Further Comments of the Fraunhofer-Gesellschaft within the Framework of the Consultation on Promoting Local Telecom Equipment Manufacturing – Comments on the English submissions available on the TRAI webpage.[1]

The Fraunhofer Gesellschaft's (Fraunhofer) further comments within the Framework of the Consultation including comments on the English submissions available on the TRAI webpage are respectfully submitted with the following structure:

1. General Comments
2. Reactions to submissions available on the TRAI webpage.[2]

Fraunhofer commends the TRAI for its national and international engagement with a broad range of stakeholders regarding appropriate measures to help 'enable the Indian telecom industry to transition from an import-dependent industry to a global hub for manufacturing'[3].

1. General Comments

1.1.A TRAI objectives should be considered in light of overall Indian Government initiatives regarding innovation

As previously underlined, Fraunhofer encourages cross-departmental or –ministerial discussions, so that the Indian Government's initiatives are consolidated in a synergistic manner. For example, this could entail bringing together discussions on both the objectives and initiatives being led by the Department of Telecom, Central Board of Customs and Excise, the Ministry of Finance, and the Department of Science and Technology.[4]

1.1.B The Telecom industry ecosystem includes R&D

In Fraunhofer's experience, both basic and applied research are integrally linked to industry competitiveness and strength, and so should be formally observed as part of any industrial ecosystem.

1.1.C TRAI objectives should be considered in light of the legal and governance framework for international business in the telecommunications sector – and standard essential patents

Fraunhofer urges the TRAI to recognise that, in terms of the legal and governance ecosystem, the Indian framework is appropriately addressing any matters arising in relation to licensing and the conduct of parties involved in such negotiations.[5]

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1 http://www.trai.gov.in/consultation-paper-promoting-local-telecom-equipment-manufacturing?page=1

2 http://www.trai.gov.in/consultation-paper-promoting-local-telecom-equipment-manufacturing?page=1

3 TRAI Consultation Paper, page 7.

4 See Consultation Paper, Appendix 1.

5 See Indian High Court decisions of *Ericsson v. iBall* I.A. No.17351/2015 in CS (OS) 2501/2015, *Ericsson v. Intex* I.A. No. 6735/2014 in CS(OS) No.1045/ 2014. For Europe, see Huawei Technologies Co. Ltd v ZTE Corp., ZTE Deutschland GmbH (Case C-170/13, 2015) (*Huawei v. ZTE*). For European Member State court decisions interpreting *Huawei v. ZTE*, see German decisions such as *One-Red v ASUS and Acer* LG

Any government interference with an international market will likely have a direct negative impact on foreign direct investment, and decrease opportunities for Indian researchers and companies to cooperate in international technical projects, and international business.

The experience of the Fraunhofer-Gesellschaft (Fraunhofer), and outcomes of interdisciplinary studies in law and economics regarding innovation, strongly point to a fundamental proposition: to support an innovation cycle, a government must recognise the specific components of the said cycle and support their good development by providing a conducive legal and economic framework.

Importantly, for the framework to support the innovation cycle comprehensively, it must provide adequate mechanisms for all stages of the cycle. In this regard, an innovation strategy, funding to support the implementation fo that strategy, support for R&D investment, mechanisms for educating best talent, and other elements considered in the Consultation Paper are relevant. It is considered that all foundations relating to international technical cooperation, and international trade should remain intact within the domestic setting.

The legal framework should also support innovation taking into account international technological progress, international treaties and international commercial norms which provide the broad yet robust framework – in turn translating through to national laws and jurisprudence important for the preservation of fundamental rights and obligations for government, industry and consumers.

Equally important is the coherent and robust framework which enables inventors and innovators to commercially benefit from their innovation outputs. In a high-technology sector, such as telecommunications, this also includes internationally coherent standardisation processes and good governance rules for patents (a subset of which are standard essential patents). It is considered that all foundations relating to international technical cooperation, and international trade should remain intact within the domestic setting. Coherence at a global level is achieved by international co-ordination within the international standardisation bodies, such as United Nations' ITU and ETSI, specifically in the telecommunications sector.

Fraunhofer respectfully requests that the TRAI does not take a false premise as the basis for policy intervention. The licensing of standard essential patents works well in the main. While there have been a small percentage of negotiations which have ended up in court, most parties to a negotiation act in good faith and conclude an appropriate licence. This is good for business relations, less costly for business, and in the end, allows all to focus on delivering what is of benefit to society and consumers.

Mannheim 29.01.2016**,** *St Lawrence v. Vodafone* LG Düsseldorf, 31.03.2016, *Sisvel v. Haier* LG Düsseldorf 03.11.2015 and 13.01. 2016, *St Lawrence v. Deutsche Telekom and HTC*, LG Mannheim 27.11. 2015, *NTT DoCoMo v. HTC* LG Mannheim 29.01.2016, or the English decision of *Unwired Planet International Ltd v Huawei Technologies Co Ltd & Anor* [2017] EWHC 1304 (Pat) (07 June 2017). For the USA, see *Ericsson Inc v. D-Link Systems Inc* (773 F. 3d 1201 Fed Circ 2014); *CSIRO v. Cisco Systems* (809 F.3d 1295 Fed Cir 2015); *Core Wireless Licensing S.a.r.l v. LG Electronics, Inc. and LG Electronics Mobilecomm U.S.A., Inc.* (31 August 2015) Case No. 2:14-cv-912-JRG; and *SRI International Inc. v. Cisco Systems Inc.* (9 May, 2016) Civ. No. 13-1534-SLR.

The point here is good faith negotiations as part of an international commercial transaction – both parties are expected to share sufficient information with each other during the negotiation of a licensing agreement so that a real negotiation can take place within a reasonable time frame. The relevant parties are the patent owner or its agent, and the entity seeking to implement a standard which practices the relevant standard essential patents owned by the patent owner. Government policy should not dictate an attach point for royalties, and should not prescribe which entity is to seek a licence. To do so would interfere with market dynamics and the conduct of international business.

The suggestion that there needs to be a formula or mechanism to determine the basis on which standard essential patents be licensed on FRAND is rejected. Such an approach has been rejected as untenable[6], as there is no one methodology for valuing IP, and to attempt to foster a 'one size fits all' on IP owners would result in government regulation overriding the market and its dynamics. This is not considered to be conducive to a competitive economy.

European and Member State law also reflects this position: The European TTBER[7] states that it is legitimate to calculate royalties based on a final product base where licensed technology relates to an input incorporated into a final product. The EU Guidelines on the application of Article 101[8] provide that parties are able to take into account a number of elements for determining license fees including the incentive to innovate, sunk investments an R&D costs[9].

In light of the above, Fraunhofer calls on the TRAI to follow the established international practice and to refrain from providing any indication as to the royalty calculation base.

If one has regard to jurisdictions around the world, it has been consistently stated that there is no one methodology to be employed to calculate royalties. In the US, it has been expressly stated that there is no set of factors that serve as a talisman for royalty rate calculations.[10] To the extent that one court should mirror the analysis of other cases such as *Innovatio* or *Microsoft*, the US Court of Appeals for the Federal Circuit has specifically rejected that argument.[11] It has further noted that factors for consideration 'may also need to be adapted on a case-by-case basis depending on the technology at issue.'[12]

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6 See *CSIRO v. Cisco*, at 1303.

7 Commission Regulation (EU) No 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements (TTBER) Official Journal L93, 28.03.2014, p.17-23

8 Communication from the Commission — Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements (Guidelines) Official Journal C89, 28.03.2014, at pp 3-50.

9 See the Guidelines to Article 101, at paragraphs 8-9.

10 *Ericsson Inc. v. D-Link Inc. et al*, at *47 - 50.

11 *Ericsson Inc. v. D-Link Inc. et al*, at *49.

12 *Ericsson Inc. v. D-Link Inc. et al*, at *48.
The Court expressed 'no opinion on the methodologies employed in these district court cases (when determining a royalty award) – which may yet come before this court – or in their applications to the facts at issue there. The facts in those cases, and the decision-makers involved, differ from those at issue here (in *Ericsson Inc. v. D-Link Inc. et al*). We address only the record before us and what a jury must be instructed when RAND-encumbered patents ae at issue and the jury is asked to set a RAND royalty rate.' See *Ericsson Inc. v. D-Link Inc. et al*, footnote 8 at *50.

Concluding on the issue of RAND in *Ericsson Inc. v. D-Link Inc. et al*, the US Court of Appeals for the Federal Circuit held:

> *We believe it is unwise to create a new set of […] factors for all cases involving RAND-encumbered patents. Although we recognize the desire for bright line rules and the need for district courts to start somewhere, courts must consider the record […] and should avoid rote reference to any particular damages formula.*[13]

In Europe, the UK Court of Appeals recognised in *Unwired Planet v. Huawei*[14] the same principle – there is no prescribed way of calculating royalties and parties are free to negotiate the rate, in good faith. In addition, a recent study demonstrates that patent holders in the smartphone value chain do not exercise any meaningful monopoly power to raise prices.[15]

Fraunhofer strongly urges the TRAI to acknowledge the norms and principles of contract negotiation reinforced by the Courts in the United States, India and Europe, as discussed above, and thus, to refrain from providing guidance with respect to royalty calculation. To do so could very well distort sectors operating in the IoT-based markets.

The proposed other means of disrupting the licensing of standard essential patents (creation of a licensing portal, and disrupting the commercial practice of having non-disclosure agreements (NDA) in place) are not considered valid, feasible or relevant to the discussion regarding the licensing of standard essential patents. The FRAND commitment applies to all parties to a negotiation, and all are expected to negotiate in good faith. Having an NDA in place is considered normal commercial practice, endorsed by courts around the world.[16]

In conclusion, Fraunhofer considers that the Indian legal system is robust. Fraunhofer urges caution on any change to its intellectual property laws, access to justice, or commercial / competition laws, both local and those deriving through the operation of international treaties, law and norm.

To adopt any changes suggested in the Consultation Paper regarding the creation and licensing of standard essential patents would certainly have a negative impact on the Indian Government's investment and achievable return on investment in the research and development, such as with the Eight Telecom Centres of Excellence referred to in the Consultation Paper.[17]

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13 *Ericsson Inc. v. D-Link Inc. et al*, at *50.

14 *Unwired Planet International Ltd v Huawei Technologies Co Ltd & Anor* [2017] EWHC 1304 (Pat) (07 June 2017)

15 Galetovic, A., Haber, S., Zaretski, L., 'Is there an anti-commons tragedy in the smartphone industry?', Hoover IP2, Working paper series No. 17005, revised 1 August 2017. Available at: http://hooverip2.org/working-paper/wp16011/.

16 See, for example, the March 2017 decision of the Beijing IP Court in *Iwncomm v. Sony*. See also the UK decision of *Unwired Planet v. Huawei*.

17 See Consultation paper, at page 27.

1.2 The New Telecom Policy should encourage industry responsiveness to changing markets and technology

While preferential market access to domestic manufactured products may provide certainty regarding local participation in the market, such an approach appears to have had time-bound success before.

The link between local manufacturing capability is also related to R&D investment, international cooperation, lead times required for transitioning from an IP licensing-in environment to one where there is IP cross-licensing or IP licensing-out by Indian companies.[18] Fraunhofer respectfully encourages further targeted investment by India in R&D, and encouraging international R&D cooperation in order to build capability or build on already-existing synergies. Such an approach could likely assist Indian manufacturers finding it 'difficult to meet the pace of rapidly changing technologies, expenditure on Research and Development as well as marketing strategies as compared to their foreign counterparts'.[19]

Fraunhofer respectfully sees licensing in of IPRs is a legitimate business cost, and cannot be directly compared to the level of high-risk investment in R&D which results in the granting of IPRs.

Furthermore, studies demonstrate that payments associated with the licensing in of IPRs have not exceeded 3.4% of the value of mobile handsets over the past 15 years or so.[20]

1.3 Market Dynamics

Preferential market access raises strong concerns. It is stated that it is constrained to the government, public sector and their partners (both public and private). However, the government and public sector account for approximately 30% of India's ICT marketplace.[21] Preferential market access is a policy which distorts trade and in the long-run is deemed to harm the development of the national Indian market.

It is unclear how taxes on telecom equipment are linked with the security of IT-related industries. In any event, the paper does not appear to justify the assertion that 'India should aim at achieving self-sufficiency in telecom equipment manufacturing'. This does not appear conducive to international competitiveness.

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18 See Consultation Paper, at page 8.

19 See Consultation Paper, at page 9.

20 Haber, S; Galetovic, A: Zeretzki, L; 'A new Dataset on mobile Phone Patent License Royalties': See http://hooverip2.org/working-paper/wp16011/.

21 Ezell S., Atkinson R., *The Indian Economy at Crossroads*, The Information Technology and Innovation Foundation (ITIF), April 2014, at page 21.

2. Reactions to submissions available on the TRAI webpage.[22]

Fraunhofer notes, in agreement, several contributions, which:

1. underline the necessity for a healthy innovation ecosystem, as elaborated on in 1.1.B above;
2. advocate the need for a robust legal framework to support such ecosystem, as comprehensively underlined in 1.1.C above;
3. question the legitimacy and the long-term economic impact of the preferential market access in India, as queried in 1.2 and 1.3 above; and
4. address the question whether any country participating in international standard development and the international telecommunications sector is able to become 'self-sufficient'.[23] The stated aim to achieve 'self-sufficiency in telecom equipment manufacturing' in the Consultation Paper also needs to consider that this is an international industry, and that until Indian companies begin producing IP through R&D there will be a need to licence in IP.

Moreover, Fraunhofer notes, in agreement, several contributions, which:

1. find the Indian patent system as adequate, as also stated by Fraunhofer in response to Question 3 of the Consultation.[24]
2. recognise the developments in the Indian standardisation landscape and emphasise the relevance and importance of the international standardisation organisations, such as ETSI and ITU, as underlined in the Fraunhofer response to Question 4 of the Consultation.[25]
3. recognise that a FRAND undertaking is an undertaking to make IP accessible through a negotiated license on fair, reasonable and non-discriminatory terms. It requires good faith negotiation between the parties to conclude a license[26], as highlighted by Fraunhofer in response to Question 5 of the Consultation.[27]
4. underline the important role of the rule of law, which implies respect for WTO Agreements and recourse to all fundamental instruments, such as injunctive relief and the right to be heard, as well as the essential role of the courts and the necessarily

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22 http://www.trai.gov.in/consultation-paper-promoting-local-telecom-equipment-manufacturing?page=1

23 See Consultation Paper, at page 6.

24 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pg. 12, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf

25 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pp. 12-13, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf

26 See, for example, *Huawei v. ZTE; Ericsson v. iBall.*

27 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pp. 13-15, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf

voluntary nature of any dispute resolution mechanisms, as profoundly underscored in the Fraunhofer response to Question 5 of the Consultation.[28]

It is also observed that several contributions contain factually inaccurate or incomplete information about the standardisation context, FRAND commitment, and jurisprudence. We provide reactions to the most pertinent aspects herewith.

1. One contribution bases its statements on former US Administration policy assumptions, which are well-known not to be supported at law. The newly appointed United States Assistant Attorney General, Mr. Makan Delrahim, has recently taken a clear position on issues related to standard setting and competition law. Notably, Mr. Delrahim stated that hold-out by implementers poses a much greater concern than any potential actions by innovators, who are already vested in the innovation ecosystem.[29] Fraunhofer encourages the TRAI to critically assess the submitted contributions in relation to the reported statements by government officials who no longer hold office.
2. Several contributions mislead the Indian Authorities by presenting hold-up as a reason to restrict the current FRAND commitment. This is wrong for two reasons.
    a. Firstly, and as provided in the Fraunhofer response to the Consultation[30], it is confirmed in jurisdictions around the world that there can be no assumption of patent hold up or patent hold out. In the US, for example, there is the Federal Circuit decision of *Ericsson v. D-Link* (confirmed in the Federal Circuit decision of *CSIRO v. Cisco*) that there is no presumption that patent hold our or patent hold up, and if it is asserted and is causing problems, then it must be pleaded in court and the assertion supported by cogent evidence. The assessment is made on a case by case basis. Indeed, there is no presumption in fact or at law that patent hold-up[31], royalty stacking[32] or lock-in exist as the 'state of being'. 'Certainly something more than a general argument that these phenomena are possibilities is necessary[33].'
    b. Secondly, economic theorists have demonstrated the fallacy of hold-up, as a concept, discrediting it all together. Please consult the box below:

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28 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pp. 13-14, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf
Makan Delrahim, Assistant Attorney General, Department of Justice, Remarks at the USC Gould School of Law's Center for Transnational Law and Business Conference, Los Angeles, November 10, 2017, Available at: https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-usc-gould-school-laws-center:
"*I view the collective hold-out problem as a more serious impediment to innovation. Here is why: most importantly, the hold-up and hold-out problems are not symmetric. What do I mean by that? It is important to recognize that innovators make an investment before they know whether that investment will ever pay off. If the implementers hold out, the innovator has no recourse, even if the innovation is successful. In contrast, the implementer has some buffer against the risk of hold-up because at least some of its investments occur after royalty rates for new technology could have been determined. Because this asymmetry exists, under-investment by the innovator should be of greater concern than under-investment by the implementer.*"

30 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pp. 17, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf

31 'Patent hold-up exists when the holder of a SEP demands excessive royalties after companies are locked into using a standard.' *Ericsson v. D-Link*, at *7 - 8.

32 See *Ericsson v. D-Link*, footnote 8 at *50.

33 *Ericsson v. D-Link*, at *54, where the US Court of Appeals for the Federal Circuit addressed this.

The fallacy of hold-up.

- Patent holdup is not accepted as a 'state of being' in fact or at law. Its existence must be proven by the so alleging party in a court of law through the production of actual and cogent evidence, based on the facts of the case at hand. This was confirmed by the Court of Appeals for the Federal Circuit, which is the only court of appeals for patents in the United States. See*: Ericsson Inc. v. D-Link Inc.* (773 F .3d 1295 Fed Cir 2014) and *CSIRO v. Cisco Systems* (809 F .3d 1295 Fed Cir 2015).
- **Patent holdup theory is not a variant of holdup theory as developed in transaction economics theory.** ➔ Microeconomics is a science of mechanics and to capture those mechanics there are terms that are "words of art". Adapting the concept to a new setting is only acceptable if all elements of the definition are maintained.
- **Financial transaction economics defines very clearly what are the necessary economic factors for hold-up to occur:**
  - **Relations specific investment**
  - **Opportunism [opportunistic surprise]**
  - **Contract**
  - **➔ Without opportunism, there is no hold-up**.
  - An evident element missing from the standard-setting context in relation to potential holdup is the missing opportunistic surprise – both the patent and the fact that it is a Standard Essential Patent (due to the FRAND pledge in the SSO) are public information.

3. Certain contributions suggest that FRAND is unspecific and thus requires government regulation. These are incorrect propositions. FRAND commitment operates by virtue of well-established, tried-and-tested commercial principles and norms, which achieve the necessary legal framework, while providing flexibility to negotiating parties to achieve a compromise. FRAND is assessed on a case-by-case basis. For conducting standard essential patent licensing negotiations effectively and efficiently, we humbly restate our proposition to the TRAI[34] to consider the general framework for FRAND licensing negotiations, recently confirmed by the CJEU in *Huawei v. ZTE*.[35] Most importantly, the CJEU stressed that both parties: the licensor of standard essential patents and the potential licensee bear responsibility for the process. This also applies to the manner of driving the licensing negotiations: both parties are held responsible for moving the process and both will be held accountable for bad-faith delays.
4. In contrast to certain remarkably incorrect assertion, Fraunhofer respectfully notes that there is no assumption that ownership of IP results is a *prima facie* dominant position in a market and there should be no assumption that a SEP holder abuses any position in the market place, as underlined in the Fraunhofer submission[36]:

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34 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pp. 15, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf

35 For European Member State court decisions interpreting Huawei v. ZTE, see German decisions such as *One-Red v ASUS and Acer* LG Mannheim 29.01.2016**,** *St Lawrence v. Vodafone* LG Düsseldorf, 31.03.2016, *Sisvel v. Haier* LG Düsseldorf 03.11.2015 and 13.01. 2016, *St Lawrence v. Deutsche Telekom and HTC*, LG Mannheim 27.11. 2015, *NTT DoCoMo v. HTC* LG Mannheim 29.01.2016, or the English decision of *Unwired Planet International Ltd v Huawei Technologies Co Ltd & Anor* [2017] EWHC 1304 (Pat) (07 June 2017).

36 Comments of the Fraunhofer-Gesellschaft on the Consultation Paper on Promoting Local Telecom Equipment Manufacturing dated 18 September 2017 (Consultation Paper), pp. 21, Available at: www.trai.gov.in/sites/default/files/Fraunhofer-Gesellschaft_CP_PLTEM.pdf

a. Competition law and patent law have operated in harmony for many years. There is no inherent conflict between IPR and competition rules. Both aim to promote consumer welfare and efficient allocation of resources (EU Guidelines Art 101, para 7). The EU Guidelines must be applied in light of the circumstances specific to each case. This excludes mechanical application, and they must be applied reasonable and flexibly: para 3. The same approach is used for the EU Horizontal Guidelines. Furthermore, there is no legal presumption that patents grant any form of automatic monopoly over a market in the antitrust context: EU Guidelines Art 101, paras 3, 6, 7-9; Horizontal Guidelines Art. 269; *Huawei v. ZTE*; US FTC-DOJ 1995 Licensing Guidelines §2.3 and as amended in 2017[37]. Where necessary, courts will assess whether relevant parties are engaging in good faith negotiations according to commercial norms and law (*Huawei v. ZTE*) – this is a higher burden for parties to prove than the mere 'willingness' or 'unwillingness' of a party as set out in the IEEE policy.

b. Fraunhofer would like to underline that a recent study by the Hoover Institute shows that the cost allocable to IP licensing has remained stable over the past 15 years.[38] We strongly urge the TRAI to reconsider the use of statements, which are not based on the state of the law and practice.

5. Fraunhofer notes with concern that certain submissions take a purely regulatory approach to license terms. It must be underlined that the majority of licences in relation to standard essential patents are concluded through negotiation between the parties. There is no reason to disturb commercial relations, many of which run for many years due to the life of patents.

   a. Moreover, the suggestion that there needs to be a formula or mechanism to determine the basis on which standard essential patents be licensed on FRAND is rejected. Please refer to 1.1.c **above**.

   b. European and Member State law also reflects this position: The European TTBER[39] states that it is legitimate to calculate royalties based on a final product base where licensed technology relates to an input incorporated into a final product. The EU Guidelines on the application of Article 101[40] provide that parties are able to take into account a number of elements for determining license fees including the incentive to innovate, sunk investments an R&D costs[41]. Fraunhofer urges caution against such an approach.

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37 https://www.ftc.gov/news-events/press-releases/2017/01/ftc-doj-issue-updated-antitrust-guidelines-licensing-intellectual

38 See Galetovic, A., Haber, S., Zaretski, L., 'Is there an anti-commons tragedy in the smartphone industry?', Hoover IP2, Working paper series No. 17005, revised 1 August 2017. Available at http://hooverip2.org/working-paper/wp16011/.

39 Commission Regulation (EU) No 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements (TTBER) Official Journal L93, 28.03.2014, p.17-23

40 Communication from the Commission — Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements (Guidelines) Official Journal C89, 28.03.2014, at pp 3-50.

41 See the Guidelines to Article 101, at paragraphs 8-9.