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PATENTS ON 5G STANDARDS ARE NOT MATTERS OF NATIONAL SECURITY

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Recent arguments for stronger patent rights, particularly on 5G wireless telecommunications technologies, are relevant to discussions of national industrial policy and economic development, but are not matters of national security.

For centuries, technologies ranging from repeating rifles to nuclear detonators have implicated national security and defense. Intellectual property (IP), to the extent that it affects the ability of manufacturers to supply or develop these technologies, likewise raises national security considerations. Recently, however, advocates have sought to link the acquisition and assertion of patents by U.S. firms in the consumer marketplace to national security. These arguments have been particularly pronounced in the context of 5G wireless telecommunications standards.

For example, in 2019, the U.S. Department of Justice Antitrust Division (DOJ), joined by the Department of Defense (DOD) and Department of Energy (DOE), intervened in an antitrust case brought by the Federal Trade Commission against Qualcomm, Inc., a supplier of wireless telecommunication chips. The DOJ argued, in response to a federal district court's imposition of an injunction against certain of Qualcomm's patent licensing and product sales practices, that "diminishment of Qualcomm's competitiveness in 5G innovation and standard-setting could harm U.S. national security."¹ A recent white paper likewise criticized governmental antitrust policies that recognized limitations on the ability of patent holders to block competitors from manufacturing 5G products, claiming that these policies "will diminish U.S. companies' ability to invest in research and development (R&D) and to compete in the global 5G ecosystem." The paper concludes, "these antitrust policies must be changed for the sake of U.S. national security."²

It is possible that patent and antitrust doctrines that place limitations on the ability of U.S. firms to acquire and enforce patents could reduce their ability to maximize profits at the expense of foreign competitors, domestic rivals or consumers. Yet whatever the economic reality may be, the notion that such doctrines could also compromise national security is misplaced.

¹ Brief for Department of Justice as Amicus Curiae Supporting Appellant at 32, *FTC v. Qualcomm Inc.*, No. 19-16122 (9th Cir. Aug. 30, 2019).

² Alden Abbott, et al., "Aligning Intellectual Property, Antitrust, and National Security Policy," released by the Regulatory Transparency Project of the Federalist Society, Mar. 10, 2021.

First, 5G and other international standards are open and available to all market participants. By their nature, they contain no national secrets or classified information. From a technical standpoint, any manufacturer in the world can reference such standards and sell 5G products to government and non-governmental customers.

As far as patents covering 5G standards, it is important to remember that the relevant international standards bodies require their members to license patents covering those standards to product manufacturers on terms that are fair, reasonable and nondiscriminatory (FRAND). The holder of a patent covering a 5G standard cannot prevent the manufacture or sale of a 5G product, so long as the manufacturer is willing to enter into a license on FRAND terms.

Even if a foreign patent holder violated its FRAND commitments and refused to grant licenses to U.S. suppliers, those suppliers could still manufacture and sell 5G products. The foreign patent holder's only recourse would be to sue those manufacturers for patent infringement. But the domestic manufacturers would have an airtight defense: the foreign patent holder committed to grant them a license to practice the asserted patents, and courts around the world will generally recognize this commitment.

Of course, FRAND licensing obligations only bind participants in the relevant standards bodies. So-called "outsiders" could also acquire patents covering 5G technology and refuse to license them to domestic manufacturers.³ Even so, the U.S. government can ensure the continued supply of products for governmental use under 28 U.S.C. § 1498. This important statutory provision permits the U.S. government and its contractors to manufacture, use and sell products covered by U.S. patents for governmental purposes. The patent holder's only recourse against such use is to bring an action to recover monetary royalties in the United States Court of Federal Claims. Thus, no matter what action a hostile foreign nation took with respect to patents covering 5G technology, the U.S. government could authorize domestic producers to continue to supply it with 5G products.

Fears have also been raised that weakening the patent strength of some U.S. firms could increase the influence of foreign firms on 5G standardization. As a representative of the DOD stated in *FTC v. Qualcomm*, "[w]ithout the voice of U.S. industry, other competitor nations could stifle standards that support innovation, competitiveness, and an open ecosystem – in favor of standards which would support the parochial goals of a single state-owned company." In a similar vein, the DOE expressed concern that enforcing the antitrust laws against a U.S. firm could "allow[] foreign-aligned firms to advance and drive the development and intellectual property underpinnings of international 5G standards instead of the U.S."

These concerns are also misplaced. First, international bodies typically adopt standards on the basis of consensus. In some cases, formal voting or balloting occurs. Thus, it would be difficult

³ See Jorge L. Contreras, *When a Stranger Calls: Standards Outsiders and Unencumbered Patents*, 12 J. COMP. L. & ECON. 507–540 (2016).

for a single firm or country to drive the adoption of a standard that included features that were objectionable to a significant number of participants. In fact, numerous examples exist in which international standards bodies have expressly *rejected* the inclusion of technologies intended to enable surveillance and other objectionable governmental activity.⁴

Moreover, despite the historical prominence of U.S. firms in some technology sectors, 5G standardization today is a collaborative, international effort that is not dominated by any single country. According to one peer reviewed 2022 study, authors from 135 different countries contributed to technical publications concerning 5G technology, with the greatest number from China and the U.S. a distant second.⁵ Likewise, according to another recent report, of the top ten firms holding patents covering 5G standards, only one is from the U.S., with the remainder from China, South Korea, Japan and Europe.⁶ Thus, changes to U.S. law are not likely to diminish U.S. leadership in 5G standardization, as 5G standardization is already an international effort that is not led by the U.S.

Claims have also been made that the U.S. patent system itself needs to be strengthened in support of national security. A brief recently submitted to the U.S. Supreme Court argues that judicial doctrines denying patents for "laws of nature", "natural products and phenomena", and "abstract ideas" are so indeterminate that they currently "render the U.S. patent system unstable and unreliable at its core across a spectrum of industries including those upon which the United States depends for ... its national security."⁷ In effect, this brief contends that the issuance of fewer patents in the U.S. harms national security, presumably because U.S. firms will obtain fewer patents than firms in other countries.

Yet this argument overlooks the fact that the United States, as a member of the World Trade Organization (WTO), extends "national treatment" to foreign applicants for U.S. patents.⁸ The U.S. and every other WTO member thus issues patents to domestic and foreign entities on equal terms. As a result, the majority of patents in the United States are now issued to foreign entities. In 2021, for example, of 374,006 issued U.S. patents, 198,730 (53.1%) were issued to foreign entities.⁹ And of the top ten entities granted U.S. patents in 2021, only three were U.S.-based entities, with the remainder from Japan, South Korea, Taiwan and China.¹⁰ This situation is not unique to the U.S., and is simply indicative of today's global technology markets. For

⁴ See Laura DeNardis, 37 IEEE Annals History Computing 72 (2015).

⁵ Magnus Buggenhagen & Kurt Blind, *Development of 5G – Identifying organizations active in publishing, patenting, and standardization*, 46 TELECOM. POL. § 3.1 and Fig. 1 (2022).

⁶ *Id.* at Table 3.

⁷ American Axle & Mfg., Inc. v. Neapco Holdings LLC, Brief of United States Senator Thom Tillis, Honorable Paul R. Michel, and Honorable David J. Kappos, as Amici Curiae in Support of Petition by American Axle & Manufacturing, Inc. for a Writ of Certiorari at 2-3 (filed Mar. 1, 2021).

⁸ Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

⁹ U.S. Patent & Trademark Off., Performance and Accountability Report - Fiscal Year 2021 at 205 (Table 6) and 215 (Table 10) (2022) (includes both utility and design patents).

¹⁰ Intellectual Property Owners Assn., Top 300 Organizations Granted U.S. Patents in 2021 at 2 (2022) (utility patents).

example, of the top ten applicants for European patents in 2021, only four were from Europe, with the remainder from China, South Korea, Japan and the U.S.¹¹ And one 2017 study found that in India, a country with approximately 150 domestic phone manufacturers, virtually all smartphone-related patents were held by European and U.S. entities.¹² Thus, for better or worse, a country's patent system is open to the world, and in today's interconnected global economy, there is little relation between a country's patent system and the economic benefit conferred on domestic firms. Accordingly, measures enacted to "strengthen" the U.S. patent system will likely accrue to the benefit of foreign entities to at least the same degree as domestic entities.

Finally, 5G and related technologies are intended for the commercial market – smartphones, automobiles, electricity meters and the like. While defense applications also exist for these technologies, defense applications exist for a vast array of raw materials and products from steel and vinyl to computers and office furniture. Seeking to boost the profitability of domestic producers falls within the realm of national industrial policy and may be debated as such. But the invocation of national security when purely commercial gains are at stake is both misleading and counterproductive.

¹¹ Eur. Patent Off., Patent Index 2021, Statistics and Indicators, Applicants (2022).

¹² Jorge L. Contreras & Rohini Lakshané, *Patents and Mobile Devices in India: An Empirical Survey*, 50 VAND. J. TRANSNATIONAL L. 1 (2017).