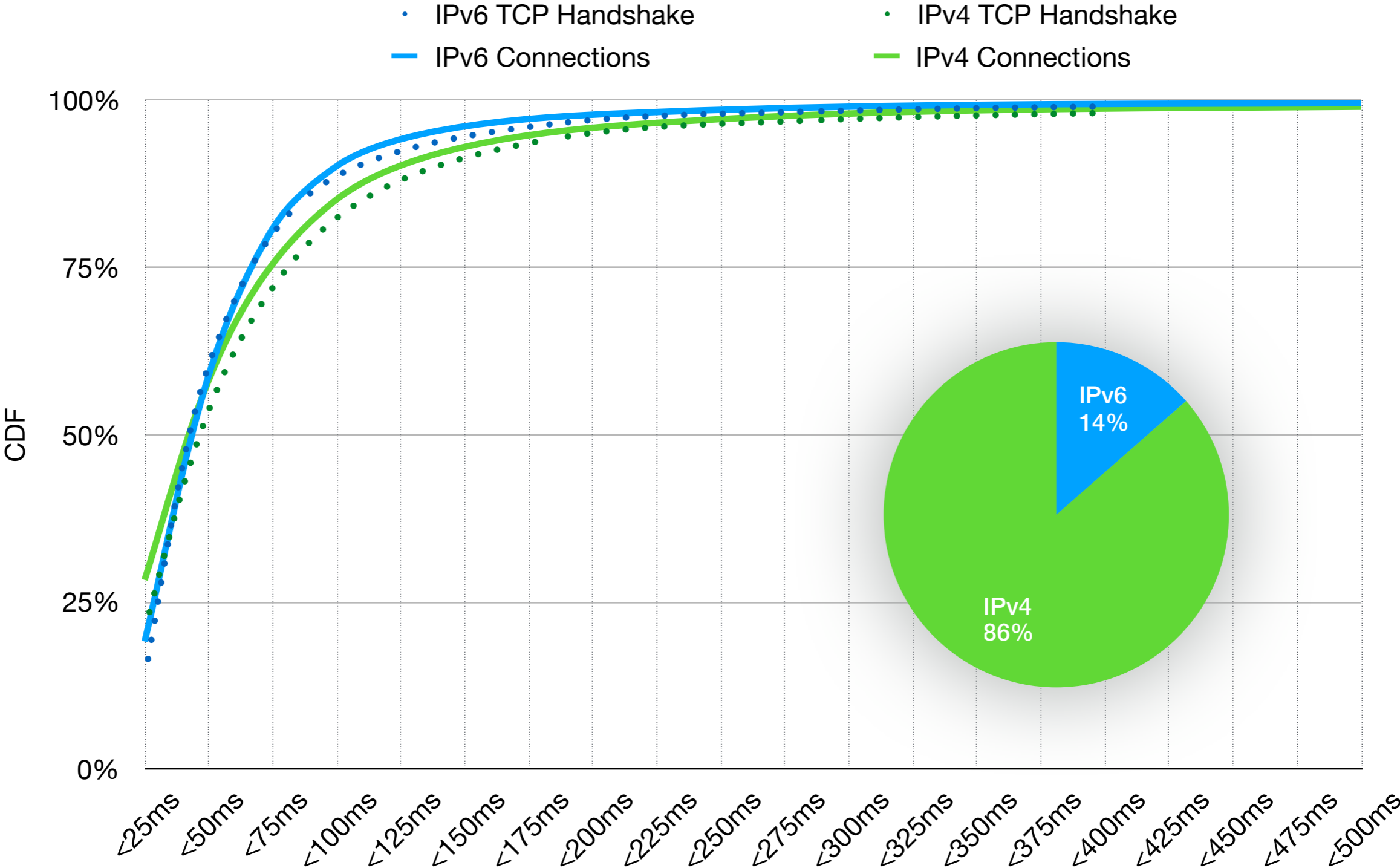
Percentage of connections made on a network that offered IPv6 connectivity

	Wi-Fi	Cellular
Global	29%	44%
US	39%	87%
UK	32%	0.12%

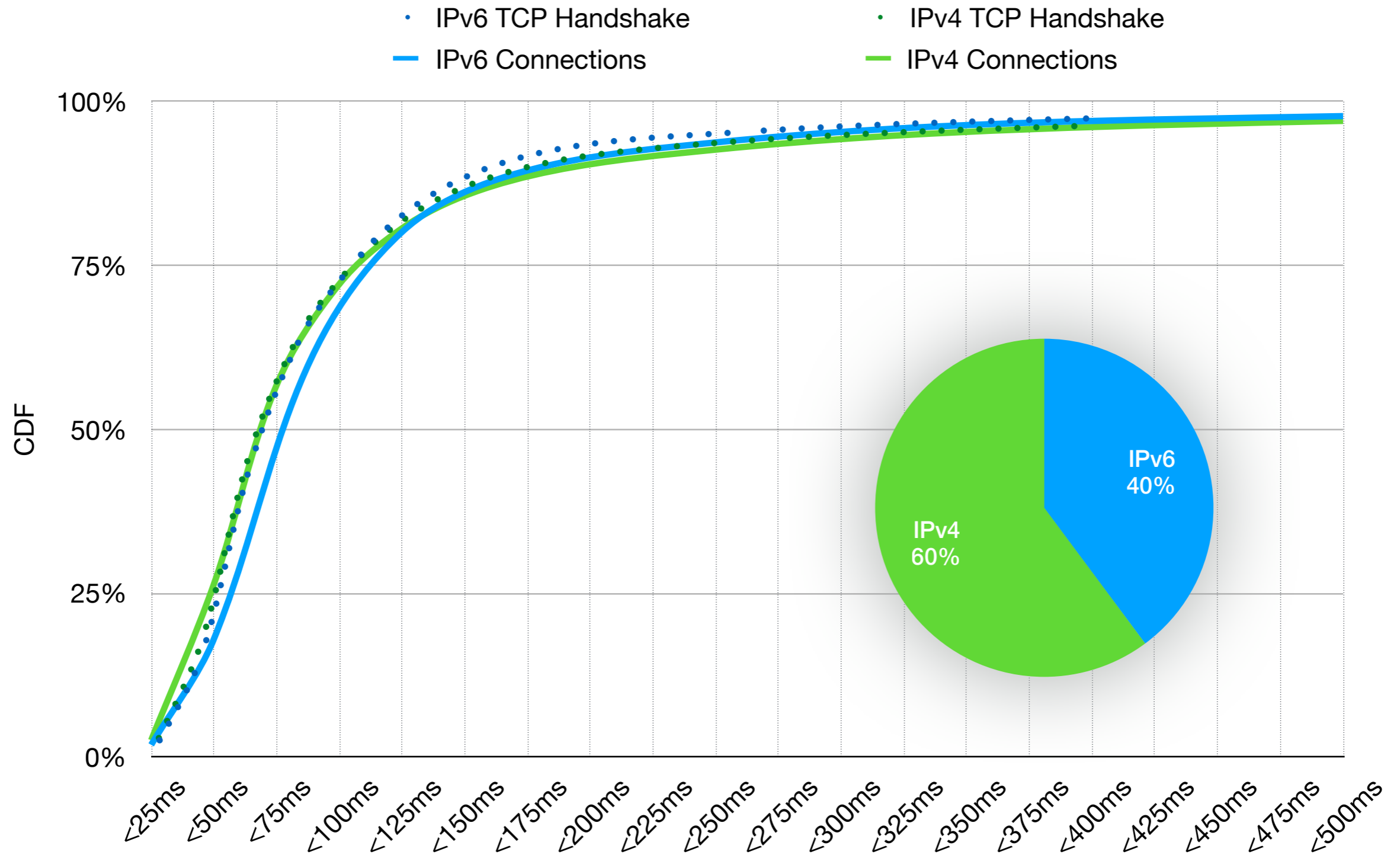
Global RTT Values



US Wi-Fi RTT Values

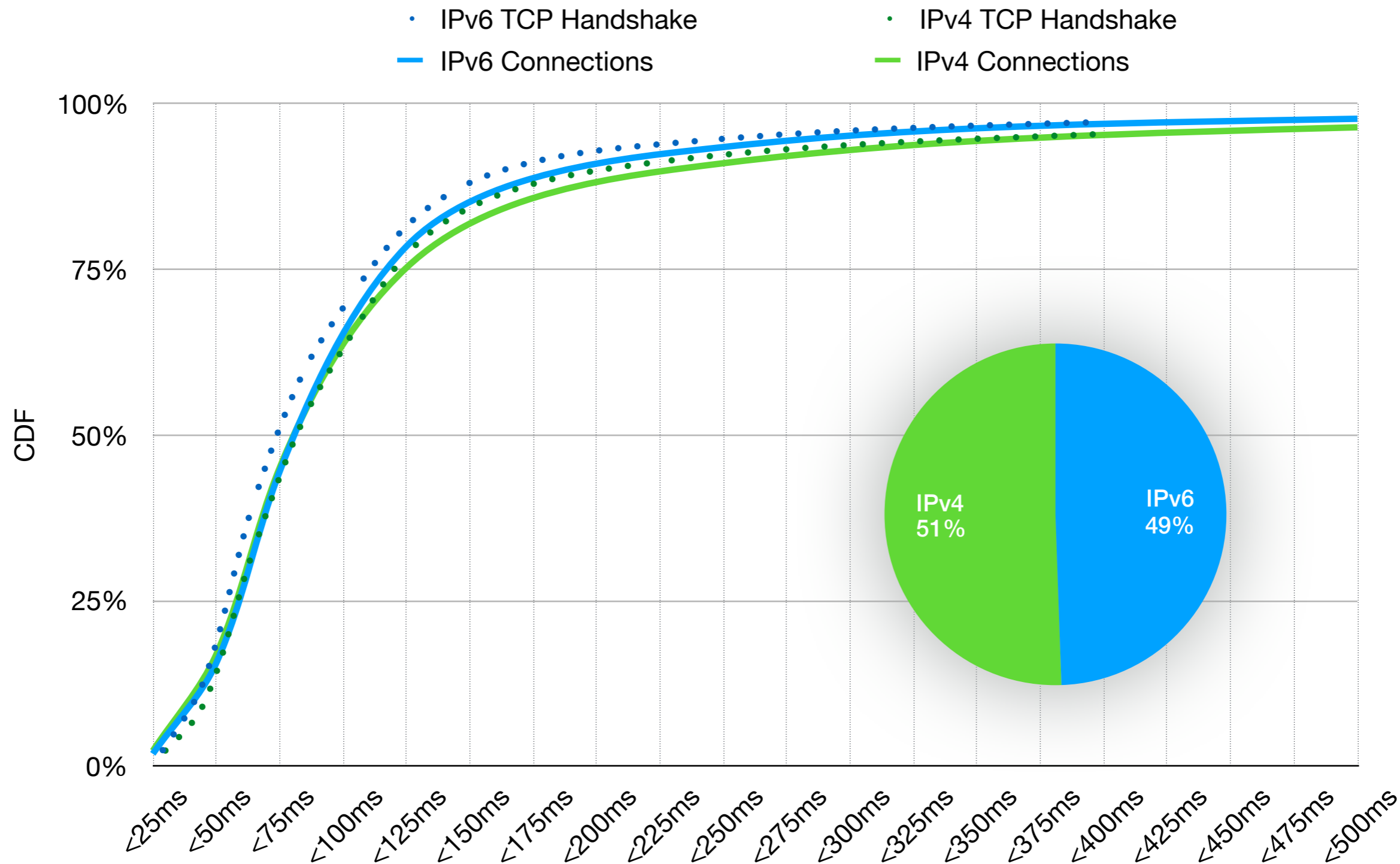


US Cellular RTT Values

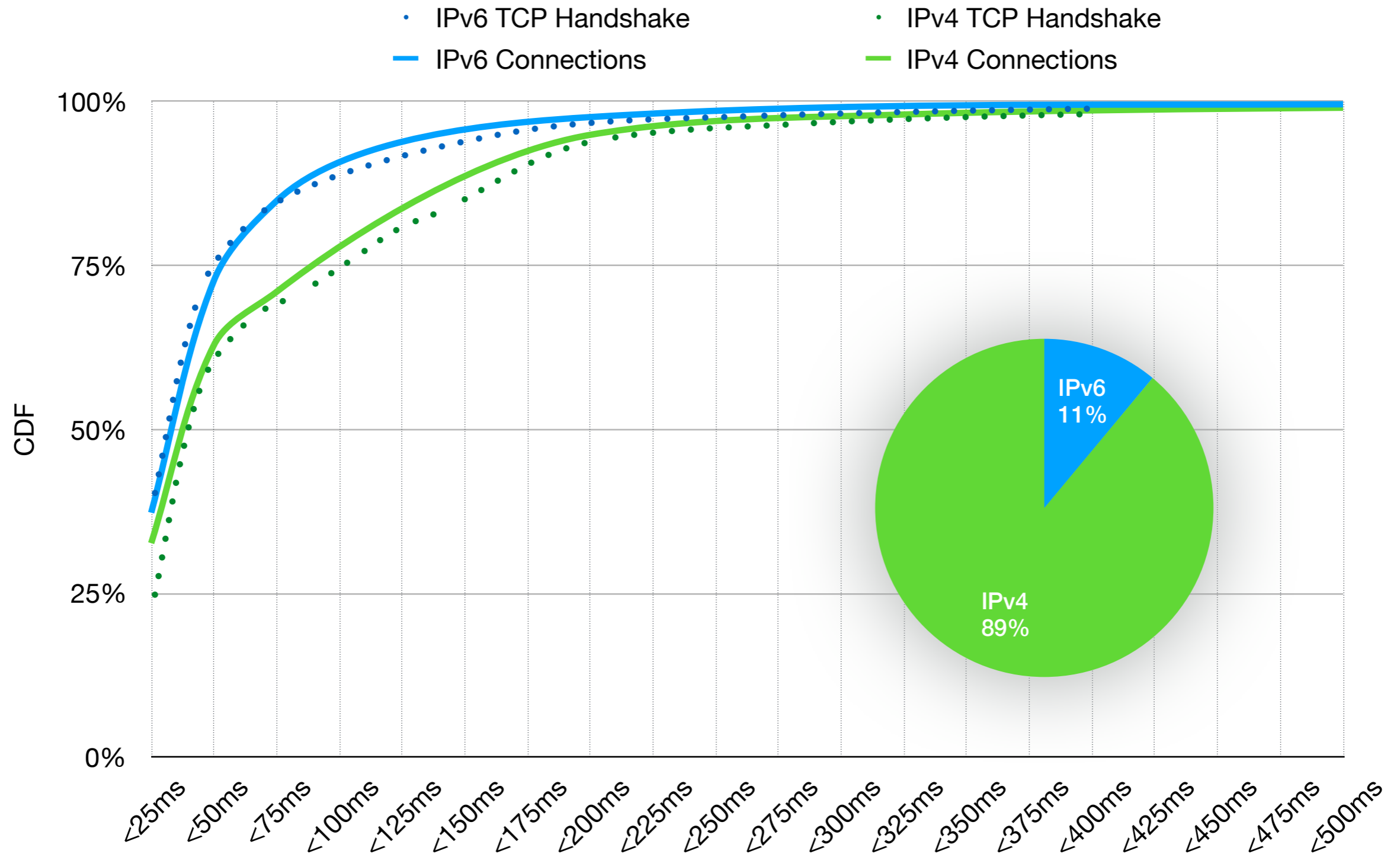


US Cellular RTT Values

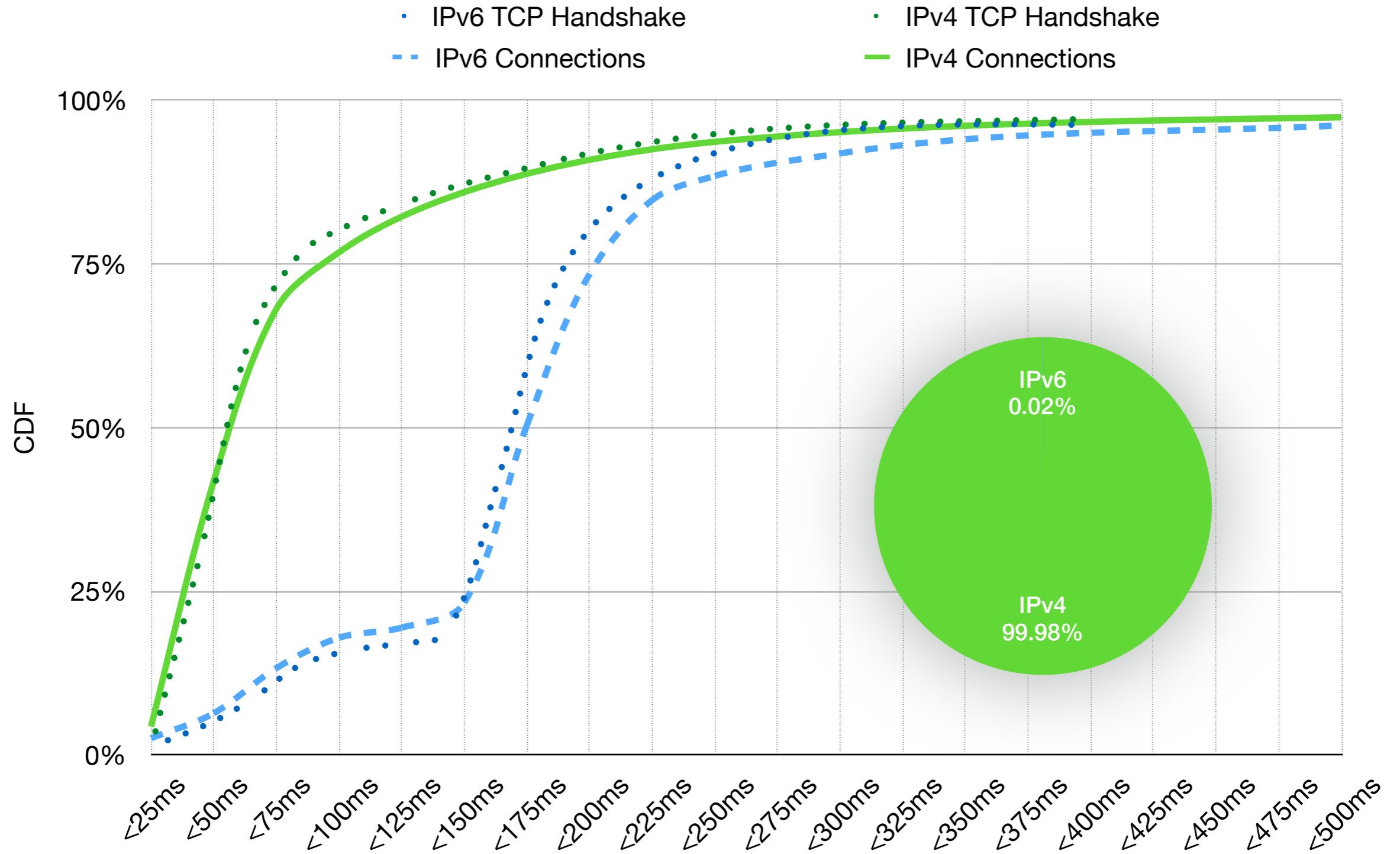
Subtracting carrier with slowest IPv6



UK Wi-Fi RTT Values



UK Cellular RTT Values



Observations

TCP handshake latency (RTT_H) is generally a good predictor of connection RTT (RTT_C)

- On Wi-Fi, $RTT_H > RTT_C$
- On Cellular, $RTT_H < RTT_C$

Wi-Fi IPv6 RTT_C is generally lower than IPv4

Cellular RTT_C values are more polarized, by carrier

UK Cellular has extremely low IPv6 penetration, and what little is measured hints at poor performance

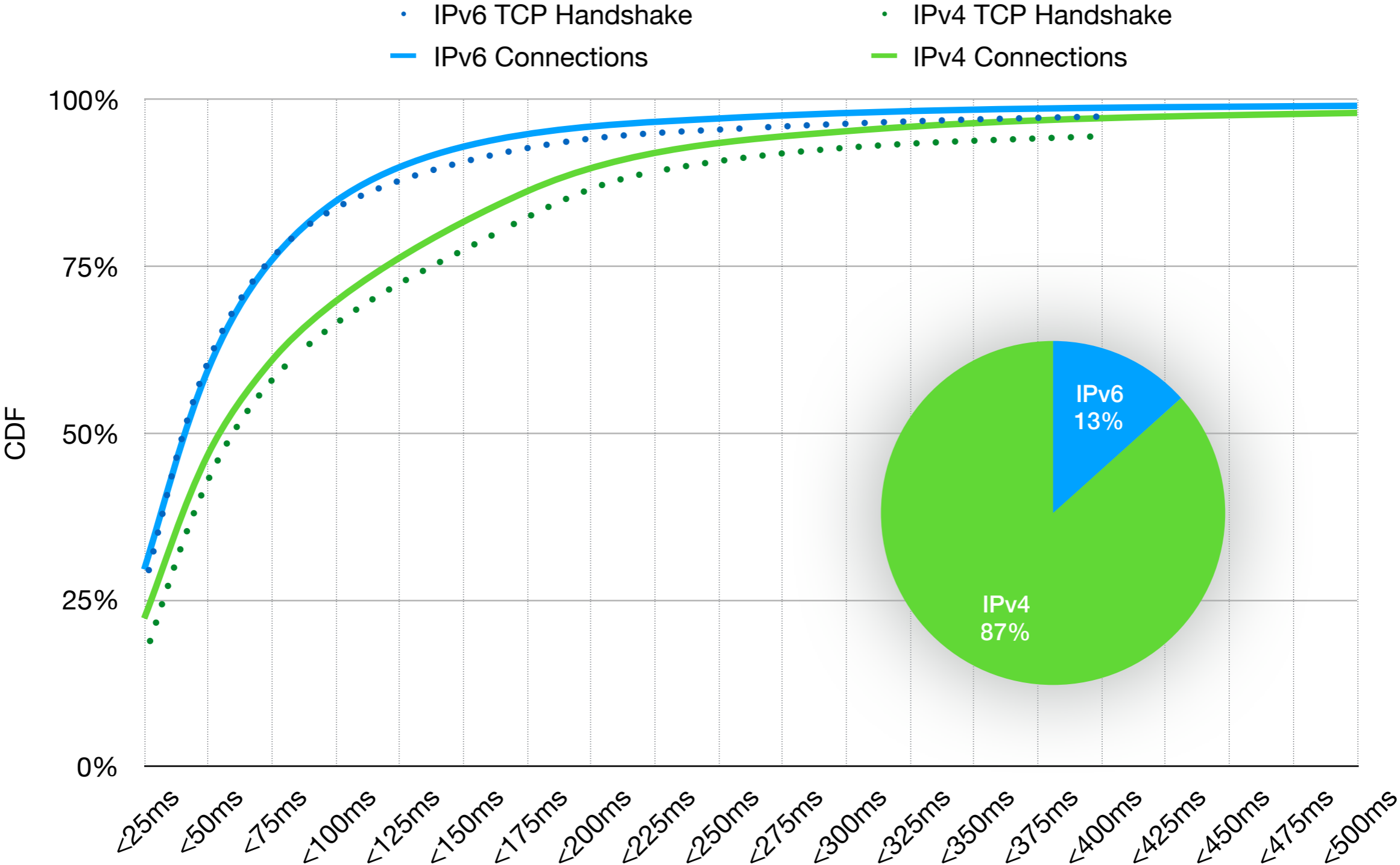
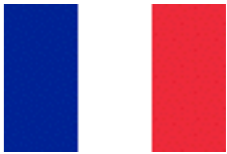
Backup Slides

IPv6 Availability

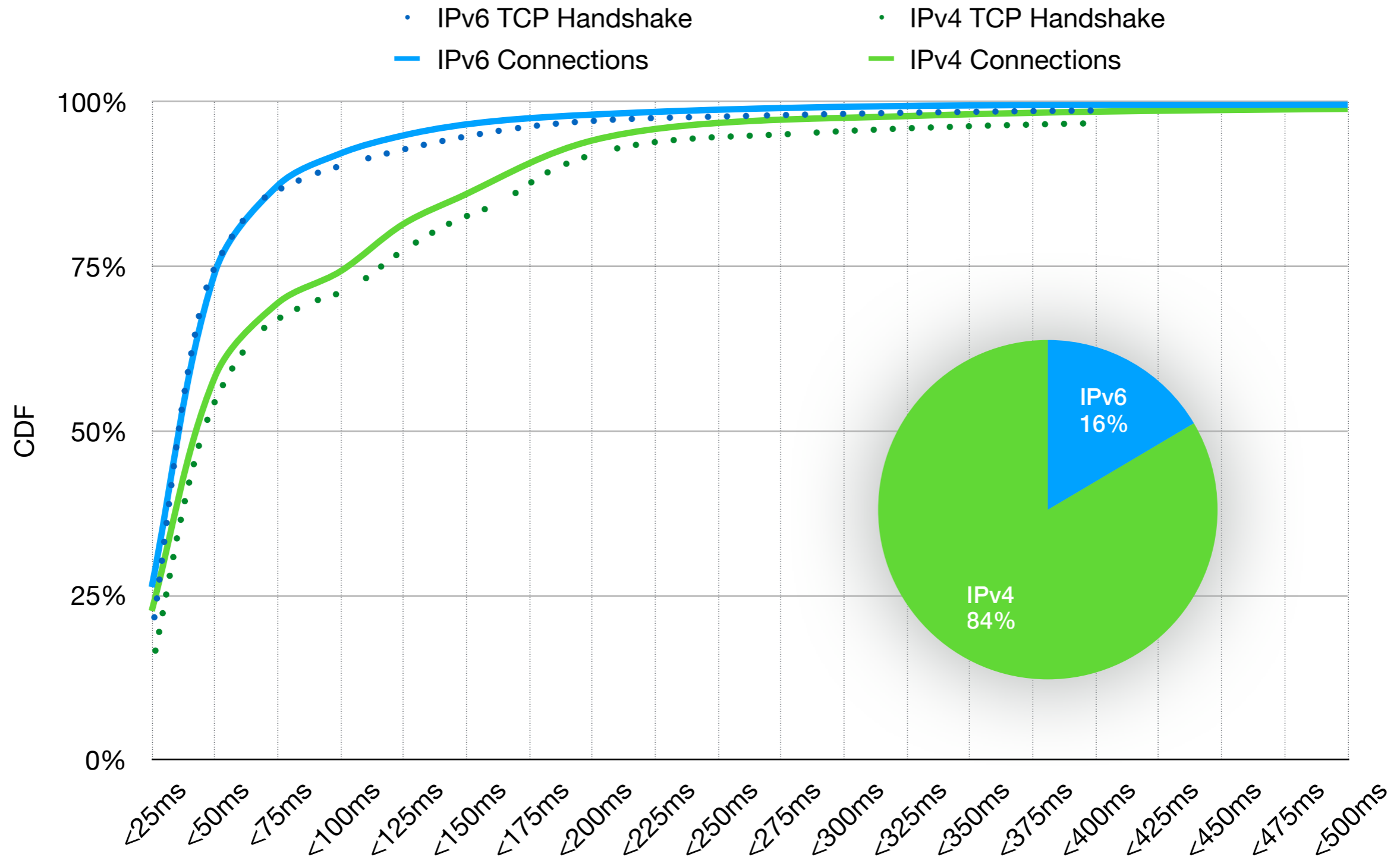
Percentage of connections made on a network that offered IPv6 connectivity

	Wi-Fi	Cellular
Global	29%	44%
US	39%	87%
UK	32%	0.12%
France	35%	0.03%
Germany	50%	34%
Belgium	60%	0.05%
India	34%	29%

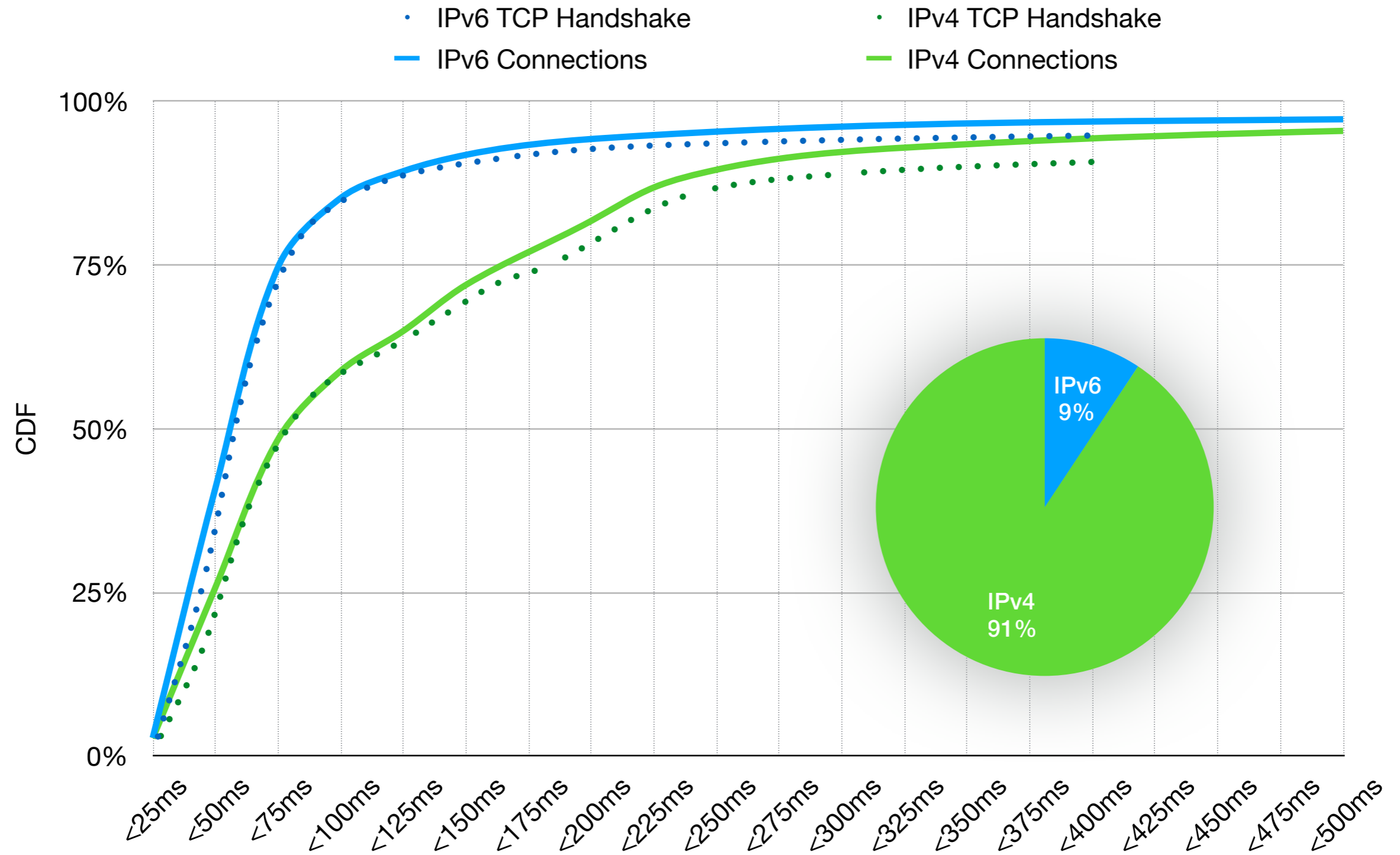
France Wi-Fi RTT Values



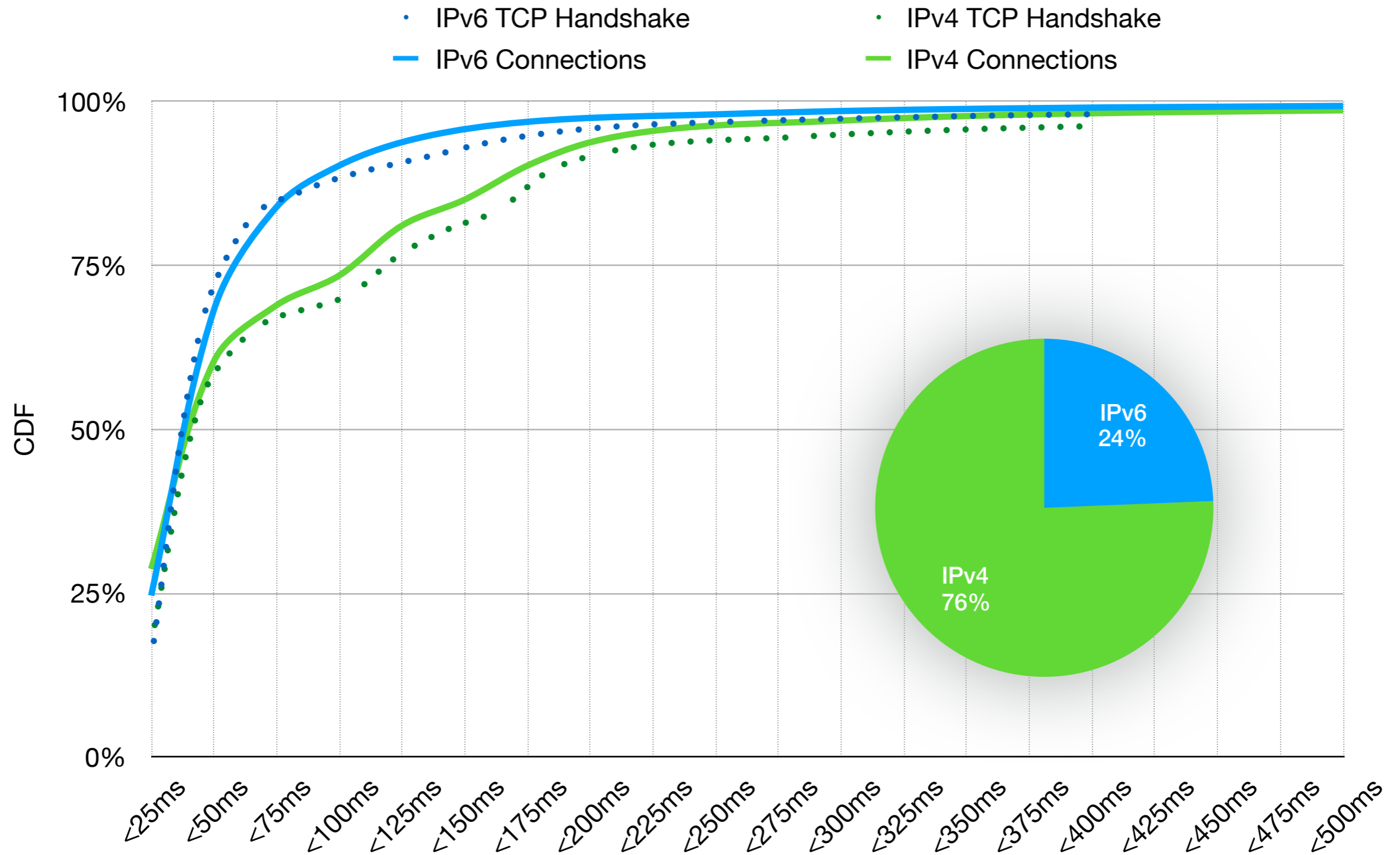
Germany Wi-Fi RTT Values



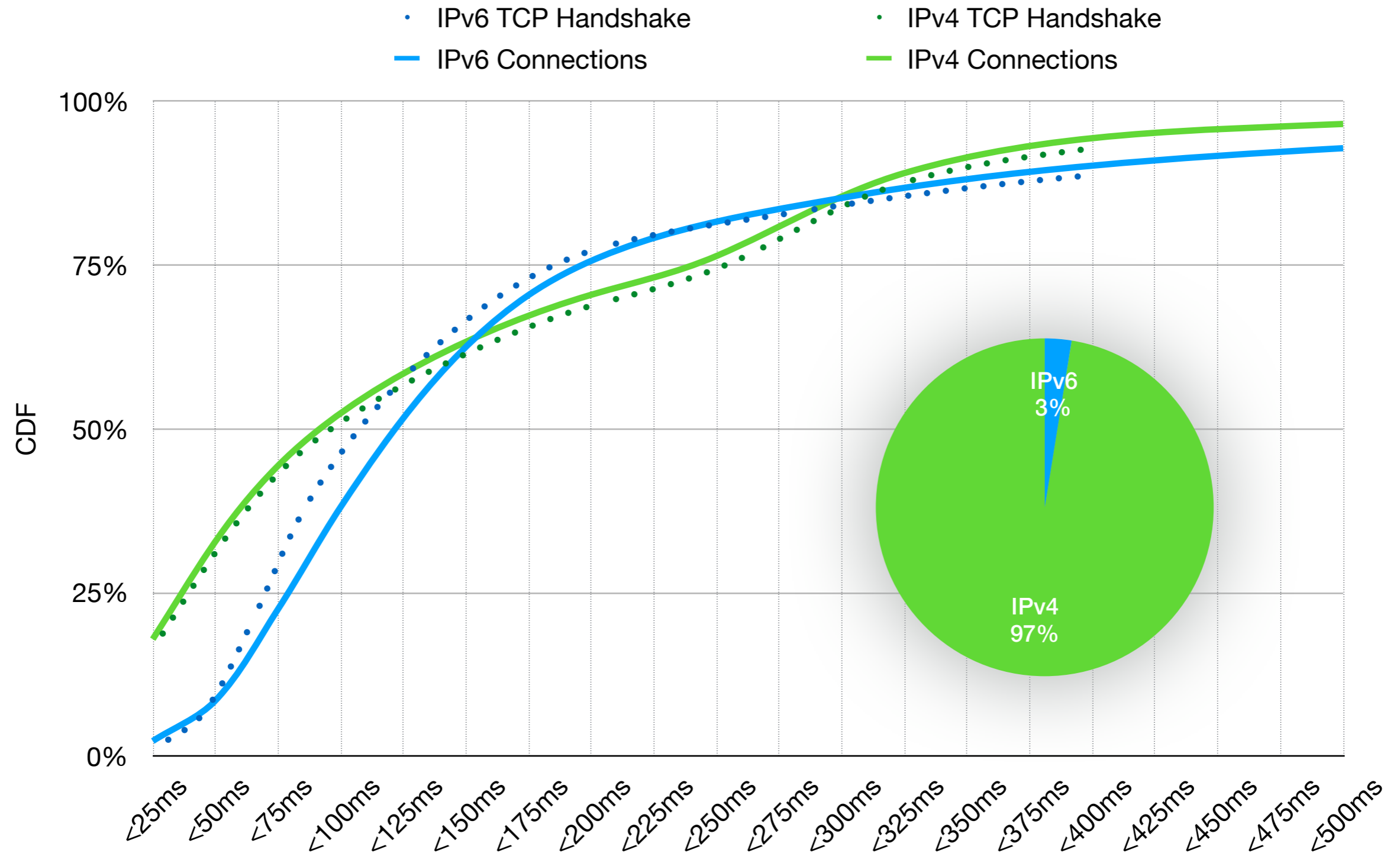
Germany Cellular RTT Values



Belgium Wi-Fi RTT Values



India Wi-Fi RTT Values



India Cellular RTT Values

