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25 May 2022

Submission on the Swedish Post and Telecom Agency's Consultation of decisions and invitations to apply for the allocation of the 900MHz, 2.1GHz and 2.6GHz bands

To: The Swedish Post and Telecom Authority ("PTS")
From: Huawei Technologies Sweden AB ("We")
Date: May 25, 2022

We note PTS's proposed decision to limit the number of permits (PTS reference: 21-10605) and part 1 ("**AI Part 1**") of the general invitation to apply for permit to use transmitters in the 900 MHz, 2.1GHz and 2.6GHz bands (the "**Frequency Bands**") and related documents published on April 25, 2022 (the "**Proposal**"). We hereby submit the following submission and thank PTS for the opportunity to submit it.

INTRODUCTION

- (1) The allocation of permits in the Frequency Bands concerns an auction for new frequencies and new applications will be examined. This means that all conditions of the next stages, including security conditions, should be independently assessed on the basis of the most "up-to-date" and concrete information and evidence available.
- (2) We note that there are many differences between the Frequency Bands and previous frequency bands (*i.e.*, 3.5GHz and 2.3GHz) and as such, the conditions imposed to these Frequency Bands should also be different.
- (3) We note that with a clearer understanding of 5G security risks and measures by global operators, new and up-to-date comprehensive end-to-end security measures could be taken and could be used for meeting all 16 principles raised by the Consultation Authorities (the "**16 Principles**"), and suppliers could provide verification and guarantee. Therefore, the non-technical criteria of Annex B2 in this Proposal should not apply.
- (4) Finally, we note that a potential limitation on certain suppliers may lead to a distortion of free competition between operators and may not be helpful to cover so called "white spots" and promote innovation.

PTS HAS THE LEGAL OBLIGATION TO MAKE AN INDEPENDENT ASSESSMENT AND DECISION

- (5) According to the LEK and the Proposal, PTS may decide on conditions for the protection of Sweden's security after consultation with the Consultation Authorities. Considering that this is a new auction for permits in the Frequency Bands, we endorse the PTS and believe that PTS, which is a competent authority with excellent credentials in technical expertise, could make an independent assessment and make a new decision with regard to security conditions under Swedish law and the European Electronic Communications Code ("EECC").
- (6) PTS could balance any proportionate measures necessary to ensure that the radio infrastructure in Sweden is compatible with EU-law, and then make a decision concerning those measures. We would like to work together with PTS and other stakeholders, to provide support, provide workable suggestions and to assist PTS in making their independent assessment.

THE USE OF RADIO TRANSMITTERS IN THE FREQUENCY BANDS WOULD BE DIFFERENT FROM 3.5GHz AND 2.3GHz

- (7) The Frequency Bands have relatively limited bandwidth (160MHz in total), and will still be used for conventional eMBB scenario. The similar user group, coverage area, type of service and wireless technology will continue for many years after the spectrum auction, which has been safely used for the past decades. Unlike the aforementioned spectrum, 3.5GHz and 2.3GHz bands have wide bandwidth (500MHz), and are for new connectivity or services, such as URLLC (used for critical infrastructure) and mMTC (used for internet of things).
- (8) The Frequency Bands are the most suitable way to cover so called "white spots", since Sweden with the 2025 target, endeavours to provide fast broadband for all households (minimum 30Mbps and 99.9% of households should have 100Mbps). Currently, 2% of households in Sweden are still without at least 30Mbps internet access. In contrast, in Finland, similar bands are used for rural areas and holiday houses to provide 100Mbps internet access.
- (9) A limitation of certain equipment supplier would impose an unnecessary burden for operators, and would therefore slow down the digitalization process of Sweden.

OPERATOR COULD TAKE TECHNICAL MEASURES TO MANAGE SECURITY RISKS BASED ON THE PRINCIPLES OF ANNEX B₂

- (10) According to the Proposal, PTS intends to require operators to respond to questions set out in Annex B₁ and provide information on how they plan to take into account the 16 Principles and non-technical criteria for assessing operators in Annex B₂.

- (11) Our understanding is that the 16 Principles and non-technical criteria of Annex B2 in the Proposal is intended to manage potential risks and protect the security of Sweden. Operators have the ability to, and experience with, managing Frequency Bands during many years. Therefore, operators could take technical measures to properly manage all potential security risks.
- (12) The GSMA 5G knowledge base¹ could guide stakeholders to ensure end-to-end network security and to manage security risks based on the principles in Annex B2 (especially on addressing the requirements of the 16 Principles).
- (13) The 5G-technology security concerns were born with 5G-technology itself. At the early stage of 5G-technology, most professional organizations analyzed threats and how to address or mitigate risks brought by those threats. However, the lack of a unified understanding and solutions makes it difficult to implement a sufficient and unified level of security control. As the telecom industry's understanding of the risks posed by 5G is growing, GSMA takes the lead in releasing the 5G-knowledge base and proposes end-to-end risk solutions, instead of focusing only on single-point threats and risks. With GSMA's 5G-knowledge base, it is possible to: (i) achieve a unified understanding; (ii) use industry-recognized cyber security technical standards to address cyber security risks; (iii) strengthen inter-industry cooperation and sharing for any risks newly discovered by regulators or carriers; and (iv) jointly update and build a 5G knowledge base for implementation and verification.

PTS COULD MAKE A PROPORTIONATE DECISION AND ADOPT OTHER SOLUTIONS IN ADDITION TO THE AFOREMENTIONED MEASURES FOR THE PURPOSE OF MANAGING THE POTENTIAL SECURITY RISKS FROM SUPPLIERS

- (14) We note that PTS's response to the previous consultation on March 25th from stakeholders and PTS, confirms that the allocation of permits for the Frequency Bands is a new allocation. To assess new applications, PTS requires information on the basis of the most up-to-date evidence available, to support PTS in making a proportionate decision.
- (15) Regarding the security risks (if any) posed by a supplier, there are many solutions available which could support PTS in making a proportionate decision and involve more suppliers to contribute to the market.
- (16) Suppliers could provide the component verification report by a competent and independent third party with relevant authorities to assure product level security.

¹ The knowledge base is available at: <https://www.gsma.com/security/5g-cybersecurity-knowledge-base/> (last visited on 25 May 2022).

- (17) Suppliers could provide a bank guarantee for any network security incident. The guarantee could be used to compensate the costs incurred in mitigating network security related measures, *e.g.* replacing certain components.
- (18) Suppliers could guarantee that all employees having access to network equipment in Sweden have security clearance.

CONCLUSION

- (19) Proportionate conditions reached in collaboration with relevant stakeholders should be considered. We think that diversity of equipment suppliers would increase security, competition and innovation, and would ensure fair cost and reasonable service prices. Diversity of equipment suppliers are also better to cover so called "white spots" in Sweden's networks.