

# Who is leading the VVC patent race?



### Contents

The future of standardized video technology	3
The complex Video Codec SEP licensing landscape	4
The lack of transparent AVC, HEVC and VVC patent databases	5
Identifying AVC, HEVC and VVC undeclared patents	6
VVC standards contribution data	7
Ranking Video Codec Patent Leaders	8
Top HEVC and VVC-related patent owners by share of standard-related patent families	9
Top HEVC and VVC-related patent owners by share of standard-related patent families multiplied by the Patent Asset Index	11
Top contributing companies by the number of technical and incorporated VVC contributions approved by JVET	13
SEP Licensing Across Geographies – the licensor market	14
SEP Licensing Across Geographies – the licensee market	15
HEVC and VVC Standard SEP Licensors	16
HEVC/VVC Standard SEP Licensees	16
Author's Comment	17
Appendix	
About the Authors	18
About the Patent Asset Index	19
About LexisNexis® IPlytics	20
About LexisNexis® PatentSight+	20
About LexisNexis® Intellectual Property Solutions	20

### The future of standardized video technology

The latest video codec, Versatile Video Coding (VVC) (H.266), represents a significant leap forward in technology compared to its predecessors, HEVC (H.265) and AVC (H.264), as well as competing proprietary codecs like AV1 and VP9. Finalized in July 2020 and first integrated into hardware products in June 2021, VVC maintains comparable perceptual quality to previous codecs while achieving up to a 50% improvement in video coding efficiency. This enables support for ultra-high-definition formats such as 4K and 8K, along with high dynamic range. The term "versatile" in its name reflects its adaptability to new applications, as it was designed from scratch with this purpose in mind.

Several factors are driving the rapid expansion of transmitted video content. The widespread availability of high-speed internet and video streaming services, combined with the impact of global lockdowns due to COVID-19, has led to a surge in video streaming and conferencing. Consequently, streaming platforms like Netflix, Amazon Prime Video, YouTube, Disney+ and others have seen substantial subscriber growth. Also, Internet video consumption has shifted global spending to online video advertising, which has seen a significant increase driven by the rapid expansion of digital platforms and the shift in consumer behavior towards online video consumption. According to Statista, worldwide spending on digital video advertising was approximately \$45.9 billion in 2019 and is projected to reach \$120 billion by 2024, which goes hand in hand with the popularity of social media platforms like YouTube, Facebook, Instagram and TikTok, which are major channels for video ads.

Furthermore, emerging applications such as automated video monitoring of manufacturing machinery and robotics, and healthcare applications like remote surgery are poised to further increase the demand for video content. It is estimated that in 5 years, half of global video traffic will only be seen by machines, not humans, as VVC delivers video optimized for machine vision tasks such as camera vision for autonomous vehicles or industrial robots. VVC was specifically developed to address the increasing need for efficient video compression and to support diverse new applications. However, realizing the full potential of VVC and implementing the standard into next-generation products requires navigating the landscape of thousands of so-called Standard Essential Patents (SEPs). Holders of SEPs will request royalties from VVC-implementing manufacturers across industries, and SEP-related license fees must be calculated when manufacturers ship their products to the worldwide market.

<sup>&</sup>lt;sup>1</sup> https://www.statista.com/statistics/246567/global-online-advertising-revenue/



# The complex Video Codec SEP licensing landscape

Recognizing both the importance of the rapid adoption of VVC for global commerce and development and the potential challenges posed by complex SEP royalty structures, industry stakeholders formed the Media Coding Industry Forum (MC-IF) in 2018. The goal of MC-IF was to establish a single, comprehensive patent pool that would simplify the licensing process for VVCimplementing manufacturers. However, despite the efforts of MC-IF, no consensus was reached among its members on a single pool administrator. In 2021, two patent pool participants, Via LA (formerly MPEG-LA) and Access Advance (formerly HEVC Advance), launched separate pool programs for VVC. In addition to these initial patent pools, in October 2023, Avanci Video was launched, a patent platform that offers a one-stop offer for internet streaming companies licensing SEPs for AV1, H.265 (HEVC), H.266 (VVC), MPEG-DASH, and VP9. It is worth mentioning that Sisvel also offers a video pool program for AV1 and VP9 SEPs, and up until the merger of MPEG-LA and Via Licensing (today Via LA), MPEG-LA managed a pool program for MPEG-DASH that was closed 2 years ago.

The Avanci Video patent platform, unlike other patent pools, for the first time does not target video chip or video device manufacturers, but internet streaming companies such as Netflix, Google (YouTube), Disney, HBO, Tencent, Apple TV and many others; taking SEP licensing for video codec standards to a whole new industry. Licensing to internet streaming providers is considered lucrative, with statistics saying that 80% of all consumer internet traffic is streaming video, and 1.7 billion video subscriptions were estimated for 2023.

While the licensing landscape has become more fragmented, with multiple patent pools and platforms serving different portions of the industry, there is still potential for an efficient licensing regime with broad industry support, as multiple patent pools have historically coexisted for video codecs. For example, separate pools were offered for the widely used AVC (H.264) standard.





# The lack of transparent AVC, HEVC and VVC patent databases

When selecting a VVC patent pool to join or when negotiating a bilateral VVC license, both SEP owners and standard implementers must assess the size and robustness of each other's patent portfolios. The so-called commercial discussion in SEP licensing can be very complex. Identifying the VVC patent portfolio shares requires assessing both the patent owner's VVC patent portfolio (numerator) and the overall number of VVC patents (denominator). However, this task is complicated by the lack of comprehensive information on VVC, AVC, and HEVC patents. The patent declaration data for AVC, HEVC and VVC, mandated by standards bodies such as the International Telecommunication Union Telecommunication Standardization Sector (ITU-T), remains incomplete, as ITU-T does not require SEP owners to declare specific patents. As of March 2024, among the 43 VVC-declaring companies listed in the ITU-T patent declaration register, only 5 companies have submitted specific patent declarations. This means that only 5 companies provided lists of patent numbers declared to be potentially essential. The remaining 38 companies (88%) submitted "blanket" statements, indicating their willingness to license under fair, reasonable, and non-discriminatory (also referred to as FRAND) terms without declaring specific patent numbers. This indicates that 88% of the VVC patent portfolios are not publicly available on the ITU-T register. However, the VVC patent pool programs from Via LA and Access Advance do provide lists of patents verified by third parties as standard essential for VVC technology. Despite this, two-thirds of VVC patent owners have not yet joined one of the patent pools, and the public data about VVC patents remains incomplete. While the VVC patent lists from patent pools and specific ITU-T patent declarations can serve as a starting point, they are insufficient to provide a complete picture of the VVC patent landscape.

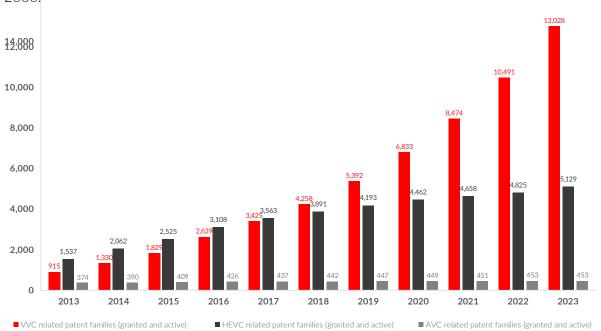
<sup>&</sup>lt;sup>2</sup> https://www.vitec.com/blog/editorials/adaptive-challenges-and-objectives-for-a-new-video-compression-standards/

# Identifying AVC, HEVC and VVC undeclared patents

To identify AVC, HEVC and VVC undeclared patents, LexisNexis IPlytics utilized the LexisNexis Classification powered by Cipher to identify video standard-related patents. The Cipher machine learning algorithm uses true positive examples (e.g., pooled AVC, HEVC, and VVC patents) and true negative examples of patents unrelated to these standards as training data to build a technology landscape. From this extensive patent landscape, random samples of patents are presented to subject matter experts to confirm AVC, HEVC, and VVC patents and identify those with no relation to any of these standards. New examples of true positive and true negative patents are then used as training data in an iterative approach to create a comprehensive technology landscape for AVC, HEVC, and VVC-related patents.

While this process identifies undeclared patents related to video codec standards, it is important to note that the AVC, HEVC, and VVC-related patent landscapes include both verified SEPs and non-SEPs—in other words, patents related to standardized video technologies that are not essential to the standard implementation.

Counting AVC, HEVC, and VVC-related patent families by the year of first patent publication (Figure 1) shows that the cumulative number of VVC patent families has rapidly increased over the past ten years (2013-2023). In contrast, the number of HEVC-related patents has remained stable over the past five years, and the number of AVC patents has remained stable for the past ten years. This patent trend aligns with the timing of standards development: VVC was developed between April 2018 and July 2020, HEVC between September 2010 and January 2013, and AVC between December 2001 and May 2003.



Source: LexisNexis<sup>®</sup>

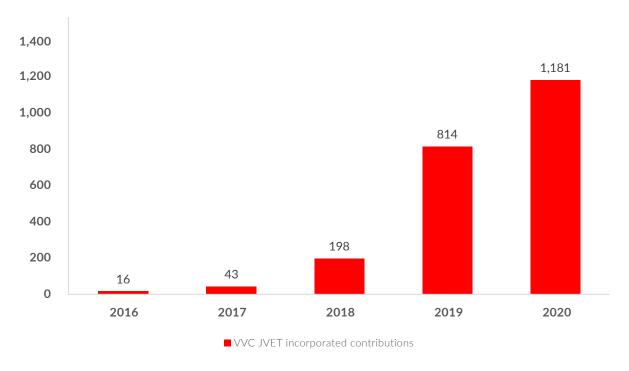
**Figure 1:** Cumulative number of worldwide active and granted (in at least one patent office) AVC, HEVC and VVC-related patent families by year of first publication.

#### **VVC** standards contribution data

One method for identifying leaders in VVC technology is to examine companies' involvement in the development of the VVC standard. Joint Video Experts Team (JVET) operates on a contribution-based model, allowing member companies to propose technical solutions for inclusion in the standard upon approval by the membership. The final VVC specifications are reviewed by all participants in VVC standardization, representing a diverse cross-section of global video compression expertise. Given that experts within JVET typically hail from competing companies, the process is both collaborative and competitive.

Significant contributions to the standard require substantial research and investment. Active participation in standards-setting activities enhances a company's credibility within JVET, enabling it to advocate for the inclusion of its technology in the standard. Therefore, the assessment of approved standard contributions serves as one metric for evaluating companies' share and influence in the development of standards like VVC.

Counting the cumulative number of VVC JVET incorporated contributions by publication year shows that the H.266 VVC standards were developed between 2016 and 2020, with most contributions incorporated in the final standard in 2020.

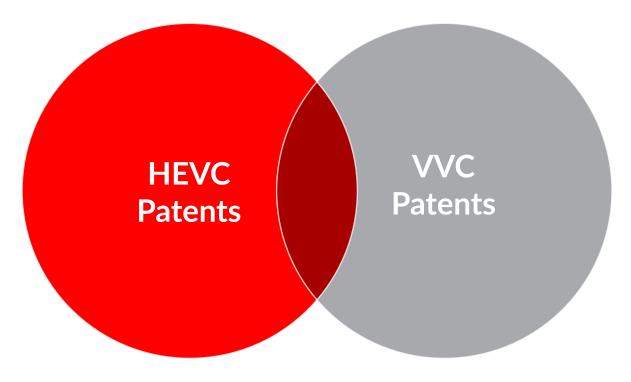


Source: LexisNexis®

Figure 2: Cumulative number of VVC JVET incorporated contributions by publication year

### Ranking Video Codec Patent Leaders

Unlike cellular telecommunications standards, video codec standards are not updated over time, and therefore, a standard such as the H.266 VVC has not changed since its publication on July 20th, 2020. Therefore, any patent with a priority date after the final VVC publication is either invalid or not essential. Keeping this in mind, the following VVC patent analysis limits the data to VVC-related patents with the earliest priority before June 20th, 2020. HEVC patents with claims covering fundamental video technologies may also be essential for the succeeding standard generation, VVC. Considering this overlap, Via LA has announced the extension of its HEVC program to include the VVC standard, combining both generations in a single offering . Figure 3 illustrates this overlap of patents across generations in a Venn diagram.



Source: LexisNexis®

Figure 3: Overlapping patents across video codec generations HEVC and VVC

Table 1 shows the top 20 ultimate owners of HEVC and VVC-related patent families, where at least one patent was granted in one of the worldwide patent offices. The rank tables show patent family shares in three different columns. The first column presents the counts of granted patent families related to both HEVC and VVC patents (the red, maroon and gray areas in the Venn diagram – figure 3) by ultimate owner. The second column presents counts of granted patent families related to VVC patents (the maroon and gray areas in the Venn diagram) by ultimate owner, including HEVC patents in case they relate to both generations. The third column presents counts of granted patent families related to only VVC-related patents, filtering out patents that are also relevant to HEVC (the gray area in the Venn diagram).

Table 1 illustrates that **Qualcomm**, **Huawei**, and **Tencent** are the leaders in video codec patents. Qualcomm and Huawei top the rankings when considering HEVC and VVC-related patents (columns 1 and 2), while **Tencent** ranks first when considering only VVC-related patents (column 3). Other prominent companies high in the ranks include **LG Electronics**, **MediaTek**, **Samsung**, **Interdigital**, **Sony**, **Canon**, and **Panasonic**.

**Table 1:** Top HEVC and VVC-related patent owners by share of standard-related patent families

Ultimate Owner	Region of HQ	HEVC & VVC related patent families (granted and active)	VVC related patent families (granted and active) allow overlap	VVC related patent families (granted and active) only VVC
Qualcomm	US	6.57%	7.30%	5.93%
Huawei	CN	5.48%	5.97%	6.47%
Tencent	CN	4.25%	4.95%	6.64%
LG Electronics	KR	4.87%	4.98%	5.68%
MediaTek	TW	3.09%	3.49%	3.62%
Samsung	KR	5.72%	5.64%	4.96%
InterDigital	US	3.21%	2.81%	2.34%
Sony	JP	2.94%	2.84%	2.45%
Canon	JP	2.38%	2.60%	2.32%
Panasonic	JP	1.59%	1.56%	1.60%
ETRI Korea	KR	1.71%	1.82%	1.81%
Nokia	FN	1.23%	1.26%	1.21%
Intel	US	1.02%	1.00%	1.01%
Microsoft	US	1.39%	1.18%	0.97%
Ericsson	SE	1.03%	1.06%	0.86%
Douyin	CN	1.56%	1.85%	2.50%
Dolby Lab	US	1.35%	1.15%	1.02%
Foxconn	TW	1.00%	1.13%	1.17%
Alphabet	US	1.98%	2.09%	1.85%
Hikvision	CN	0.75%	0.87%	1.14%
ПІКУІЗІОП	CIN	0.73%	0.07 /0	1.14/0

 ${\sf US}$ : United States,  ${\sf CN}$ : China,  ${\sf KR}$ : South Korea,  ${\sf TW}$ : Taiwan,  ${\sf JP}$ : Japan,  ${\sf FI}$ : Finland,  ${\sf SE}$ : Sweden

 $<sup>^{3}\</sup> https://www.broadbandtvnews.com/2024/04/05/via-la-extends-hevc-patent-pool-to-include-vvc/$ 

Table 2 shows the top 20 ultimate owners of HEVC and VVC-related patent families multiplied by the Patent Asset Index. The Patent Asset Index represents a measure of a portfolio's innovative strength. A patent family is more valuable when other innovations build on the technology protected by this family and the scope of protection that the ultimate owner considers appropriate. The index represents a patent family's individual strength and is obtained by multiplying the technology relevance (global citations received from later patents adjusted for age, patent office practices and technology field) and the market coverage (weighted market size protected by active patents and pending patent applications protecting a certain invention). It is stated relative to the other parent families in the same field. The Patent Asset Index methodology is based on years of scientific research and has been validated to correlate with a patent's value from the world's biggest patent holders across industries. While it correlates with a patent family's value, it cannot directly measure a patent's essentiality to HEVC or VVC. The Patent Asset Index patent family shares (table 2) increase for many ultimate owners of HEVC and VVCrelated patent families, especially for Qualcomm, MediaTek, Interdigital, Huawei and Tencent.

A patent family is more valuable when other innovations build on the technology protected by this family and the scope of protection that the ultimate owner considers appropriate.



**Table 2:** Top HEVC and VVC-related patent owners by share of standard-related patent families multiplied by the Patent Asset Index

Ultimate Owner	Region of HQ	Patent Asset Index for HEVC & VVC related patent families (granted and active)	Patent Asset Index for VVC related patent families (granted and active) allow overlap	Patent Asset Index for VVC related patent families (granted and active) only VVC
Qualcomm	US	18.05%	19.28%	16.63%
Huawei	CN	5.64%	6.16%	7.57%
Tencent	CN	4.80%	5.41%	7.69%
LG Electronics	KR	4.23%	4.49%	5.25%
MediaTek	TW	5.97%	6.61%	7.06%
Samsung	KR	4.93%	4.73%	4.17%
InterDigital	US	5.08%	4.45%	4.16%
Sony	JP	2.69%	2.41%	1.73%
Canon	JP	1.76%	1.96%	1.85%
Panasonic	JP	1.26%	1.17%	1.30%
ETRI Korea	KR	1.70%	1.85%	2.05%
Nokia	Fl	2.74%	2.77%	2.71%
Intel	US	0.79%	0.73%	0.72%
Microsoft	US	2.66%	2.10%	1.85%
Ericsson	SE	0.93%	0.88%	0.62%
Douyin	CN	3.57%	4.05%	5.80%
Dolby Lab	US	2.73%	2.03%	1.59%
Foxconn	TW	1.04%	1.14%	1.12%
Alphabet	US	1.38%	1.39%	1.33%
Hikvision	CN	0.48%	0.55%	0.74%

US: United States, CN: China, KR: South Korea, TW: Taiwan, JP: Japan, FI: Finland, SE: Sweden

Finally, we assess companies based on the proportion of their submitted contributions incorporated into the VVC standards. These contributions consist of technical submissions to the JVET consortiums that were approved by JVET to become part of the final VVC standard. While these contributions may or may not be subject to SEPs, tracking their count allows us to gauge the level of R&D invested in the development of VVC.

The contribution ranking correlates with the patent rankings presented in Tables 1 and 2. However, some companies have seen increases in their rank positions, notably Foxconn, Ericsson, Alibaba, and Intel, which are now among the top 10. The top three leaders, Qualcomm, Huawei, and Tencent, maintain their positions, affirming their leadership in both VVC patent data and VVC standards contributions. Additionally, Interdigital and MediaTek have climbed up the ranks, mirroring their increased shares in the Patent Asset Index ranking in Table 2.

The top three leaders, Qualcomm, Huawei, and Tencent, maintain their positions, affirming their leadership in both VVC patent data and VVC standards contributions.



**Table 3:** Top contributing companies by the number of technical and incorporated VVC contributions approved by JVET.

Ultimate Owner	HQ	VVC JVET incorporated contributions
Qualcomm	US	18.97%
Huawei	CN	18.71%
Tencent	CN	13.29%
LG Electronics	KR	8.72%
MediaTek	TW	9.48%
Samsung	KR	4.15%
InterDigital	US	6.10%
Sony	JP	2.79%
Canon	JP	1.44%
Panasonic	JP	4.66%
ETRI Korea	KR	1.44%
Nokia	FN	2.54%
Intel	US	4.83%
Microsoft	US	2.62%
Ericsson	SE	5.67%
Douyin	CN	10.75%
Dolby Laboratories	US	1.35%
Foxconn	TW	10.67%
Alphabet	US	0.00%
Hikvision	CN	1.02%

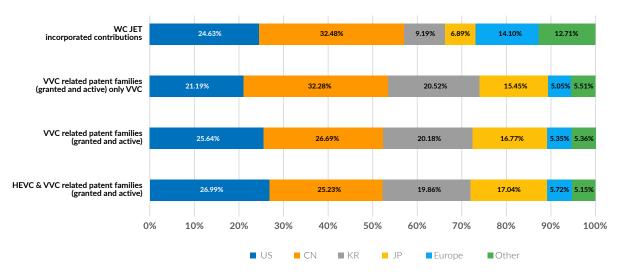
**US**: United States, **CN**: China, **KR**: South Korea, **TW**: Taiwan, **JP**: Japan, **FI**: Finland, **SE**: Sweden

# SEP Licensing Across Geographies – the licensor market

SEP licensing occurs across industries and geographies, as many companies produce and distribute their products internationally, and standards development involves innovating companies worldwide.

In Figure 4, HEVC and VVC-related patent families, as well as VVC incorporated contributions, are categorized by the region of the headquarters of the ultimate owner. Considering incorporated and technical contributions as the measure, Chinese and American companies collectively account for two-thirds of all VVC contributions. The counts of VVC-related patent families suggest a leading position for Chinese companies, while companies with their HQs in the US lead in HEVC and VVC-related patents. Korean companies' share of HEVC and HEVC/VVC patent families averages around 20%, Japanese companies around 16%, and European companies only around 5%.

#### VVC related patent families, VVC incorporated contributions by region of headquarter



Source: LexisNexis®

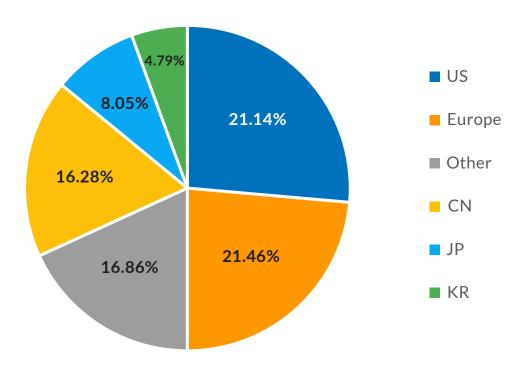
**Figure 4:** HEVC and VVC-related patent families, VVC incorporated contributions by region of headquarters.

Considering incorporated and technical contributions as the measure, Chinese and American companies collectively account for two-thirds of all VVC contributions.

## SEP Licensing Across Geographies – the licensee market

To identify the licensee market, we considered all companies that patent pools have listed as licensees in their HEVC and VVC patent pool programs, such as Access Advance, Via LA or Velos Media. Such SEP licensees are companies that implemented the HEVC or VVC standard in their products and took a license from one of the named patent pools. Here, most of the HEVC and VVC implementing companies come from the US or Europe, followed by Chinese companies.

#### **HEVC** and **VVC** licensees by region of HQ



Source: LexisNexis®

Figure 5: HEVC and VVC patent pool listed licensees by region of headquarter



#### **HEVC and VVC Standard SEP Licensors**

It is estimated that only one-third of the HEVC/VVC patents are publicly disclosed in specific patent declarations in the ITUT database or in HEVC/VVC patent pools. This leaves IP professionals to work with incomplete data. However, a comprehensive HEVC/VVC patent landscape is critical for successful SEP licensing. LexisNexis IPlytics' HEVC/VVC patent landscape reveals related patents that are not listed publicly, providing a more thorough understanding of the patent landscape.

### This enables patent portfolio managers to:

- Identify strengths/weaknesses of their HEVC/VVC patent portfolio
- Benchmark such portfolios against competitors
- Make informed decisions on portfolio development and maintenance

### Patent licensing departments use the landscape to:

- Present HEVC/VVC portfolio shares in SEP licensing negotiations
- Monitor market and ownership changes
- Focus resources on valuable, licensable patents

#### **HEVC/VVC Standard SEP Licensees**

Manufacturers of HEVC/VVC-compliant products should be prepared for patent holders and pools to request royalties. Additionally, internet streaming companies will now be approached to pay video codec SEP royalties based on streaming hours. Analyzing the HEVC/VVC patent landscape is essential to preparing for FRAND licensing negotiations.

Mapping out the numerators and denominators enables the determination of individual patent holders' and pools' share of all relevant HEVC/VVC patents. According to LexisNexis IPlytics' VVC patent landscape, about 30% of the identified VVC-related patents are controlled by ultimate owners who license their patents through Access Advance or Via LA. With this data, manufacturers can compare licensing offers and assess the relative value of different patent portfolios. Monitoring HEVC/VVC patent filing and ownership trends also helps quantify risks and forecast future royalty expenses. This includes tracking activity from patent assertion entities acquiring HEVC/VVC patents.

In summary, a comprehensive understanding of the HEVC/VVC patent landscape obtained through analytics provides manufacturers with information to negotiate royalties and effectively plan their IP budgets.

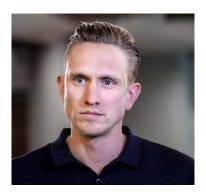
#### **Author's Comment**

Efficient video compression plays a crucial role in ongoing economic advancement worldwide. Currently, the bulk of video transmitted over the Internet is encoded using AVC and HEVC. However, as we approach the technological limits of these codecs, VVC is emerging as the next-generation solution to meet industry demands for video compression. The widespread deployment of VVC will inevitably bring up the issue of licensing VVC SEPs. Senior IP professionals should keep the following points in mind regarding VVC patents:

- Future technologies reliant on video will increasingly depend on patented technology standards like HEVC/VVC.
- Patent portfolio managers and IP licensing executives should not only rely on information from public registers such as pools or standards organizations but also monitor a comprehensive database on HEVC/VVC-related patents and standards contributions.
- VVC, like other video codecs, will be deployed globally, leading to considerations of the value and enforceability of SEPs across various jurisdictions. Senior patent managers should be aware that the legal landscape surrounding the enforcement of SEPs continues to evolve worldwide.
- VVC was finalized in July 2020, meaning that many patent applications disclosing VVC-essential technology have yet to be issued. Thus, the number of VVC SEPs is constantly increasing. Moreover, VVC's designers intended for the standard to be adaptable to new, unforeseen use cases.



#### **About the Authors**



Tim Pohlmann CEO and Founder LexisNexis® IPlytics

Tim Pohlmann is the CFO and founder of LexisNexis® IPlytics. He earned his doctoral degree with the highest distinction from the Berlin Institute of Technology, with a dissertation on patenting and coordination in standardization. He then went on to work as a post-doctoral researcher and consultant for the Law and Economics of Patents Group at CERNA, MINES ParisTech. In 2014 he founded IPlytics with the vision to overcome friction and complexity in data-led decisions in industries where standards and patents matter by being the transparent, accessible source of wisdom for all IP professionals. Tim has been actively involved in preparing empirical studies for the European Commission, the World Intellectual Property Organization and the German federal government on declared patents, standards contributions, patent transfers and patent pooling. He is a recognized thought leader, panel speaker and adjunct lecturer on the topics of Standard Essential Patents (SEPs), FRAND licensing, patent pools and advanced patent intelligence. He was again recognized in the IAM Strategy 300 Global Leaders list 2023 and is author of several peer-reviewed economist journal articles, several Managing IP articles, IPWatchdog articles, IAM Magazine articles, and some of the most-read IAM Media industry reports.

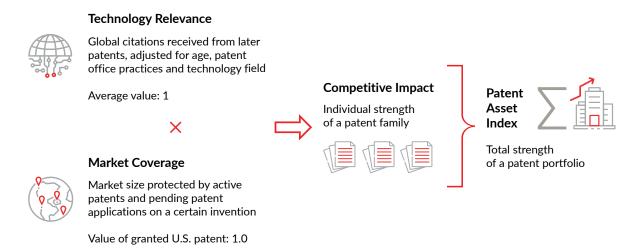


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Magnus Buggenhagen is a senior consultant and manager with expertise in patent analytics, standard essential patents, and standardization. His expertise has been honed through years of dedicated work, collaborating with prominent global enterprises to unravel the intricacies of patent landscapes and portfolios. His in-depth knowledge of standard essential technologies, combined with his holistic approach to patent evaluation, has positioned him as a go-to consultant for leading industry players seeking effective patent and standardization strategies, portfolio management, and informed decision-making. Magnus has an economics background focused on innovation, standardization, and experience in the consultancy and venture capital industry.

#### About the Patent Asset Index

The Patent Asset Index represents a measure of the innovative strength of a patent portfolio. A patent family is more valuable when other innovations build on the technology protected by this patent family and by the scope of protection that the patent family holder considers appropriate.



Ernst, H., Omland, N. (2011): The Patent Asset Index - A New Approach to Benchmark Patent Portfolios. World Patent Information 33, pp. 34-41.

Technology Relevance is a measure of the importance of a patent family and the technological invention it protects. It is calculated based on the total number of worldwide citations that are received from other patent families and is adjusted for the facts that (1) older patents are cited more often, on average, than younger patents; (2) international patent offices follow different citation rules; and (3) different citation practices are prevalent in different technology fields.

Market Coverage is measured as the size of the markets in which a patent family is protected, as benchmarked against the world's largest economy—the United States. In this context, the gross national income (GNI) of a country is used as a proxy for the relative size of its national market. Market Coverage is calculated based on granted and pending patents, adjusted for the patent family's protected market size.

Competitive Impact represents the individual strength of a patent family and is obtained by multiplying the Technology Relevance and the Market Coverage of each patent family. It is stated relative to the other patent families in the same field. For example, a value of three means that the patent family is three times as important as the average patent family in the field. The value obtained by adding up all the Competitive Impact values of all patent families constituting the portfolio is defined as the Patent Asset Index, which measures the overall strength of a patent portfolio.

The Patent Asset Index methodology is based on many years of scientific research and was validated in peer-reviewed academic publications and studies. Our patent analytics platform, LexisNexis® PatentSight+, featuring the Patent Asset Index, has been used for several years by leading companies in many industries, as well as governmental bodies and organizations, e.g., in antitrust consideration or merger clearances. Numerous companies trust the Patent Asset Index to illustrate the strength of their patent portfolios in annual shareholder reports and other stakeholder communications.

#### **About LexisNexis® IPlytics**

LexisNexis® IPlytics is a dynamic platform of patent and standardized technology intelligence, offering comprehensive insights and data-driven intelligence in standards-essential technologies. Built to address the intricate intellectual property landscape, IPlytics equips businesses, innovators, and decision-makers to navigate and excel in a rapidly evolving and highly competitive marketplace. The platform offers industry-leading analysis into the past, present, and future of standards-essential technologies providing fast, intuitive access to standard essential patents (SEPs), standards contributions, and standards documents. IPlytics empowers patent professionals to better understand the SEP landscape, align strategies and to make evidence-based and value-creating decisions in portfolio management and optimization, licensing, due diligence and joining patent pools. The platform's Al-based algorithms help to predict the essentiality of patent claims and standards sections as well as a patent portfolio's value for standardized technologies.

#### About LexisNexis® PatentSight+™

<u>LexisNexis® PatentSight+™</u> enables core IP activities such as competitive intelligence and benchmarking, portfolio optimization and more, by bringing together highly curated and enriched datasets, cutting-edge analysis tools with streamlined workflows and powerful visualization capabilities, all within a single platform. With PatentSight+™, enhance decision making with extensive data quality and coverage, provide a competitive edge with actionable insights powered by advanced Al-driven analytics, and elevate IP strategies with impactful communication tools.

#### **About LexisNexis® Intellectual Property Solutions**

In today's rapidly evolving landscape, IP professionals face the daunting challenge of navigating a complex intellectual property landscape on top of increasing cost pressures. These challenges demand clear, actionable insights to make strategic decisions with confidence.

Our mission is to bring clarity to innovation by providing the IP community with contextualized and evidence-based insights and analytics. We enable strategic decision makers to minimize risk and maximize the value of their IP using highly curated, enriched data sets and powerful solutions that leverage artificial intelligence, natural language processing, and compelling visualizations.

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