

Global Competition for FRAND royalty setting: Europe, the UK, and China in SEP Governance

Competencia global por la fijación de regalías FRAND: Europa, el Reino Unido y China en la gobernanza de las patentes esenciales sobre estándares

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Abstract

Standard essential patents (SEPs) and licensing on fair, reasonable and non-discriminatory (FRAND) terms have ceased to be a private matter between holders and implementers to become a legal, economic and geopolitical phenomenon of the first order. This paper proposes four factors that explain the significance and orientation of SEP disputes, the national-industry factor, the geopolitical factor, the architectural factor and the factor of the internal balance between holders and implementers, and uses them as a framework for reading jurisdictional competition in FRAND matters. After characterising the types of implementers and holders and the different meanings of the FRAND commitment, the article analyses two salient manifestations of an emerging global governance: the judicial setting of global royalties and *anti-suit injunctions*. A comparative examination of the United States, the United Kingdom, Germany and China, together with the WTO DS611 dispute, reveals a structural tension between the territoriality of the patent and the international vocation of the standard, as well as the risk of court-imposed compulsory licences.

Keywords: Standard essential patents; FRAND; global royalties; *anti-suit injunctions*; jurisdictional competition.

Resumen

Las patentes esenciales para estándares (SEP) y las licencias en términos justos, razonables y no discriminatorios (FRAND) han dejado de ser una cuestión privada entre titulares e implementadores para convertirse en un fenómeno jurídico, económico y geopolítico de primer orden. Este trabajo propone cuatro factores que explican la importancia y la orientación de los conflictos sobre SEP, el factor de la industria nacional, el geopolítico, el arquitectónico y el del equilibrio interno entre titulares e implementadores, y los emplea como marco de lectura de la

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competencia jurisdiccional en materia FRAND. Tras caracterizar los tipos de implementadores y titulares y los distintos significados del compromiso FRAND, el artículo analiza dos manifestaciones señaladas de una gobernanza global emergente: la determinación judicial de regalías globales y las medidas antiproseso (*anti-suit injunctions*). El examen comparado de los Estados Unidos, el Reino Unido, Alemania y China, junto con el contencioso DS611 ante la OMC, revela una tensión estructural entre la territorialidad de la patente y la vocación internacional del estándar, así como el riesgo de licencias obligatorias de origen judicial.

Palabras clave: Patentes esenciales estándar; FRAND; regalías globales; *anti-suit injunctions*; competencia jurisdiccional.

1 Introduction

Global governance has become a familiar lens for legal phenomena that escape the traditional territorial frame. In the vocabulary of international relations, governance need not coincide with government: it denotes a system of rule sustained by shared goals and converging expectations rather than by the police powers of a central authority, and it can operate effectively even where no overarching institution stands above the actors concerned². The field of standard essential patents has come to exemplify such an order: a transnational domain governed without a central authority.

Standard essential patents (SEPs) are far from a new concern: for decades they have occupied courts, competition authorities and standardisation bodies. What is characteristic of the last decade is not their emergence, but the intensity and nature of the interest they generate. From a predominantly technical and contractual matter, resolved within the bilateral relationship between the patent holder and the implementer, SEPs have come to be understood as a simultaneously legal, economic and geopolitical phenomenon, and have risen to become one of the instruments in the strategic contest between industrial powers.³ The fact that authorities in numerous States have expressed their intention to regulate them is the most visible symptom of that shift.

The growth in their relevance has manifested across different dimensions. On the regulatory front, it suffices to contrast two initiatives: the ill-fated European regulation on standard essential patents, ultimately withdrawn,⁴ and the public consultations launched in the United Kingdom (2025)⁵ and India (2016).⁶ In the institutional sphere, international organisations such as WIPO and the WTO have incorporated the matter into their agendas: the former by fostering alternative FRAND dispute resolution through its Arbitration and Mediation Centre⁷

2. Rosenau & Czempiel, 1992, pp. 4-5

3. Colangelo, 2024, pp. 1-2; Padilla & Tuffin, 2024, pp. 210-212.

4. European Commission, Commission Work Programme 2025 (COM(2025) 45 final), announcing the withdrawal of the proposal for a Regulation on standard essential patents. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025DC0045&qid=1761126737792>.

5. UK Intellectual Property Office, public consultation on standard essential patents. Available at: <https://www.gov.uk/government/consultations/consultation-on-standard-essential-patents-seps>.

6. Mishra, 2026, p. 273.

7. The use of WIPO's mediation and arbitration system was already being proposed in 2014: see Contreras & Newman, 2017. For further details on the procedure, see https://www.wipo.int/export/sites/www/amc/en/docs/2022/wipo_adr_options_for_frاند_disputes_management_resolution.pdf.

and the WIPO Strategy on Standard Essential Patents 2024-2026;⁸ the latter as a forum for inter-State litigation, having received two disputes brought by the European Union against China in relation to SEPs (DS611⁹ and DS632¹⁰). In the judicial sphere, finally, that relevance is reflected in an increasingly dense body of case law in forums such as the English courts, the Chinese courts and the Unified Patent Court (UPC). The common denominator across these developments is that the fate of SEPs is no longer played out exclusively in the bilateral relationship between holder and implementer, but has become embedded in an emerging global governance framework. The term “global governance” is used here not in its institutional sense, a set of multilateral organisations or treaties, but to denote the de facto ordering of a transnational field that emerges from the interplay of the four factors analysed below, national industrial interests, geopolitical rivalry, the institutional architecture of competing forums and the internal balance between holders and implementers, an ordering of which the cross-border assertion of authority by national courts is a salient manifestation rather than its sole source.¹¹

It is against that backdrop that this article frames its central question. The argument is that the judicial setting of global royalties and *anti-suit injunctions* (ASIs) constitute the clearest manifestation of that ascent: both relocate the SEP dispute to terrain that transcends the bilateral holder-implementer relationship and situate it at the level of jurisdictional competition and global governance of the standard.¹² Where the patent is territorial and the standard is international, the fixing of a worldwide royalty rate and the order not to litigate abroad emerge as the instruments through which national forums project their authority beyond their borders.

The literature has addressed these questions from diverse angles: the regulatory oscillation in the United States between holder and implementer coalitions,¹³ the transition of the Chinese industry from net payer to net recipient of royalties,¹⁴ or the substantive shift in English law regarding the very conception of the patent right,¹⁵ alongside the already-mentioned jurisdictional competition over global rate-setting.¹⁶ Those analyses, however, remain largely sector-specific, and none examines the factors that, operating jointly, explain the origin, orientation and intensity of these disputes; filling that gap is the purpose of this article.

This article therefore reads the origin, consequences and possible solutions of SEP disputes as a global governance phenomenon rather than through the traditional bilateral logic; it clarifies the concepts essential to understanding the problem, namely the types of holders and implementers and the different meanings of the FRAND commitment; and it shows how those four factors, taken jointly, explain the orientation and intensity of these disputes.

8. WIPO Strategy on Standard Essential Patents 2024-2026. Available at: <https://www.wipo.int/publications/en/details.jsp?id=4719>.
9. WTO, DS611, China — Enforcement of intellectual property rights. Available at: https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds611_e.htm.
10. WTO, DS632, China — Determination of royalty rates of standard essential patents. Available at: https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds632_e.htm.
11. On global governance understood as ordering without a central government, see Rosenau & Czempiel, 1992; on the de facto ordering of a transnational field through overlapping legal authorities, Berman, 2012. On national courts as one of its manifestations, Slaughter, 2003 and 2004.
12. See Contreras, J. L., *The New Extraterritoriality: FRAND Royalties, Anti-Suit Injunctions and the Global Race to the Bottom in Disputes over Standards-Essential Patents*, Boston University Journal of Science & Technology Law, 25(2), 251-286, 2019.
13. Colangelo, 2024, pp. 5-7; Shivakumar, 2022, pp. 2-3.
14. Shivakumar, 2022, p. 2.
15. *Lenovo v. Ericsson*, 2025, para. 109; *Panasonic v. Xiaomi*, 2024, para. 79.
16. Contreras, 2019, *The New Extraterritoriality*, pp. 280-283; Padilla & Tuffin, 2024, pp. 209-212.

2 Why are seps so problematic?

The problematic nature of standard essential patents stems not from a single cause but from the convergence of three structural ones: the tension between patent and standard, the fragmentation of actors, and the indeterminacy of the FRAND commitment, all intensified by the growing economic, technological and geopolitical importance of these assets analysed later.

2.1 The structural tension between the patent and the standard

First, there is an inherent structural tension between the nature of patents and the nature of standards. The essence of a patent lies in the private right to exclude third parties from using the protected invention; conversely, the success and purpose of a technical standard, such as Wi-Fi or 5G, depend on its universal adoption and diffusion, which promote accessibility and interoperability and generate “network effects”.¹⁷ The FRAND commitment attempts to mediate between both poles,¹⁸ but once a standard is widely adopted, implementers become “locked in” to that technology: competition from alternative technologies disappears and the patent acquires market power it lacked before standardisation, enabling the holder to extract royalties in excess of the value of its technological contribution (*hold-up*).¹⁹ Conversely, implementers may opportunistically delay or avoid payment of the royalties owed (*hold-out*), exploiting market frictions and the limits placed on licensors’ ability to enforce their rights.²⁰

In the field of standardization, the United States, China and Europe each operate different standardization systems that either facilitate or restrain political interference. The United States has a system that is, in principle, decentralized, albeit subject to some internal control; China, by contrast, runs a government-directed system in which foreign actors participate only symbolically; and Europe relies on a structure of official bodies at both the national and regional levels²¹. This aspect is relevant for several reasons. First, the Chinese standardization system is an instrument of industrial policy and enables the deliberate inclusion of domestic patents in the standard²²; the other two systems, by contrast, are not closed to foreign participants. Second, the value of a SEP is bound up with the policies of the standard-setting organisations themselves, so that the standardisation process is itself far from neutral.

2.2 The fragmentation of actors: implementers and holders

Second, there has been an enormous diversification of the actors involved, which drives up transaction costs.²³ On the implementer side, the telecommunications market has historically been dominated by a small group of large device and network manufacturers with significant market power, such as Samsung, Apple and Chinese brands like OPPO, Xiaomi and Vivo.²⁴ The emergence of the Internet of Things (IoT), however, has changed this picture: the vast

17. European Commission, 2023, p. 8; Simcoe & Shampine, 2018, p. 102.

18. *Unwired Planet v. Huawei*, 2017, para. 7; European Commission, 2023, pp. 8-9.

19. Padilla & Tuffin, 2024, p. 195; Simcoe & Shampine, 2018, pp. 104-105.

20. Love & Helmers, 2023, pp. 1-2; Padilla & Tuffin, 2024, pp. 195-196.

21. Gibson, pp. 1413-1416.

22. Sokol & Zheng (2020, pp. 310-311)

23. Henkel, 2022, p. 10; Opany, 2025, p. 714.

24. European Commission, 2023, p. 10; Henkel, 2022, pp. 1, 3.

majority of new potential implementers are now small and medium-sized enterprises (SMEs) operating across highly diverse sectors, automotive, smart meters, medical devices,²⁵ which lack the technical expertise and legal resources to navigate licence negotiations.²⁶ The scale of the universe involved is considerable: SEPs could reach some 47,500 manufacturing implementers worldwide, and in the European Union 84% of them are SMEs.²⁷ To that fragmentation one must add an intense technological concentration: 90% of declared SEPs correspond to cellular communication standards (2G, 3G, 4G, 5G) and short-range standards (Wi-Fi, Bluetooth, NFC), followed at a considerable distance by information technology (5%) and audio and video compression formats (2%),²⁸ such that a single end-product, a connected vehicle, for example, must simultaneously integrate dozens of standards.²⁹

On the supply side, the landscape of SEP holders is equally heterogeneous and is typically classified according to business model. First are practising entities or large net licensors, such as Ericsson, Nokia or Qualcomm,³⁰ which invest heavily in R&D and participate in standards development, although some have reduced their manufacturing activities to focus strategically on licence monetisation.³¹ Second are non-practising entities (NPEs), ranging from universities and public research institutes to firms specialising in R&D, which derive income from royalty collection rather than manufacture;³² within them, patent assertion entities (PAEs), frequently termed “patent trolls”,³³ form a purely commercial sub-type that acquires third-party portfolios for the sole purpose of extracting licence payments or initiating infringement actions.³⁴ Finally, patent pools, such as Avanci or Sisvel,³⁵ aggregate the SEPs of multiple holders to offer joint licences in a single transaction, with the aim of reducing the high transaction costs in the market.³⁶ This heterogeneity on both sides of the market is, as will be seen, the raw material of the internal-balance factor examined later.

2.3 The indeterminacy of the FRAND commitment and opportunistic conduct

Third, there is a notable indeterminacy in the basic concepts underpinning the FRAND commitment. Standard-setting organisations (SSOs) require these commitments but do not usually define precisely what constitutes a fair royalty or how it should be calculated, leaving that burden to private negotiation and courts.³⁷ That indeterminacy explains why at least three conceptions coexist beneath the same formula: under the case law of the Court of Justice of the European Union, most notably *Huawei v. ZTE*, and of national courts such as the German ones, FRAND is understood primarily as a conduct requirement, imposing good-faith negotiation

25. European Commission, 2023, p. 10; Opany, 2025, p. 714.

26. Henkel, 2022, pp. 2-3; Opany, 2025, p. 714; SEPs Expert Group, 2021, cited in European Commission, 2023, p. 125.

27. European Commission, 2023, pp. 11, 78.

28. European Commission, 2023, p. 8.

29. European Commission, 2023, p. 9.

30. Henkel, 2022, p. 2.

31. European Commission, 2023, p. 11.

32. European Commission, 2023, p. 13; Zhang et al., 2024, p. 3.

33. Zhang et al., 2024, p. 3.

34. European Commission, 2023, p. 13.

35. Henkel, 2022, p. 2.

36. European Commission, 2023, p. 13; Siebrasse, 2024, p. 20.

37. Contreras, 2019, *Global Rate Setting*, pp. 704-705; Simcoe & Shampine, 2018, pp. 119-120.

under a structured protocol of offers and counter-offers;³⁸ from a second perspective, it operates as a restriction on the exclusive rights inherent in the essential patent;³⁹ and from a third, as a pecuniary liability regime, in which what matters is not the power of exclusion but the holder's adequate financial compensation.⁴⁰

That normative ambiguity further produces divergent procedures and FRAND criteria across national courts and enforcement bodies, capable of generating even contradictory decisions: for some jurisdictions the matter is primarily one of competition law; for others, it is contractual in nature; and for others still, it is both simultaneously. That divergence constitutes precisely the precursor to the forum competition analysed later in this article.

These three causes explain why the SEP conflict exists, and why it exists everywhere. What they do not explain is why each jurisdiction resolves it in one direction or another, why some forums systematically favour the holder and others the implementer. It is to that second question that the four factors developed in the following section respond.

3 The four factors explaining SEP disputes

As anticipated, four factors allow the importance and orientation of disputes over essential patents to be explained: the national-industry factor, the geopolitical factor, the architectural factor, and the factor of the internal balance between holders and implementers. Although the first and fourth factors are related, they operate at different levels: the national-industry factor captures the aggregate net position of the country in the royalty chain, whereas the internal-balance factor captures the heterogeneity of interests within it, and thereby explains why, where the aggregate position yields no unambiguous signal, the orientation of the forum becomes contested and unstable over time. Taken together, the four factors account for how a transnational field lacking any central authority is nonetheless ordered: they are the variables that determine which side each forum will favour and how durable that orientation will prove.

3.1 The national-industry factor

The position adopted by a country's authorities on standard essential patents depends, to a large extent, on the net position that its national industry occupies in the SEP royalty chain: that is, whether that industry is a net payer or net recipient of royalties.⁴¹ Large manufacturing and implementing economies, such as China, tend to take a more critical view of high royalties and apply competition law more decisively against alleged abuses of dominance in order to reduce the intellectual property costs of their local companies.⁴² It is therefore no coincidence that Chinese courts have, on average, set royalties substantially lower than those established in Western net-recipient countries, thereby consolidating China's reputation as an attractive jurisdiction for manufacturers.⁴³ These forums apply rates and conditions distinctly favourable

38. *Huawei v. ZTE*, 2015, paras. 61-67; Colangelo, 2024, p. 5, fn. 17; Habich, 2022, pp. 1361-1362.

39. Drexler et al., 2024, p. 650; *Lenovo v. Ericsson*, 2025, para. 18.

40. *Panasonic v. Xiaomi*, 2024, para. 79; Simcoe & Shampine, 2018, p. 121. In *Apple v. Motorola*, 869 F. Supp. 2d 901 (N.D. Ill. 2012), Judge Posner held that a FRAND royalty provides all the relief to which the holder of a FRAND-encumbered SEP is entitled, making injunctive relief inappropriate.

41. Shivakumar, 2022, p. 3.

42. Padilla & Tuffin, 2024, p. 211.

43. Colangelo, 2024, p. 10; Contreras, 2024, *Ericsson v. Samsung*, p. 355.

to the implementer: in the first 5G global rate set by a Chinese court, *OPPO v. Nokia* (2023), an aggressive regional discount of 61.42% was applied to sales in markets other than developed countries.⁴⁴ Likewise, in the recent ruling *Advanced Codec Technologies (ACT) v. OPPO* (2023), the Supreme People's Court set an extraordinarily low rate of just USD 0.008 per unit for the patents in dispute.⁴⁵ Even in the application of antitrust policies, the Chinese authorities required Qualcomm, as part of their landmark sanction, to reduce its royalty calculation base to 65% of the net selling price of mobile devices.⁴⁶ This entire package of measures reflects the clear economic and geopolitical interest of implementing economies in devaluing foreign essential patents in order to protect the profitability and competitiveness of their national manufacturing industry.⁴⁷

At the opposite end, countries whose major telecom champions are global SEP licensors, such as Sweden and Finland, home to Ericsson and Nokia, supported the withdrawal of the proposal,⁴⁸ favour robust enforcement of essential patents, a position they made plain during the legislative process for the ill-fated European regulation.⁴⁹ Between the two poles stands a third group: large industrial powers that are simultaneously large recipients and large implementers, paradigmatically the United States, where the orientation of the forum ceases to depend on the aggregate net position and is decided instead by the internal balance between coalitions examined below.⁵⁰

3.2 The geopolitical factor

Standard essential patents are economically valuable assets, but for some States they have also become strategic assets in the contest for global technological supremacy.⁵¹ Their economic and technological importance has multiplied with the Internet of Things, 5G and artificial intelligence, extending far beyond mobile phones to the critical infrastructure that will connect smart cities, autonomous factories, telemedicine and self-driving vehicles.⁵² As wireless technologies permeate every sector of the economy, the volume of declared essential patents has risen sharply, surpassing 75,000 patent families worldwide in 2021,⁵³ transforming control over SEPs into a matter not only of industrial competitiveness, but of national security and technological sovereignty among major powers.⁵⁴ In this contest, powers such as China and the United States see SEPs as an instrument for securing a leadership position for their own industries in future technologies, hence the controversy, on grounds ranging from national security to cybersecurity, surrounding new standards with a high proportion of Chinese essential patents.⁵⁵ The most visible expression of this dynamic is the embedding of SEPs within the technological competition between powers: from *China Standards 2035* to the securitisation of 5G and 6G, to

44. Liu, 2024, p. 9.

45. Hao, 2024, p. 124.

46. Sokol & Zheng, 2020, p. 310.

47. Colangelo, 2024, p. 11; Shivakumar, 2022, p. 3.

48. Kroet, Cynthia y CORLIN, Peggy. Séjourné canvasses governments on patents after dropped proposal. Euronews, 23 mayo 2025. at 18 junio 2026., European Commission, 2023, SWD(2023) 124, p. 11.

49. Colangelo, 2024, pp. 8-9; Padilla & Tuffin, 2024, p. 210.

50. Padilla & Tuffin, 2024, p. 210.

51. Colangelo, 2024, p. 1.

52. European Commission, 2023, pp. 82-83; Shivakumar, 2022, *Securing Intellectual Property*, p. 1.

53. European Commission, 2023, p. 9.

54. Colangelo, 2024, p. 2.

55. Bhandari, 2023, p. 21; Greenbaum, 2018.

SEP litigation understood as a further front in the technological trade war.⁵⁶ In the US case, this factor operates additionally as a unifying force: competition with China aligns, or would align, domestic implementers and holders around a common position that would otherwise pit them against each other.⁵⁷

3.3 The architectural factor

Each country possesses an institutional and doctrinal architecture that conditions the balance between holders and implementers. The conception of intellectual property rights is decisive here: Germany has been regarded as a particularly holder-friendly forum owing to its strong conception of patent rights and the broad availability of injunctions.⁵⁸ The United Kingdom, for its part, has sought to build through its court system a more predictable royalty-determination mechanism, albeit one that continues to evolve.⁵⁹ In the United States, *eBay v. MercExchange* (2006) subjected the grant of injunctions to a four-factor equitable test, ending their automatic availability.⁶⁰ This factor is also visible in the allocation of competences among domestic institutions: in the United States, the USPTO, the FTC and the Department of Justice all play roles in SEP policy, with positions that sometimes converge and sometimes diverge.⁶¹

3.4 The factor of the internal balance between implementers and holders

As noted, SEP implementers and holders constitute heterogeneous groups. Many of the largest implementers are the world's most powerful technology companies, Apple, among others, endowed with considerable capacity to influence domestic policy in the United States and other countries and regions, deployed across all spheres from academia to lobbying platforms.⁶² Against them, some holders are key and strategic companies in the development of new technologies; the paradigmatic example is Qualcomm, by virtue of its leadership in mobile chipset and modem design and its position as the dominant merchant supplier of baseband processors, reinforced by its extensive cellular SEP portfolio⁶³. This dynamic is reflected, for example, in the joint statements of US federal agencies, the Department of Justice, the USPTO, and later the NIST, which have oscillated with each administration (2013, 2019, withdrawal in 2022), alongside the shifting enforcement posture of the FTC.⁶⁴

This regulatory oscillation is not coincidental, but the direct reflection of an ecosystem suffering from a deep schism of interests: by hosting simultaneously the world's largest device manufacturers and technology giants whose business model depends on licensing their research and development, US institutions find themselves in a constant crossfire,⁶⁵ and policy swings

56. Colangelo, 2024, p. 1; Greenbaum, 2018.

57. Shivakumar, 2022, *Securing Intellectual Property*, p. 8; Teece, 2021, p. 5.

58. Colangelo, 2024, p. 16; Contreras, 2024, *Ericsson v. Samsung*, p. 355.

59. Jacob & Vangimalla, 2024, p. 148.

60. Mishra, 2026, p. 270; Simcoe & Shampine, 2018, p. 106.

61. Shivakumar, 2022, *Securing Intellectual Property*, pp. 2-3.

62. Teece, 2021, p. 6.

63. Lumenci, Qualcomm Patent Portfolio Analysis. Lumenci, 26 May 2025. Available at: <https://lumenci.com/patent-portfolio/qualcomm/>

64. Kieff & Grant, 2021, pp. 242-243.

65. Teece, 2021, p. 5.

towards mitigating *hold-up* or towards combating *hold-out* depending on which coalition exerts greater pressure at any given moment.

This same logic helps to explain the marked duality exhibited by jurisdictions such as the United States and the European Union: a decidedly “pro-holder” external policy alongside an increasingly “pro-implementer” internal policy.⁶⁶ At the international level, both act as staunch defenders of the intellectual property rights of their companies against Asian jurisdictions; the clearest example of this pro-holder foreign policy is the complaint brought by the European Union against China before the World Trade Organization (dispute DS611),⁶⁷ in which the EU alleged that China’s practice of issuing *anti-suit injunctions* (ASIs) deprived European SEP holders of the ability to protect their technologies and seek injunctive relief in foreign courts, constituting an unacceptable restriction on their exclusive patent rights under the TRIPS Agreement.⁶⁸ Domestically, however, these same powers have driven policies and reforms that severely restrict the bargaining power of patent holders, in practice favouring implementers.⁶⁹ as the literature notes, it is contradictory that while the West criticises China at the WTO for devaluing foreign patents, it simultaneously promotes an approach focused almost exclusively on mitigating the risk of *hold-up*, limiting the availability of injunctions and capping the rates that holders may demand.⁷⁰

In the European Union, the internal equilibrium is different but equally conflicted. Although European industry is a net recipient of royalties internationally, concentrated, as noted above, in two telecommunications companies,⁷¹ the overwhelming majority of the global implementers of these standards are headquartered outside Europe.⁷² Despite this clear structural advantage as technology suppliers, the European internal policy debate has fractured severely across different institutions and Member States.

This fracture became apparent when the European Commission in 2023 proposed a Regulation on SEPs motivated by the need to protect local implementers, particularly SMEs in the Internet of Things sector, from information asymmetry and high transaction costs.⁷³ However, this approach, characterised by its critics as a “pro-implementer” bias, generated intense opposition from countries home to major SEP holders (such as Sweden and Finland) and provoked serious tensions within the Council of the European Union.⁷⁴ Defenders of patent holders argued that weakening internal patent protection and restricting access to injunctions would end up devaluing European intellectual property and, in practice, subsidising large foreign implementers, especially Asian manufacturers, thereby compromising the region’s technological leadership and national security.⁷⁵

In this way, the institutional architecture and the relative weight of holders and implementers in each State’s economy shape domestic law and competition policy, and in

66. Colangelo, 2024, p. 18; Shivakumar, 2022, *Securing Intellectual Property*, p. 4.

67. Sikorski, 2024, p. 412.

68. WTO, 2025, WT/DS611/ARB25, pp. 27, 32; Sikorski, 2024, pp. 412-413.

69. Padilla & Tuffin, 2024, p. 195; Shivakumar, 2022, *Securing Intellectual Property*, p. 4.

70. Colangelo, 2024, pp. 11, 16.

71. European Commission, 2023, SWD(2023) 124, p. 8.

72. Colangelo, 2024, p. 10.

73. European Commission, 2023, COM(2023) 232, p. 8; Opany, 2025, p. 715.

74. Opany, 2025, p. 731.

75. Colangelo, 2024, p. 18; Drexler et al., 2024, p. 648.

turn the geopolitical posture with which these powers engage in the race for control of global technological standards.⁷⁶

4 Global royalties and anti-suit injunctions as a manifestation of global governance

A merely territorial approach to contemporary legal problems is increasingly limited, as evidenced by environmental, commercial, and tax disputes⁷⁷. This limitation is particularly evident in disputes concerning standard-essential patents. International standards and transnational patent portfolios operate across multiple jurisdictions, allowing several States to share jurisdictional authority and enabling their courts to review the same underlying matter.⁷⁸

Thus, the determination of global royalties and *anti-suit injunctions* are not exceptional within that international framework. These phenomena should accordingly be analysed in light of the four factors set out above. The relationship between them is dynamic and asymmetric: they are neither equally malleable nor do they operate with the same intensity. Of the four, the architectural factor is the slowest to change, for it is embedded in each jurisdiction's legal tradition and procedural design; shifting it in either direction ordinarily requires far-reaching judicial or legislative reform and meets considerable resistance. It is to this logic that, in the field of patent law generally, initiatives restricting the availability of the *injunction* or facilitating challenges to patent validity respond, such as the 2021 reform of § 139 of the German Patent Act or, earlier, *eBay v. MercExchange*⁷⁹.

In the specific field of standard essential patents, this dynamic is apparent in the European Union's proposed regulation⁸⁰ and in the UKIPO consultation. Both arise from the internal-balance factor, they are the contingent product of the contest between the holder and implementer coalitions, hence their reversibility, yet their purpose is to act upon the architectural factor, that is, upon each jurisdiction's institutional structure and, notably, upon the setting of global royalties. The degree of that impact differs, however: whereas the British consultation would indirectly facilitate the setting of global rates, through the *Rate Determination Track*, which would allow an implementer to request a global rate, the European proposal addressed the matter more directly, since the FRAND determination concerned a global licence and the aggregate royalty was worldwide in scope⁸¹. The difficulty of removing this factor by deliberate action is illustrated precisely by the fate of the European project: the Commission withdrew the

76. Colangelo, 2024, p. 1; Padilla & Tuffin, 2024, p. 211.

77. Berman, 2012, p. 6.

78. "Law often operates based on a convenient fiction that nation-states exist in autonomous, territorially distinct spheres and that activities therefore fall under the legal jurisdiction of only one regime at a time." Berman, 2012, p. 4.

79. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006); and, in Germany, the *Zweites Gesetz zur Vereinfachung und Modernisierung des Patentrechts* of 10 August 2021 (in force as of 17 August 2021), which introduced the proportionality defence into § 139(1) of the *Patentgesetz* (PatG).

80. European Commission. *Proposal for a Regulation of the European Parliament and of the Council on standard essential patents (SEPs) and amending Regulation (EU) 2017/1001*, COM(2023) 232 final. Brussels, 27 April 2023. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52023PC0232>

81. On the global scope of the FRAND determination and of the aggregate royalty under the proposal (Arts. 15–18 and 34), see Baron, 2023; and Picht, 2023.

proposal in February 2025 after years without reaching agreement, which confirms the inertial character of the architectural factor even where the political will to alter it is present⁸².

In light of the factors examined above, it is appropriate to consider two salient manifestations of jurisdictional competition in FRAND matters: the determination of global royalties and *anti-suit injunctions*. Patents have traditionally been territorial in character, a reality reflected in the international treaties and conventions that govern them. Technological standards, by contrast, have an international vocation. The friction between these two natures has turned the judicial setting of global royalties and anti-suit proceedings into strategically attractive alternatives.⁸³

4.1 Global royalties in standard essential patents

Global royalty determination consists of the judicial fixing of a FRAND licence royalty for a worldwide portfolio of essential patents. Global licences have emerged in some jurisdictions in recognition of a commercial reality: essential patents are typically licensed as a portfolio and on a global basis.⁸⁴ Its principal advantage is alignment with the commercial reality of technological standards and multinational firms, disputes are resolved comprehensively, and the heavy transaction costs and inefficiencies of litigating the validity and infringement of patent portfolios country by country are greatly reduced.⁸⁵ This practice does, however, carry significant legal and geopolitical drawbacks, beginning with its inherent tension with the principle of patent territoriality (enshrined in the Paris Convention), which has led critics to characterise it as having extraterritorial effects amounting to “jurisdictional imperialism” that undermines the sovereignty of other States and the principle of international comity.⁸⁶ As a practical consequence, this assertion of worldwide jurisdiction by national courts has unleashed an intense geopolitical rivalry characterised by a “race to the courthouse” and a “race to the bottom”,⁸⁷ aggravating commercial uncertainty and threatening the geographical fragmentation of standards conceived to be global.⁸⁸ From this critical standpoint, moreover, a global royalty imposed without the consent of one of the parties may operate, functionally, as a court-imposed compulsory licence of worldwide scope,⁸⁹ a risk which, as will be seen, reappears in connection with *anti-suit injunctions*.

Global rate-setting is the substantive prize in the competition between forums: a court’s willingness to fix a worldwide rate is a stance in itself, and each forum’s posture toward it directly expresses whichever of the four factors predominates there. Its reception across the four forums thus offers a first empirical test of the factors set out in Part 3.

The United Kingdom is the clearest expression of the architectural factor. In *Unwired Planet v. Huawei* the English courts reasoned that, given the international nature of the telecommunications industry and the parties involved, litigation country by country would be

82. European Commission. Commission Work Programme 2025 — “Moving forward together: A Bolder, Simpler, Faster Union”, COM(2025) 45 final, annex of withdrawn proposals. Strasbourg, 11 February 2025. <https://www.twobirds.com/en/insights/2025/the-eu-sep-regulation---dead-or-alive>.

83. The shift from a presumption of difference between separate sovereigns to a presumption of an integrated system is theorised in Slaughter, 2003, pp. 204-205 and 212-213.

84. *Unwired Planet v. Huawei*, 2020, para. 60.

85. Padilla & Tuffin, 2024, p. 197; *Unwired Planet v. Huawei*, 2020, paras. 36, 60.

86. Bonadio & Kansara, 2024, pp. 88-90; Contreras, 2024, *Panasonic v. Xiaomi*, p. 405.

87. Contreras, 2019, *The New Extraterritoriality*, pp. 280-281.

88. Padilla & Tuffin, 2024, pp. 209-213.

89. *Unwired Planet v. Huawei*, 2020, para. 57; Contreras, 2024, *Panasonic v. Xiaomi*, p. 406, fn. 50.

commercial “madness” and that a FRAND licence between global actors must necessarily have worldwide scope.⁹⁰ The forum holds no large national SEP portfolios; its worldwide attraction derives not from the net position of its industry but from a procedural design that turns a local *injunction*, the sanction awaiting the implementer who rejects the global licence,⁹¹ into the lever of a global rate.

In China it is the national-industry factor that does the explanatory work, and the case law ratifies it twice over. As to jurisdiction, the Supreme People’s Court in *OPPO v. Sharp* (2021) held that Chinese courts may set worldwide rates wherever China is the forum of “closest connection”, principal place of implementation, revenue generation or negotiation, without the jurisdictional agreement of both parties being indispensable.⁹² As to quantum, *OPPO v. Nokia* (2023) produced the first Chinese global rate for 5G technology under a differentiated regional scheme that, as described in section 3.1, fixes markedly lower rates for China and comparable economies, so that the rate level itself, and not only the assertion of jurisdiction, expresses the bias of a still net-paying industry.⁹³ That expansion has run in parallel with the transition of Chinese industry from net payer towards net recipient of royalties, reinforced by the cross-cutting geopolitical factor.

Two features set the Chinese forum apart from the others. The internal-balance factor, decisive in the United States, weighs least here: with the State present on both sides of the market, among holders such as Huawei and implementers such as OPPO or Xiaomi alike, and a centralised government, there is no genuine contest of rival coalitions of the kind that produces the policy incoherence seen elsewhere. And the architectural factor, generally the most inertial of the four, here adapts with unusual speed, as the anti-suit injunctions examined below will show.

The United States illustrates the architectural factor as a procedural constraint. In *TCL v. Ericsson* (2017) a federal district judge set a global FRAND rate using combined top-down and comparable-licence methodologies,⁹⁴ but the Court of Appeals for the Federal Circuit reversed, holding that the assessment of damages and royalties must respect the constitutional right to a jury trial.⁹⁵ The result is a forum far less amenable to a judge fixing a binding global rate without the parties’ consent, an architectural restraint that is also the institutional expression of the internal-balance factor: a forum split between implementer and holder coalitions can hardly project a unified rate-setting policy abroad.

Continental Europe, Germany, France and the Unified Patent Court, shows the architectural factor operating in the opposite direction to the English one. Rather than developing methodologies to fix an exact global rate, the case law rests on competition law and the abuse of a dominant position (Article 102 TFEU),⁹⁶ asking whether the parties have observed the good-faith negotiation protocol laid down by the CJEU in *Huawei v. ZTE* (2015).⁹⁷ Courts leave the arithmetic of the royalty to the parties, but the strong, quasi-automatic *injunction* available

90. Contreras — chapter 5, *Unwired Planet v. Huawei*: establishing UK jurisprudence of FRAND, pp. 61–78; *Unwired Planet* [2017] EWHC 711 (Pat).

91. Bonadio & Kansara — chapter 6, *Unwired Planet v Huawei*: global rate setting begins in the UK, pp. 79–95.

92. Ma, pp. 143–144 (*OPPO v. Sharp*).

93. Liu, p. 8 (*OPPO v. Nokia*, Chongqing)

94. Love, chapter 7, *TCL v. Ericsson*: top-down royalty calculations and jury verdicts in US FRAND cases, pp. 97–98.

95. Love, chapter 7, *TCL v. Ericsson*: top-down royalty calculations and jury verdicts in US FRAND cases, pp. 97–98.

96. Colangelo, 2024, p. 5, fn. 17.

97. Opany, 2025, p. 716.

against the “unwilling licensee”⁹⁸ keeps the holder’s leverage intact and renders judicial rate-setting largely unnecessary.

Read together, the four forums confirm the thesis: the procedural design that makes a forum attractive for global rate-setting (the United Kingdom), or unsuited to it (the United States, continental Europe), is the architectural factor at work, while China shows the national-industry factor pulling the same lever as its industry’s net position shifts. Global rate-setting is thus the substantive object of this emerging global governance, and the anti-suit injunction, examined next, is the procedural means of securing it.

The level of the rates, the weight given to the parties’ consent and the breadth of the asserted jurisdiction co-vary with the factors identified in Part 3, and it is precisely that divergence between forums, where the first global determination tends to control the entire dispute, that converts the choice of forum into a strategic decision and feeds the procedural escalation examined next.

4.2 Anti-suit injunctions

Anti-suit injunctions are court orders directed at a party subject to the jurisdiction of the issuing court, with the object of preventing that party from initiating, continuing or enforcing proceedings before a foreign court.⁹⁹ Although formally directed at the person rather than the foreign court, in practice they produce an indirect effect on the jurisdiction of that court, since they limit its ability to hear or give effect to a dispute already submitted to another forum.¹⁰⁰ Their traditional purpose has been to prevent *forum shopping*, the duplication of proceedings and the risk of contradictory decisions in transnational litigation.¹⁰¹ In standard essential patent matters, their significance has intensified owing to the territorial character of patents and the global dimension of FRAND disputes, in which a single controversy may produce simultaneous effects across multiple jurisdictions.¹⁰² In the terms of this article, the anti-suit injunction is the procedural weapon of the race to the courthouse described in the preceding section: where the first global determination tends to control the dispute, the measure serves to secure, or to neutralise, that temporal priority.¹⁰³

The measure originates in the equitable tradition of the common law, conceived to preserve the effectiveness of the jurisdiction of the court seised of the main proceedings;¹⁰⁴ civil law countries have traditionally received it with scepticism, as a potential interference with the jurisdictional sovereignty of another State,¹⁰⁵ a divide that explains the tension between forums that regard it as a legitimate case-management tool and those that perceive it as an undue restriction on access to justice and on the territorial exercise of industrial property rights.¹⁰⁶

Anti-suit injunctions relate to the four factors derivatively rather than autonomously. Unlike global rate-setting, which is the substantive stake, the ASI is an instrumental, second-

98. Opany, 2025, pp. 721-722.

99. Contreras & Eixenberger, 2017, p. 451; Tsilikas, 2021, p. 730.

100. Contreras & Eixenberger, 2017, p. 453; Zhang, Li & Yang, 2024, p. 2.

101. Contreras & Eixenberger, 2017, p. 451; Tsilikas, 2021, p. 731.

102. Tsilikas, 2021, p. 729; Zhang, Li & Yang, 2024, p. 2.

103. On the anti-suit injunction as an instrument of transnational litigation, and the choice between deference to the foreign forum and the presumption of an integrated dispute-resolution system, see Slaughter, 2003, pp. 206-209 (analysing *Kaepa v. Achilles Corp.*).

104. Contreras & Eixenberger, 2017, p. 452.

105. Colangelo, 2024, p. 10; Contreras & Eixenberger, 2017, p. 455.

106. Colangelo, 2024, p. 7; Tsilikas, 2021, p. 734.

order weapon whose function is to secure and defend exclusive control of it against rival forums. It therefore carries no bias of its own: it amplifies and shields the bias that the other factors have already produced in the rate-setting arena. The instrument runs in two directions, and that asymmetry is the hinge of the analysis. In China, the offensive ASI is structurally an instrument of the implementer-net payer: the party racing towards a low-rate forum and seeking to block the holder's foreign *injunction* is typically the implementer¹⁰⁷. In Germany and other jurisdictions, the holder's equivalent weapon is not the ASI but the *injunction* itself, reinforced by the anti-anti-suit injunction (AASI) and the anti-anti-enforcement injunction (AAEI), which protect its leverage against others' ASIs¹⁰⁸.

The national-industry factor best predicts who wields which. Net-payer forums deploy offensive ASIs to shield their implementers and entrench a low global rate, the Chinese pattern of *Huawei v. Conversant* and *Xiaomi v. InterDigital*,¹⁰⁹ while strong-holder forums turn to the defensive response. This is the clearest confirmation of the thesis of a forum that evolves with its industry: as China moves from net payer towards net recipient, its procedural posture is likely to shift from the offensive pole (the ASI) to the defensive one (the AASI/AAEI), a movement that should become equally visible in the *level* of the rates.

The geopolitical factor bears on the ASI more heavily than on any other FRAND instrument, because it openly pits one sovereign's courts against another's. The proof is that the conflict leapt from private litigation to inter-State dispute: DS611 turned China's ASI policy into a trade dispute before the WTO¹¹⁰. The factor operates as cross-cutting and, above all, as an intensifier: the ASI, AASI, and AAEI escalation is a reciprocal jurisdictional spiral. In the United States, moreover, the Chinese ASI functions as a cohesive force aligning domestic implementers and holders against a common external rival.

The architectural factor determines the availability and form of the instrument. The common-law equity tradition (United States, United Kingdom) possesses the ASI natively; continental civil law traditionally rejects it as interference with foreign sovereignty, hence Germany and France developed the AASI as a defensive reaction (*Continental v. Nokia, ICom v. Lenovo*),¹¹¹ while China, lacking a doctrine of its own, improvised one through the conduct-preservation measures of Article 100 of its Civil Procedure Law¹¹². Architecture also predicts direction: where the *injunction* is strong and quasi-automatic (Germany/UPC), the holder needs no ASI because it already holds the *injunction*; the forum instead develops AASIs to protect that lever. Where the forum sets global rates (UK/China), the ASI protects the rate-setting jurisdiction itself.

The internal-balance factor is the weakest link, since the ASI is a judicial-procedural rather than a regulatory instrument; but it explains one concrete phenomenon: policy incoherence in internally split forums. The United States has no unified ASI doctrine, the measure was granted

107. Colangelo, 2024, pp. 9-10. On the “race to the courthouse” and “race to the bottom” framing, see Contreras, 2019, p. 251 ff.

108. The AASI is necessary to counteract this interference and protect owner's ability to enforce its SEPs, see Rademacher (2024, p. 393).

109. Supreme People's Court, *Huawei v. Conversant*, Rulings No. 732, 733 and 734 (Part 1)/2019, 28 August 2020 (first Chinese SEP ASI); and Wuhan Intermediate People's Court, *Xiaomi v. InterDigital*, Ruling No. 01-169, 23 September 2019 (decided 2020). [Court orders, cited by docket; no pagination.]

110. World Trade Organization, *China — Enforcement of Intellectual Property Rights*, Panel Report, WT/DS611/R, April 2025; proceedings arising from the EU's request for consultations of February 2022.

111. For the continental defensive reaction, see, in Germany, *Continental v. Nokia* (Munich Regional Court / Higher Regional Court); and, in France, *ICom v. Lenovo* (Paris).

112. Article 100 of the Civil Procedure Law of the People's Republic of China (conduct-preservation measures).

in *Microsoft v. Motorola* and denied in *Vringo v. ZTE*,¹¹³ and that ambivalence is the procedural expression of a forum divided between coalitions, unable to project a single external policy, just as with rate-setting.

Two conclusions follow. First, the escalation of instruments, ASI, AASI and AAEL, and, in the UPC register, the anti-interim-licence injunction (AILI) deployed against the English interim licence, is at bottom the geopolitical factor turning the architectural differences between forums into an open arms race. Second, the ASI shares with global rate-setting the same deep structure: a judicial covenant not to sue that operates as a de facto compulsory licence and erodes territorial exclusivity. This is why the two appear together as the twin manifestations of an emerging global governance: global rate-setting determines the substantive terms of the licence, while the anti-suit injunction secures the forum in which those terms are set.

5 Conclusions

The analysis undertaken in this article confirms the initial hypothesis: standard essential patents have exceeded the limits of the traditional bilateral relationship between patent holders and implementers and have become an instrument of global governance. Disputes concerning standard essential patents can no longer be adequately understood from a narrow, bilateral perspective. Rather, they reflect the convergence of the structural complexities of both the standard-setting system and the patent system, as well as the often-divergent interests of holders and implementers operating across different industries, markets and jurisdictions.

The four factors examined in this article, the net position of the national industry, the geopolitical dimension, the legal and procedural architecture of each forum, and the internal balance between holders and implementers, offer an integrated explanation of why certain jurisdictions tend to favour one side over the other, and why such tendencies are neither fixed nor immune to change. Taken together, they reveal that the orientation of each forum is not the result of a single institutional preference, but of a broader interaction between economic interests, legal design, industrial policy and geopolitical considerations.

The comparative analysis of the United States, the United Kingdom, Germany and China also exposes a deeper structural tension: the territorial nature of patent rights on the one hand, and the inherently international vocation of technical standards on the other. This tension gives rise to one of the central risks identified throughout the article: that global royalty-setting decisions and anti-suit injunctions may, in practice, operate as court-imposed compulsory licences with extraterritorial effects. Such developments challenge the traditional limits of patent territoriality and raise broader questions about the legitimacy, coordination and consequences of unilateral judicial intervention in global FRAND disputes.

Recent developments nevertheless suggest a movement towards a certain rebalancing. The DS611 dispute before the WTO, the MPIA award, and China's formal retreat from its anti-suit injunction policy appear to indicate a degree of containment of the most aggressive instruments of jurisdictional capture. However, the fundamental question remains unresolved: whether FRAND governance will evolve towards a consolidated form of fragmentation, in which competing courts continue to define global licensing conditions, or towards more

113. *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 881–889 (9th Cir. 2012) (foreign anti-suit injunction upheld); *Vringo, Inc. v. ZTE Corp.* (S.D.N.Y. 2015) (anti-suit injunction denied); Contreras & Eixenberger, 2017, pp. 453-455

coordinated multilateral mechanisms. These may include alternative dispute resolution models or, more ambitiously, the still incipient idea of a global rate-setting forum capable of reducing jurisdictional competition.

Until such a framework is developed and consolidated, the interaction between national courts will continue to shape the global governance of standard essential patents. In that context, the competition between forums reflects deeper disputes over technological leadership, industrial policy and market access, and over the proper institutional design of the international patent system.

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