Standard Essential Patents and Legal Risks Across Industries

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Connectivity Standards Across Industries

The next industrial revolution will not only impact the smartphone and computer world but will spread to many more industrial verticals. Automotive, manufacturing, energy, health care, and MedTech are among the industries most likely to be impacted by connectivity, as they have high-value equipment that is constantly networked and needs to handle massive amounts of data. Standards such as 5G or Wi-Fi 6 (802.11ax) will connect industrial machinery and robots allowing for remote control, monitoring, and repair, as well as industrial automation. From smart grids to drone control, energy and utility, companies will rely on standards to handle massive data. Connectivity standards will be used by hospitals and medical equipment manufacturers to provide data to a variety of tablets and fixed machines, as well as to enable remote surgery. Enhanced monitoring and automation are likely to assist industries as diverse as agriculture and finance. Online shops will increasingly turn to virtual reality experiences. 5G based tracking will emerge in the logistic sector. Edge computing and low latency of 5G and the improved compression of the versatile video coding (VVC) standard will be used in the gaming business, as well as in general augmented and virtual reality applications. As transportation operators rely on connectivity standards to connect smart city infrastructure, media companies will boost mobile streaming speeds and quality. Over the next few years, when advanced cellular, wireless and video standards replace existing protocols, these developments will occur swiftly.

The aim of standardization is to disseminate and gain access to technologies. Standardized technologies can be adapted worldwide to enable innovative solutions to come together on a common platform. This contrasts with patents, which grant the rights holder a temporary monopoly on the technology to prevent third-party use. In view of antitrust laws, licensing a patent, the claims of which are essential to a standard, is considered to be an isolated market. If a standardized technology cannot be used without infringing the patent, the holder of a so called standard essential patent (SEP) retains a monopoly position for this technology. If a company participates in the development of a technology standard, it must therefore commit to license these patents to any implementer. However, to prevent a patent holder from demanding monopoly prices, licensing is subject to FRAND (fair, reasonable, and non-discriminatory) conditions, which cap the royalty at a reasonable rate.

It is anticipated that patent holders will actively monetize their SEPs covering standards such as 5G, Wi-Fi 6 or VVC in this fast-moving, high-investment environment. Any company adopting these standards must decrease operational risk and expense exposure by taking a proactive strategy towards SEPs rather than a reactive one. Many of the businesses that will adopt standards subject to SEPs, on the other hand, have little expertise in negotiating SEP licenses. Also, understanding the overall SEP landscape is critical for the smooth connectivity standard adoption, maintaining profitability, and protecting the capacity to sell new products and services with enough access to third-party patent rights. A series of webinars discuss how to count, refine and value SEPs for the three most relevant technology standards: Wi-fi 6, 5G and VVC. Not only does the industry often not understand the overall SEP landscape, but also there is no public database of verified SEPs and too often SEP licensees are approached by SEP owners with a portfolio of alleged SEPs without providing claim charts. While SEP determination conducted by subject matter experts can be extremely expensive, a recent

IPWatchdog webinar discussed making use of Artificial Intelligence (AI)-based SEP determination: Determining Essentiality for Standard Essential Patents: Challenges, Benefits & Solutions.

Smart Vehicles

The auto industry could be one of the first sectors to rely on connectivity standards, such as 4G, 5G or WiFi (eg, 802.11p wireless access in vehicular environments (WAVE)), which connect a vehicle to other automobiles, devices, buildings, traffic lights and roadsides. The transport sector as a whole will make use of connectivity for dynamic traffic management, intelligent parking and infrastructure to support the integration of autonomous vehicles into road traffic. While fully autonomous vehicles are likely to evolve over several stages, manufacturers are already implementing autonomous functions (eg, speed control and lane departure warning). Currently, automotive connectivity is mostly used for automatic emergency calls (e.g., eCall), smartphone signal enhancements, telematics and navigation. However, in the future, vehicles will rely more on connectivity technologies to be able to navigate complex traffic situations. Much like the mobile phone industry's transition from feature phones to smartphones over the past 10 years, the creation of new business models as platforms and market participants reassessment of profit distribution between companies, we will most likely see similar shifts within the automotive industry soon.

Smart Factory

The smart factory will be driven by disruptive technologies, such as AI-controlled robots, cloud-monitored machines, real-time sensors, automation technologies connected to the Cloud, and augmented reality, all of which will use connectivity standards to enable communication between all physical parts of a factory. This will allow manufacturers to more efficiently capture and access much larger amounts of data at significantly higher speeds. New inventions are expected to be the future backbone of production and related services. Further, most automation is expected to be used for work that is considered to be inefficient, unsafe, impossible or tedious for humans and all processes that require human interaction could be handled remotely. Thus, connectivity will enable a higher level of accuracy and productivity beyond human capability.

Smart Energy

The energy sector faces many challenges, many of which can be solved with new standards-enabled connected services and applications. As energy networks become smarter, connectivity will support machine-type communications (MTC) to protect, control and regulate networks. The demand for electricity will continue to increase in the wake of electric mobility as the increasing number of smart meters can only be managed through a high capacity, high bandwidth, connected infrastructure. Further, real-time information on energy consumption at home, at work or in traffic will allow users to make adjustments for efficiency. Finally,

intelligent connected systems will enable energy suppliers to balance and manage the demand for energy resources.

Smart Home

At home, the world focuses on connected solutions in the daily living. No matter if in stores or new apartments everyone gets in touch with smart home solutions such as smart climate control, lighting, beds, TV or smart kitchen devices as well as home security. Artificial intelligence powered user interfaces (UIs), including voice, gesture, and biometrics, will fuel the growth of smart home use cases over the next years. The variety of the home automation solutions are as complex as the landscape of relevant connectivity standard such as Wi-Fi 5/6, 4G/5G, Bluetooth and many more.

Smart Healthcare

Smart medical devices will improve many existing use cases, while creating new ones that are not covered by current technologies (eg, remote examinations and surgery). Due to lower latency and a higher capacity of technology standards, such as 5G or WiFi 6, healthcare systems will be able to offer intelligent remote monitoring for a higher number of patients. With high-performance technology standards, medical device users are increasingly confident that they can get the real-time data that they need and deliver high-quality care. Critical health services will be able to obtain instant information on a patient's condition (eg, HD-quality images, access to medical records and direct interaction during remote surgery.

SEP Licensing Will Depend on the Use Case

The While licensing SEPs in the telecom industry is well understood and 5G licensing negotiations with smartphone manufacturer will be comparable to those of 3G or 4G, licensing SEPs will be more difficult to navigate outside of the smartphone industry. What is more, each sector will apply connectivity differently, so licensing mechanisms will need to become more flexible as there is no one-size-fits-all model that will work across all industry verticals. The application of 4G and 5G in vehicles will differ greatly from implementation in smart phones, tablets and smart watches. Further, a uniform licensing model will not work. Instead, the SEP royalties for use cases (ie, smart home, smart factory, smart energy and smart vehicles) will likely need to be lower than those for smartphones. Although flexibility is vital, the industry must also find mechanisms that allow companies to aggregate and package the licensing of SEPs to avoid licensing inefficiencies that yield lengthy negotiations or patent litigation. Here, the industry must acknowledge that not all SEPs will be relevant for each 4G or 5G use case. Classifying how 4G and 5G technical specifications relate to different use cases is an important starting point to get a much more accurate picture about which standards and patents subject to these standards are relevant. In the end, SEP royalties must be based on where the patented technology creates value for the application of the standard.

Many industry experts find it difficult to predict how standards will be applied in different use cases. A car manufacturer will only implement connectivity standards if the enabled features add value and the standardized technologies are supported by the infrastructure. While the telecoms industry and large SEP-owning companies are experts in standards development and worldwide SEP licensing and royalty negotiation, other sectors, such as the auto industry, consumer electronics, industrial manufacturing, energy, and medical healthcare, among others, have yet very little knowledge about how to handle and license-in third party SEPs. IP professionals in these sectors will need to gain a better understanding of the SEP landscape, as they will need to implement patented standards and will thus at some point have to pay royalties. Standard setting is not only about developing the core technology layer of communication, but also about developing application layers. Here, industry experts with domain knowledge across industries where connectivity matters will need to look more closely at how standards are implemented, and which patented technology is being used. IP professionals as well as directors in standard development should bear in mind some key considerations:

- Future technologies that enable connectivity will increasingly rely on patented technology standards (eg, 4G and 5G, Wi-Fi, VVC, NFC, RFID and Bluetooth, among others).
- IP professionals should not only consider information retrieved from patent data, but also understand the number of patents declared for a particular standard as well as the number of patents that can be licensed from a patent pool.
- However, not all declared patents are essential and not all essential patents are declared. Patent declaration data needs refinement, filtering and SEP determination.
- IP professionals need to be aware that while the market for internet of things (IoT) standards such as 5G is fairly new, it is now time to be thinking about what the business will need two, five and 10 years in the future, and hand in hand with this, what the patent portfolio will need to support it.

For further information, please contact us.

IPlytics - The Gold Standard for SEPs and Standards

Empowering IP professionals to understand the complexity of patents and standards in the connected world.

IPlytics is the first solution on the market to bring together comprehensive, highly indexed technical standards information, declared SEPs, patent pools, global patents and standards contribution data, to provide industry-leading analysis on the past, present and future of standards-essential technology. Unlike other tools that are overly complex, IPlytics provides fast, intuitive access to patents and standards to empower the user to strategically align patent portfolios to protect innovations and proactively engage in continuous strategic portfolio development as it relates to SEP assets, for initiatives such as licensing, acquisitions and joining patent pools, or to understand the respective positions of the competition. The next technology revolution will connect everything making it even more challenging to understand how technologies and IP rights overlap. IP professionals need to rethink – even revolutionize – how to approach both patent and standards data, to provide business-ready insights for actionable decision making across the organization.