To: Body of European Regulators for Electronic Communications (BEREC)

Date: November 3, 2025

Re: Consultation on Draft BEREC Work Programme 2026

From: Amazon Inc.
Apple, Inc.
Broadcom Inc.
Cisco Systems Inc.
Extreme Networks
Hewlett Packard Enterprise
Intel Corporation
Meta Platforms, Inc.

Dear Colleagues -

The undersigned companies, representing an important cross-section of the world's leading silicon vendors, system manufacturers and application providers, welcome the opportunity to comment on the Draft BEREC Work Programme 2026 (the Draft Programme). We fully support BEREC's high-level strategic priorities of promoting full connectivity and the Digital Single Market; supporting competition-driven and open digital ecosystems; empowering end-users; contributing to environmentally sustainable, secure and resilient digital infrastructures; and strengthening BEREC's capabilities and continuous improvement. We also recognise the role BEREC plays in the coherent implementation of European Electronic Communications Code (EECC) objectives and in the development of meaningful key performance indicators (KPIs) to achieve connectivity targets.

We appreciate BEREC's acknowledgement of the importance of hybrid/heterogenous networks to the provision of broadband services across Europe, including the interworking and interrelation between mobile and RLAN networks to enhance indoor coverage. In the Draft Programme, BEREC proposes to invite external presenters and initiate internal discussions on the topic of enhancing indoor coverage. These are important initial steps. However, we believe such discussions could benefit from the establishment of specific goals. To that end, as part of its activities related to hybrid networks and the enhancement of indoor coverage, we encourage BEREC specifically to:

- Study the roles of competition and cooperation between mobile and RLAN networks in the provision of indoor connectivity,
- Identify barriers to indoor broadband connectivity enhancement, and
- Establish KPIs to measure progress on indoor connectivity targets and end user connectivity performance.

These proposed activities will directly address at least three of BEREC's strategic priorities, namely a) promoting full connectivity; b) empowering end users; and c) contributing to environmentally sustainable digital infrastructures.

a) Promoting full connectivity

In a gigabit society, speed is one important component of full connectivity. However, there are

other aspects of a high-quality connected experience, such as latency, resilience, jitter, etc. that should be considered. To properly capture the quality of a connection experienced by the end user, performance measurements should go beyond coverage and download capacity – e.g., DL/UL speeds, latency, jitter and resilience, calculated during busy hours (or working hours for enterprises).

KPIs should be defined to ensure that high-quality gigabit connectivity is actually available to end users – particularly when they are indoors where the majority of bandwidth intensive, low latency activity occurs. A harmonised measure of actual speeds and quality of service for end users in indoor locations would be a significant step toward ensuring full connectivity across Europe.

b) Empowering end users

Today, most end users currently bear responsibility for distributing their fixed connectivity throughout their premises leveraging Wi-Fi, meshed Wi-Fi, and powerline communication technologies (among others) to distribute internet connectivity throughout their homes and businesses. Investments in fibre and mobile infrastructure without adequate availability of local connectivity distribution technology and mechanisms is similar to investing in freeways without access ramps and local roads. KPIs should be adopted to indicate how easily end users can distribute gigabit connectivity within their premises.

It is important to highlight the role of technology-neutral options for indoor connectivity, including the performance, affordability and availability of equipment that can connect to any access infrastructure. This supports consumers in making informed decisions in a competitive market by increasing transparency in understanding the quality of their full end-to-end connectivity.

c) Contributing to environmentally sustainable digital infrastructures

High-quality connectivity indoors should ideally be supplied by indoor networks such as Wi-Fi, public 5G indoors, and indoor private 5G (P5G). Outdoor-to-indoor solutions consume high levels of power to penetrate building walls for frequencies above 2-3 GHz, particularly for newer, more energy-efficient buildings. Similarly, connecting an indoor device to an outdoor network will use considerably more energy, while also resulting in more frequent recharge cycles, increased battery wear, and additional electronic waste. Further, outdoor networks are designed to handle mainly downlink traffic (in a ratio of 9:1), so the uplink is generally a considerable limiting factor for those advanced applications which require performant uplink connectivity.

Solutions that support seamless handover of devices between public 5G, P5G and Wi-Fi networks (e.g. PassPoint, OpenRoaming, etc.) enable more cost effective and environmentally sustainable high-throughput indoor connectivity. BEREC's analysis of hybrid network collaboration should include a focus on sustainability in the context of enhanced indoor coverage.

To best ensure BEREC's objectives are met, we encourage BEREC to prepare a report on gigabit connectivity indoors setting out the conclusions of the analysis described above as well as an

indication of next steps and recommendations to the Commission.

We look forward to participating in BEREC's activities regarding enhancement of indoor connectivity and the interplay between RLAN and mobile networks.

Respectfully submitted,

/s/

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