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Patent Issues

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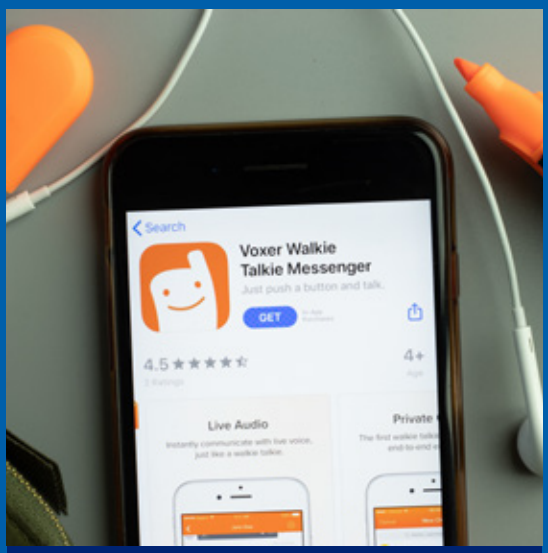

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Patents and the green energy transition

The European Patent Office (EPO) and the International Energy Agency (IEA) have published a joint study about global trends in clean energy technology innovation. The report encompasses over 70 pages of data and graphs taken from the last two decades of innovation from the database of the EPO. Patent databases provide a wealth of information on trends in technology, including those directed to Climate Change Mitigation Technologies (CCMTs) and to the ongoing investment in such technologies. Here we examine and summarize some of the conclusions of the report.

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The Formstein defence: the Gillette defence's meta cousin, and when is communication live?

By **Lucy Holt**

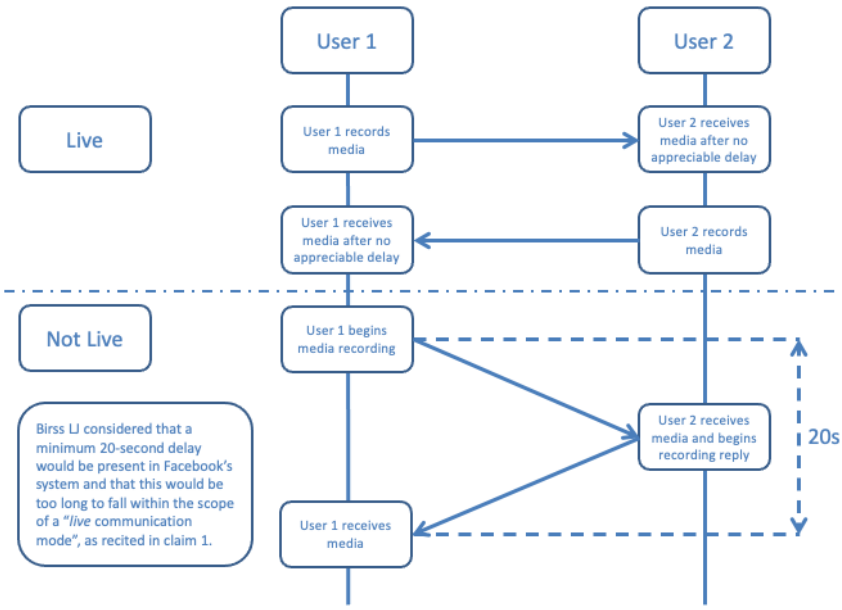
This High Court case concerned Voxer's European (UK) Patent No. 2393259 entitled Telecommunication and multimedia management method and apparatus. Facebook sought to revoke the patent on the grounds of lack of inventive step and lack of sufficiency. Voxer counterclaimed that Facebook's live video functionality, accessible via Facebook and Instagram, infringed their patent.

The case dealt with claim construction. Facebook relied on the glossary included in the patent to support their construction of terms. However, Birss LJ disagreed with Facebook's interpretation which only relied on the glossary. He considered that express definitions provided in the specification are relevant, but would rarely be determinative. Moreover, he considered that a glossary sometimes contradicts reality and is not intended to be limiting. Birss LJ commented that the natural meaning of the words of the claims, the specification as a whole and common general knowledge are also important when construing claim integers.

The extent to which claim amendments can affect the scope of a claim was also discussed. Voxer had made a post-grant amendment to claim 1. The UK IPO deemed this amendment to add subject matter. In order to address the UK IPO's objection, Voxer subsequently amended claim 1 to include a narrower feature, which was disclosed in the application as originally filed. Facebook argued that because Voxer had amended claim 1 to address the added subject matter objection, Voxer must have intended strict compliance with the language used to address the added subject matter objection. Birss LJ considered that, because the amendment was made to address internal validity (i.e. the amendment was not made in view of prior art), the amendment to introduce a narrower feature did not mean that Voxer intended strict compliance with the literal meaning of claim 1.

Claim 1 of the patent required a "live communication mode". Facebook allows a user to broadcast a "live" video to other users, which is typically used as a one–way route of communication. There is a 10-second built-in delay during broadcasting. Voxer asserted that this "live" video functionality fell within the scope of claim 1 and thus Facebook infringed the patent. Voxer reasoned that a first user could broadcast a "live" video and a second user, having viewed the video broadcast from the first user, could start a "live" video broadcast and the first user could immediately decide to view the second user's broadcast. Voxer also argued that because Facebook described the broadcasting as "live", then it must fall within the scope of the term "live communication mode".

Birss LJ considered that such back-and-forth broadcasting was considered to be a "conversation" and that a minimum 20-second delay would be present. Importantly, he considered that the minimum 20-second delay was too long to fall within the scope of a "live communication mode", as recited in claim 1. Thus, Facebook's "live" video functionality did not infringe the patent, directly or on the basis of equivalents. The fact that Facebook described their video functionality as "live" did not necessarily mean that Facebook's "live" broadcasting has the same meaning as "live" as specified in claim 1.



The Formstein defence relates to a situation where the defendant's device is:

a) found to infringe the patent by the doctrine of equivalents, but also;

b) found to lack novelty or be obvious over the prior art.

Facebook also advanced a Formstein defence to infringement. A Formstein defence is an extension of the Gillette defence to a case of equivalents. A Gillette defence requires the defendant to demonstrate that the alleged infringing device would have lacked novelty or inventive step at the priority date of the patent, under a normal interpretation of the claims. The Formstein defence was established under German law and has been followed in the Dutch Court of Appeal.

It was first discussed in the UK courts in Technetix v Teleste [2019] EWHC 126 (IPEC). The Formstein defence relates to a situation where the defendant's device is a) found to infringe the patent by the doctrine of equivalents, but also b) found to lack novelty or be obvious over the prior art. Facebook argued that because their system was obvious in view of the prior art for the patent, the patent's scope must be held to its normal construction, so they could not infringe the patent. Although Birss LJ was not required to consider the Formstein defence, he supported its use under UK law and considered how it should be applied. He stated firstly that if a claim on its normal construction was valid, then it seems harsh to invalidate it on the basis of equivalents. Secondly, he considered that the UK should recognise the Formstein defence because other EPC contracting states have done so.

In summary, Birss LJ held that the patent was not infringed either on a normal construction or when considering equivalents. Amongst other things, as set out above, Facebook's "live" video functionality did not provide a "live communication mode" within the meaning of claim 1 and did not store a copy of messages at each hop along the network path. He found that the patent lacked an inventive step and was thus invalid.

Patents and the green energy transition

By **Edward Belknap**

The European Patent Office (EPO) and the International Energy Agency (IEA) have published a joint study about global trends in clean energy technology innovation. The report encompasses over 70 pages of data and graphs taken from the last two decades of innovation from the database of the EPO. Patent databases provide a wealth of information on trends in technology, including those directed to Climate Change Mitigation Technologies (CCMTs) and to the ongoing investment in such technologies. Here we examine and summarize some of the conclusions of the report.

A key observation from the study is an overall growth in International Patent Families relating to low-carbon energy (as seen in Figure 1), which is significantly greater than the growth across technology in general (which has doubled across all sectors in that period).

As crude oil prices rose from the turn of the century to a peak in 2014, so the data from this study reveals an increase in innovation across fossil fuels and low-carbon energy technologies. High energy prices create an incentive for extracting oil and for making more efficient use of both oil and alternative energy sources.

The data reveals a small slump in International Patent Families relating to low carbon energy from 2015-2017. There may be several factors accounting for this. It may represent a natural pause following a phase of rapid innovation, or it may simply reflect a one-off adjustment following a fall in the price of crude oil from about $120 per barrel in June 2014 to about $40 in February 2016.

The study uses an "International Patent Family" (IPF) as a unit of measurement. This is a set of patent applications for the same invention that includes a published international application under the PCT or a published application at a regional patent office (primarily the EPO) or published patent applications at two or more national offices. This is considered a fairly reliable measurement of inventive activity, as it is not unduly swamped by activity in any one patent office (such as China) and neither is it skewed towards inventions that are filed by multinational companies in many patent offices.

The date attributed to an IPF refers to the year of earliest publication within the family. This is generally 18 months after filing. So a dip in IPFs in 2015 and 2016 corresponds to a dip in innovation and new filings in the period from about mid-2013 to mid-2015 and/or a lack in secondary patent filing from about mid-2014, which is just about the time the oil price began its descent.

From about 2016, innovation in fossil fuels and low carbon technologies can be seen to follow different trends. That year represents a low point in crude oil prices and, of course, the signing of the Paris Agreement. Upon adopting the Paris Agreement, participating nations are implementing policies to reduce carbon emissions, and it is encouraging to see from this report that LCE technological innovation is following suit.

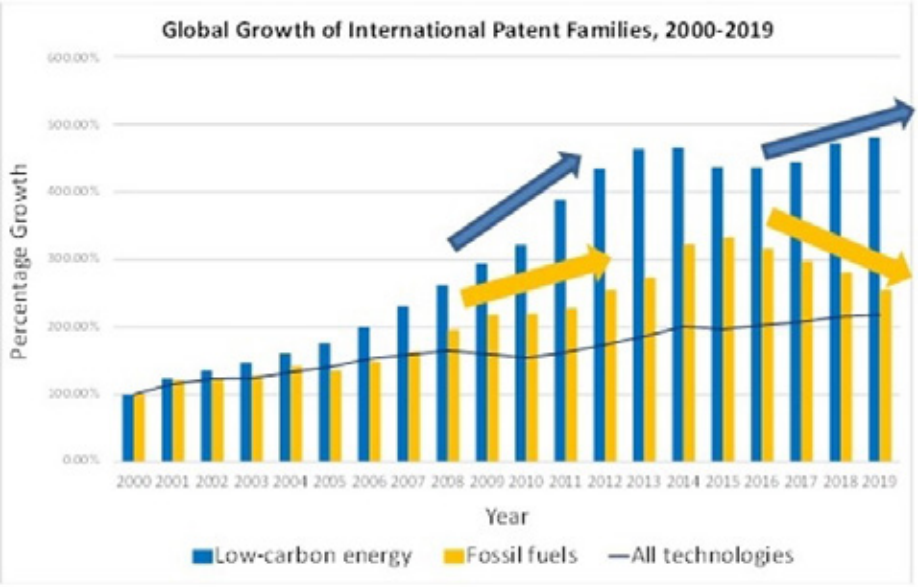


Figure 1

Just for comparison, we can also see a steadily increasing rise in IPFs across all technologies in the period in question. Indeed, there is a doubling of general innovative activity by this measure.

Importance of early stage technology in meeting Net Zero Targets

Another trend highlighted by the report is the global sector CO2 emission reductions by current technology readiness category in the IEA Development Scenario relative to the Stated Policies Scenario (as shown in Figure 2).

The figure shows a trajectory for emissions that is consistent with reaching global "net-zero" target CO2 emissions by 2070 as set out by the United Nations Sustainability Development Agenda (in line with the Paris Agreement). Four different stages of technology readiness are included:

- **Prototype**
- **Demonstration**
- **Early adoption and**
- **Mature**

The Sustainable Development Scenario is used to illustrate the technology needs for reaching net-zero emissions from the energy sector. It describes the broad evolution of the energy sector that would be required to reach the United Nations Sustainable Development Goals (SDGs) most closely related to energy. The trajectory for energy-related and industry-related CO2 emissions in the Sustainable Development Scenario is consistent with reaching global net-zero CO2 emissions from the energy sector in 2070.

The Stated Policies Scenario is a benchmark that assesses the evolution of the global energy system on the assumption that government policies and commitments that have already been adopted or announced are implemented. It includes commitments made in the nationally determined contributions under the Paris Agreement, such as the UK Government's commitment to net-zero emissions by 2050. The chart illustrates the technological shortfall in terms of CO2 reduction required to bring the cumulative government commitments towards long term sustainable development.

The percentage beside each layer of the chart denotes the cumulative emissions reduction by 2070 that each respective stage of technology development needs to deliver.

Representing a quarter of the needed cumulative CO2 emissions reductions, the mature technology stage represents existing technologies that require additional uptake to reach a sustainable pathway. This category is important in reducing cumulative CO2 emissions.

The "early adoption" technology stage on the chart represents technology that is currently being invested in, to be deployed in the next decade or is already in the early stages of deployment. This is perhaps the most important current technological stage, because it represents 41% of needed cumulative CO2 emissions reductions. These technologies will have the largest impact upon reaching the sustainable development pathway by 2070.

The "demonstration" technology stage represents technology that has either been proposed or is under review. The "prototype" technology stage represents technology that is currently being designed, built, and tested. Together, these technological stages represent 34% of the needed cumulative CO2 emissions reductions. These technologies are predicted to make a significant contribution by 2050, the UK's "net zero" target date.

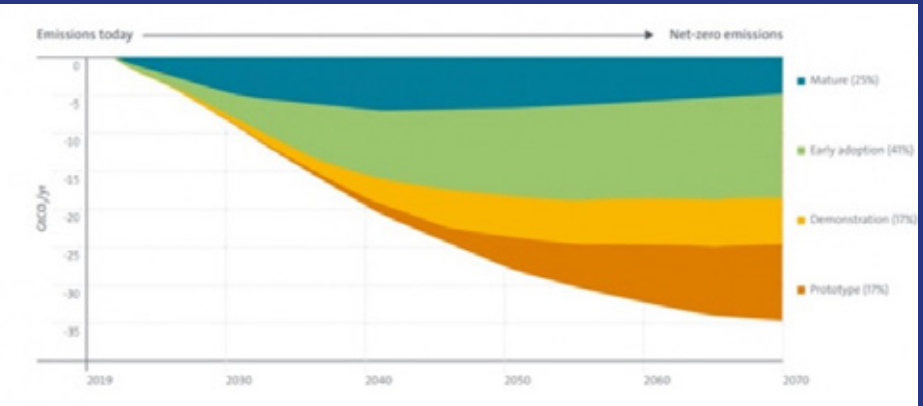


Figure 2

The data closely follows the expectation that the coming decade will be important for innovation in climate change mitigating technology. A further decade or more will be required for roll-out of new technologies on a scale that will achieve the government's net zero ambitions. If the innovation curve can be encouraged to follow a steeper initial trajectory, this early stage technology can make an even greater contribution to meeting net zero targets.

...an overall growth in International Patent Families relating to low-carbon energy, which is significantly greater than the growth across technology in general...

Where do patents come in?

We are sometimes asked "surely climate change mitigating technology should not be patented but should be free for the benefit of mankind?"

With a patent expiry date of 20 years after filing, all the vast expanse of technology invented in the 20th century is now in the public domain (with very few exceptions, mainly in the pharma industry)*.

All recently created technology will lose patent protection by about 2040 at the latest. It is increasingly difficult for mature technology to gain patent protection. Only incremental improvements can be protected. Patents create an incentive to invest in new technologies. Indeed, investors expect that patent applications will be filed for new technologies in which they invest. Patents give a time-limited period in which to recoup the up-front investment.

Conclusions

There is no doubt that this report shows an increase in low-carbon energy patent activity compared to all technologies and that there is a positive trend towards reducing CO2 emissions through technology. It is promising to see that patent activity relating to low carbon energy is supplanting patent activity relating to fossil fuels.

Two thirds of the cumulative CO2 emissions reductions needed to achieve sustainable development must be taken on by technology that is mature or is in the early adoption stage. To reach the UK goal of being net-zero by 2050 or the Paris Agreement goal of sustainable development by 2070, new technologies will be essential. The cycle to produce and advance new technologies must also be shortened.

In the '60s and '70s, there was enormous investment in a single transformative energy sector, i.e. nuclear. The investments envisaged in the forthcoming energy transformation are predicted to be similar in scale but spread across a far wider range of solutions. Patents will be vital in underpinning such investments.

**The maximum period is 21 years when taking advantage of the initial "priority" year, and the average lifetime of a patent is rather shorter – typically 13 years – because renewal fees are not always paid for the full patent term. Other forms of protection such as registered designs and utility models have different terms.*

Are satellites beyond the reach of patents?

By **Hugh Dunlop**

By **Elliot Krishek**

Low Earth Orbit (LEO) Satellites have been much in the news recently. OneWeb has already launched over 350 LEO satellites and SpaceX has launched over 1700 of its Starlink satellites. Both companies have plans for many more.

Each satellite is packed with innovation, and the question arises "are they beyond the reach of patent infringement?"

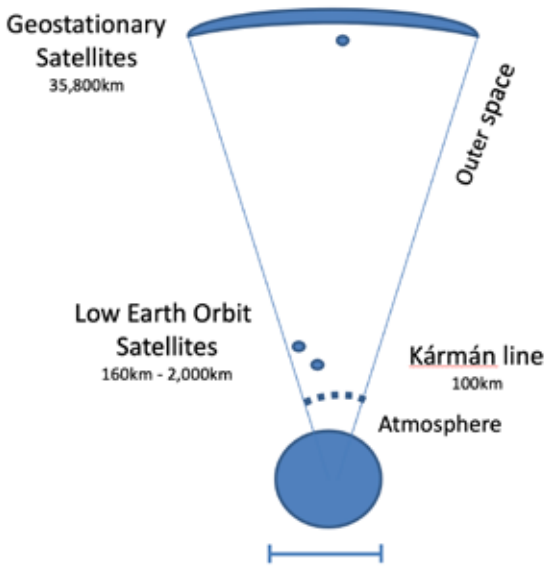
The United Kingdom Patents Act 1977, for example, says that a patent is infringed by certain acts done in the UK in relation to the invention without the consent of the proprietor of the patent while the patent is in force. There is an exemption (section 60(5)(e)) for aircraft and for vehicles that temporarily cross the UK, not limited to its airspace, but there is no specific exception for objects in space. So a number of questions arise, including the question of whether it matters if the satellite is geostationary and permanently in orbit over the UK or merely crossing the UK on a regular schedule.

The answer lies not in the Patents Act but in the Outer Space Treaty of 1967, of which 111 nations are signatories. The Treaty was primarily motivated by the desire to ban nuclear weapons in space and provides that the use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind. It provides that outer space is not subject to national appropriation by claim of sovereignty. But these lofty principles do not absolve satellite-launching companies from terrestrial laws. Ownership of objects launched into outer space is not affected by their presence there or by their return to the Earth, and states who are parties to the Treaty must carry on activities in the use of outer space in accordance with international law. In particular, states and their incorporated companies must register the objects they launch into space, and Article 8 of the Treaty provides that a state shall retain jurisdiction and control over an object in outer space if it has registered that object.

Can a satellite in space be "in" the UK?
First, let us clear up any doubt over what is meant by "outer space". Outer space is merely space beyond the effect of the Earth's atmosphere. The term applies to all space above the Kármán line, which is approximately 100 kilometres above sea level. Below the Kármán line, the Earth's atmosphere acts on an object to slow it down and cause it to fall closer to Earth and enter or re-enter the Earth's atmosphere. Below the Kármán line, objects can be steered by air deflecting surfaces such as rudders and ailerons. Above the Kármán line, they are in outer space and free from the atmosphere and remain so unless they are caused to move closer to Earth. Above the Kármán line, they are steered by retrorockets.

Outer space is all space beyond the Earth's atmosphere and is not subject to claim of sovereignty.

It is clear, therefore, that when an object is "in outer space" it has left the jurisdiction of any terrestrial nation and no state can claim jurisdiction over it, other than as provided by Article 8 of the Treaty. This is equally true for geostationary satellites. Geostationary satellites occupy orbits even more remote from the Earth than LEO satellites (see diagram). States cannot claim jurisdiction for geostationary satellites based solely on the territory above which they reside in orbit. An attempt in 1976 by certain equatorial countries to assert sovereignty over portions of the Earth's geostationary orbit that continuously lie over those countries did not receive international support and was abandoned.



Thus, UK courts retain jurisdiction over OneWeb satellites (launched from Russia) that are registered by the UK in the Space Object Register, and US courts retain jurisdiction over Starlink satellites (launched from Florida) that have been registered by the US.

Article 8 does not say that the state of registration has exclusive jurisdiction, although that would seem to be the intention. There are some states (e.g. Iran, Singapore) that do not register their satellites, but we are straying off topic if we ask whether some other state might claim jurisdiction for unregistered space objects.

Legally in the jurisdiction but not physically in the jurisdiction - why it matters

Although Article 8 of the Treaty provides that the UK retains jurisdiction over a UK-registered satellite, does this mean it is "in the UK" for the purposes of Section 60 of the Patents Act 1977? Does it mean that a person who uses that satellite (anywhere in orbit and indeed anywhere in the world) is doing so "in the UK"?

There are a number of reasons why this would not be the case. First, section 60 applies where an act of infringement occurs in the UK, which, by section 132, extends to the Isle of Man and the territorial waters of the UK but nowhere else. Second, there is the Outer Space Treaty itself, in which Article 1 states that outer space shall be free for use by all states in accordance with international law. Third, there are decided cases in which an act such as a contract to buy and sell goods is executed in the UK and is therefore within the jurisdiction of the UK courts, but in which there is no infringement because the goods themselves changed hands outside the UK (Sabaf v. MFI [2004] UKHL 45). Similarly, an offer to supply goods that is made within the UK is not an infringement if the offer is to supply the goods abroad (Kalman v PCL Packaging [1982] FSR 406).

Just for completeness, the Patents Act itself has its own exclusion from patent infringement for any relevant aircraft, hovercraft or vehicle "temporarily crossing the UK", and it is worth mentioning this exclusion if only to explain why it is not relevant. "Aircraft" is not applicable to an object above the Kármán line, for reasons set out above, and "vehicle" is not applicable to a satellite that is not conveying a payload, but in any case, both are limited in Section 60(7) to aircraft or vehicles that are registered in or belonging to a country ***other than the UK***. So the exemption does not apply to UK registered satellites.

The same approach applies elsewhere in Europe, with certain exceptions agreed under the International Space Station Intergovernmental Agreement. So, for example, Germany has modified its law such that activity relating to an element registered with the European Space Agency is deemed to have occurred in Germany for the purpose of the protection of industrial property rights.[1]

US Law has a specific extra-terrestrial or "long-arm" provision

Prior to enactment of the US Space Bill of 1990, US patent law did not extend to acts carried out in space.[2] Then 35 USC §105 was added, extending the applicability of US Patent Law to US registered space objects. The added section provides that, with exceptions relating to foreign registered objects: *"any invention made, used or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States for the purposes of this title".*

What about use of the satellite in the UK?

There remains another important way in which use of a satellite might infringe a UK patent, and this lies in how that satellite is used in the UK. Satellites are put into orbit for communications and at some point those communications originate from the Earth or are returned to the Earth. If the use of the satellite is in the UK, such use might be an infringement on the precedent established in Menashe v William Hill [2003] RPC 31, in which a claim to a gaming system for playing an interactive casino game was found to have been infringed by use in the UK even though an element of the claim (a host computer) was located in the West Indies. The Court of Appeal said: . . . "it is pertinent to ask who uses the claimed gaming system. The answer must be the punter. Where does he use it? There can be no doubt that he uses his terminal in the United Kingdom and it is not a misuse of language to say that he uses the host computer in the United Kingdom. It is the input to and output of the host computer that is important to the punter and in a real sense the punter uses the host computer in the United Kingdom even though it is situated in Antigua and operates in Antigua.

A punter who uses the William Hill system will be using the whole system as if it was in the United Kingdom. He will in substance use the host computer in the United Kingdom, it being irrelevant to the punter where it is situated."To rely on infringement on this principle of "use in the UK" it is important to have claims that are focussed

To rely on infringement on this principle of "use in the UK" it is important to have claims that are focussed on the activities in the UK and not, for example, on the satellite.

1. Certain Aspects of Intellectual Property Rights In Outer Space, Isabelle Bouvet, Faculty of Law, Air and Space Law Institute, McGill University, Montreal, November 1999, at page 39.
2. Hughes Aircraft Co. v. United States, 29 Fed. et 197 (1993), Journal of Space Law, 1996, at 18S, which concerned spacecraft launched prior to 1990.

on the activities in the UK and not, for example, on the satellite. Research In Motion v Motorola [2010] EWHC 118 is a case in which the steps taking place on the server outside the jurisdiction were non-trivial and there was no infringement.

We know of one attempt to bring a case in the US and the UK for infringement in relation to satellite-to-satellite communications, which is TRW v ICO Communications. In the US case, the claim called for launch of a constellation of satellites into a particular orbital shell (between about 10,000 km and about 18,000 km) and certain steps of orienting the satellites and of receiving signals from mobile handsets, with criteria for assignment of calls to or from users within the coverage overlap regions of departing and arriving satellites. The claims, if enforced, would present great difficulty in others deploying communications satellites within the specified orbital shell. The claims of the European patent were to a system that included a terrestrial handset (see European Patent EP0510789B1). The case was settled out of court, so we do not know how the different jurisdictions would have decided the territorial issue.

Conclusions

This brief article concludes that, once launched into space, use of a communications satellite is not "use in the UK" for the purposes of section 60(1) of the Patents Act, unless the claims have been drafted in such a way as to encompass a terrestrial user who perceives the use to be in the UK (under the precedent of Menashe v William Hill). The same applies across Europe but, as is often the case, a US patent can have greater value by its wider reach. This might have implications on choice of state for satellite registration.

We do not attempt to consider all the ways in which a satellite, as a product, might infringe a patent prior to launch and during launch. These questions will increase in importance with the opening of the SaxaVord Spaceport in the Shetland Islands.

As ever, it all boils down to what is claimed. Careful claim drafting with a keen eye on activities on Earth is all-important.

Consistency between Claims and Description – New and Onerous EPO Guideline may be Short-lived

By **John Parkin**

The European Patent Office (EPO) Guidelines for Examination section F-IV, 4.3 seeks to avoid inconsistencies between the description and the claims of a European patent application. It says any such inconsistency "must be avoided if it may throw doubt on the extent of protection and therefore render the claim unclear or unsupported."

This requirement was made more stringent in the 2021 Guidelines, which has led Examining Divisions to insist upon an irritating range of "tidying-up" amendments such as: adaptation of the specific description to replace "optional" language with positive statements, and excision of subject-matter not within – or combinable with – the scope of the allowed claims. Sometimes, Examiners request explicit statements that subject-matter is not within the scope of the claims. At Maucher Jenkins we generally avoid such statements.

Examiners have shown far more zeal in this regard than has been the case over the 40+ years since the EPC began, to the point where applicants are more frequently sending the allowed text back, with alternative wording, causing delay in the grant of patents and creating work for the office and representatives for no great additional benefit to the public.

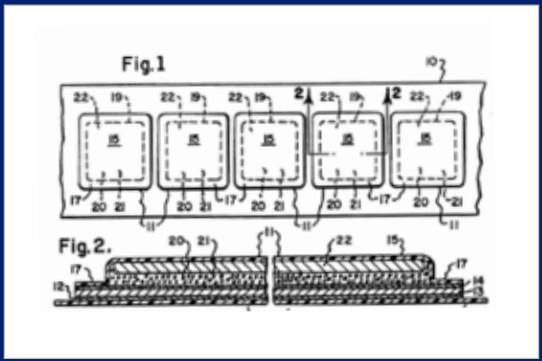
There is, however, renewed hope that this practice at the EPO may be short-lived. Board of Appeal decision T 1989/18, published at the end of 2021, found there to be no legal basis for refusing an application on the grounds that the description had not been amended in correspondence with the allowed claims.

What changed?

Nothing has occurred recently that prompted a need for a change, but the

Facts of T1808/06 - Oxygen-absorbing Label

The decision cited as basis for the new passage in the Guidelines related to an oxygen-absorbing label. In the course of opposition the patent was revoked but on appeal, the claim was amended to include a sheet of moisture-absorbing paper. The matter was remitted by the Board of Appeal to the Opposition Division to uphold the patent in amended form (Decision T139/01) but the opponents appealed again on the narrow basis that the description was not correctly adapted to the claims. The opponents' complaint was against a sentence in the description that said "the oxygen absorbing labels of the present invention are intended for use in either low-moisture or high-moisture environment." This was said to cast doubt on the scope of the claims, which, upon amendment to include moisture-absorbing paper, were said to be intended for high-moisture environment.



Let us say here and now that this seems to us patently absurd. If the invention is suitable for a high-moisture environment by virtue of its moisture-absorbing capabilities then, a fortiori, it is also suitable for a low moisture environment. But never mind, the point is that the Board found there to be an inconsistency and held that the Opposition Division should apply the same principles as the Examining Division in ensuring that the description is adapted to the claims.

Guidelines were expanded in March 2021 in light of a Board of Appeal decision (T1808/06) of February 2008.

Earlier case law confirms that the Opposition Division has the power to address clarity issues in the patent in the form in which it is to be amended and upheld, even though lack of clarity is not a ground for opposition. Board of Appeal 3.3.09 in T1808/06 expresses it as a responsibility, even a duty. And the words it uses are quite emphatic. Applicants are presented with only two choices:

1. reference to embodiments no longer covered by amended ***claims must be deleted,***

2. or, if such embodiments can reasonably be considered to be useful for highlighting specific aspects of the amended subject-matter, ***the fact that an embodiment is not covered by the claims must be prominently stated.***

Reaction to the New Guideline

Following from the change in the Guidelines, we have received numerous examiner amendments with insertion in the description that certain parts of the description are "not covered by the claims". This is highly vexing.

First, it is often not entirely clear, following an amendment, that a certain passage in the description is so incompatible with the scope of the claims that it can categorically be said not to be covered by the claims. The representative might invest hours of claim analysis to reach the conclusion that it is not as clear as the examiner believes. This is the role of the national courts when considering the application of Article 69 to the scope of protection. It can be a very complex matter involving detailed consideration of the doctrine of equivalents.

Second, the Applicant might well prefer to delete the passage in question rather than categorically say it is not covered by the claims. This at least leaves open the possibility that a national court might come to the conclusion that the alternative arrangement is indeed covered by the claims. But applicants are reluctant to excise matter from the text, primarily because none of us has perfect foresight to see what amendment might be contemplated after grant. One does not want to excise subject matter that might provide basis for a later amendment.

As can be seen from the above discussion, there are justifiable reasons for not wishing to accept either of the two options that the new Guideline says must be followed.

We, at Maucher Jenkins, have been counter-proposing to examiners a generic passage at the beginning of the specification along

the following lines: *In the following, each of the described methods, apparatuses, examples, and aspects, which do not fully correspond to the invention as defined in the claims is thus not according to the invention and is, as well as the whole following description, present for illustration purposes only or to highlight specific aspects or features of the claims.*

This wording was proposed to us by a particularly helpful examiner, and other examiners seem content to accept it.

New decision – new hope

Board of Appeal decision T 1989/18 was an appeal from a refusal by an Examining Division on the sole ground that some of the subject-matter in the description was broader than that of the independent claims, said to be contrary to the requirements of Article 84.

The Examining Division's refusal dates back to 2018, before the more stringent Guidelines for Examination were introduced. The Appeal hearing and the Board's decision are more recent and, though not strictly precedential, provide case law upon which future Guidelines may be based (or, perhaps, a referral by the President to the Enlarged Board of Appeal to resolve the inconsistency).

Board of Appeal 3.3.04 considered whether any legal basis exists for refusal of an application for the reason that the description is broader than the independent claims. Article 84 states that the "claims shall define the matter for which protection is sought. They shall be clear and concise and be supported by the description". The Board pointed out that Article 84 leads to a requirement that the "[c]laims must be clear in themselves when being read with the normal skills including the knowledge about the prior art" (based on T454/89). The Board went on to say "Article 84 EPC only mentions the description in the context of the additional requirement that it must support the claims. … if the claims are clear in themselves and supported by the description, their clarity is not affected if the description contains subject-matter which is not claimed."

If the claims are clear in themselves and supported by the description, their clarity is not affected if the description contains subject-matter which is not claimed.

The Board also considered Article 69 and Rules 42 and 48 EPC. Again, the Board found no basis in the EPC for refusal of the application. Accordingly, the Board allowed the appeal, and remitted the application to the Examining Division with an order to grant the application without the amendments to the description suggested by the Examining Division.

Comment

We fully agree with this latter Board of Appeal's decision: the claims, and not the description, determine the extent of protection of the granted patent (Article 69) and should clearly define the matter for which protection is sought (Article 84). Any description broader than the claims can be understood to be beyond the extent of the patent rights, rather than an alternative interpretation of those rights, because it is the claims which determine the extent of protection.

Reduction of the number and scope of amendments to the description is also to be welcomed in reducing costs for Applicants and improving efficiency in the granting process.

T 1989/18 provides legal basis to cite in support of reducing the number and scope of amendments to the description before the EPO, and we will look for a fall-off in the amendments made by Examining Divisions.

European Practice: Is there risk in dividing a claim into two-part form? How useful is it to cite prior art in a patent application?

By **Thomas Gangolf**

It is a requirement of the European Patent Convention (EPC) that a description for a patent application should indicate the background art which, as far as is known to the applicant, can be regarded as useful to understand the invention (Rule 42(1)(b) EPC). The application should, "preferably, cite the documents reflecting such art". Generally speaking there is no downside to adding to the description references to documents cited in the search report, but there are pitfalls if not done correctly.

Similar pitfalls are present when separating a claim into two-part form. This is a requirement of the EPC "wherever appropriate" and if the applicant does not separate the claim, the Examiner may do so in the text intended for grant. We therefore consider both of these issues in turn.

Prior art acknowledged in the description

Construction in the light of prior art - Validating construction, Purposive construction and Doctrine of Equivalents

Different forms of construction may be used in interpreting a claim. One possible choice is the so-called "validating construction" – i.e. the interpretation that gives validity to the claim. This has been recognized in UK case law for over a hundred years starting with Parkinson v Simon [1895] 12 RPC 403, in a time when opportunities to amend a patent were limited and courts would interpret patent claims to give them validity, just as they would notionally amend a contract to give it validity. The principle continued through to Beloit v Valmet [1995] RPC 705, but Jacob J (as he then was) said courts should not construe claims more broadly or narrowly in the light of prior art, but that when considering purposive construction, a claim may be construed purposively so as not to include within its scope the disclosure of prior art acknowledged in the patent. This is because *"it can hardly have been the inventor's purpose to cover that which he expressly recognises was old".*

Following Actavis v Eli Lilly [2017] UKSC 48, this principle might now be applied in the UK to the doctrine of equivalents.

Effect on construction of acknowledging the state of the art

In Germany, where validity and infringement are considered separately, the cited prior art has been known to help a proprietor to fend off a novelty attack: X ZR 16/17, Scheinwerferbelüftungssystem, 27 November 2018 (nullity case, EP 764811 B1), Headnote *"When interpreting a patent claim, it must be taken into account that a patent seeks to distinguish itself with its teaching from the prior art described in it. If in the description a known prior art is equated with the preamble of a patent claim, the features of the characterising portion are, in case of doubt, not to be understood as being found in the prior art from which they are intended to be distinguished."*

> ***"it can hardly have been the inventor's purpose to cover that which he expressly recognises was old"***

In this case, the fact that the features of the preamble were in the cited prior art was not in dispute. To the contrary, this was helpful for the proprietor as this led to a narrower construction of the features in the characterising portion such that a novelty attack was unsuccessful. Only prior art cited in the patent is relevant in this regard, whereas the prosecution history is usually ignored by German infringement courts.[3]

We turn now to the somewhat trickier situation where there may be a dispute as to whether the prior art is correctly acknowledged in the description. In the particular example discussed the description referred to the preamble of the claim as representing the relevant prior art: Referring to UK case law, Storage v Hitachi [2003] EWCA Civ 1155, the following sentence was added to the description of the patent in the course of prosecution: *"We acknowledge the disclosure in EP-A-0156724 and US-A-4849929 of a storage device system in the form of a fault-tolerant Winchester type disk system, having the features of the pre-characterising portion of Claim 1 below."*

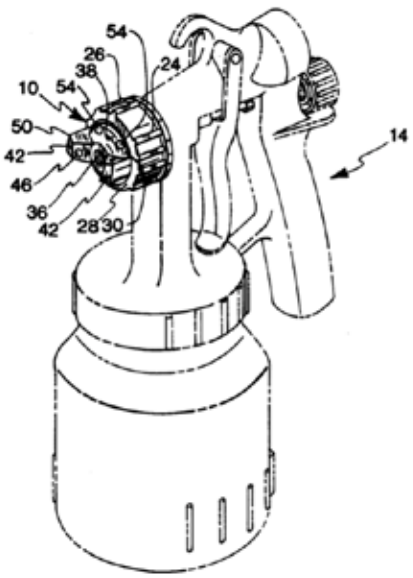


Figure 1 of EP 0596939 B1

A question arose over whether the document EP 0156724 A1 (referred to as "Timsit") was a valid starting point for inventive step analysis. It was held that the acknowledgement that Timsit disclosed the pre-characterising portion of Claim 1 would have led the skilled person to realise those features were not new, so the question of obviousness could be decided starting from the known features.

Finally, we turn to a German infringement case in which an acknowledgement of the cited prior art was relevant to a question of literal infringement. The case is X ZR 74/14, Luftkappensystem ("Air cap system"), 13 October 2015.

The case related to a paint sprayer (EP 0596939 B1), where the nozzle was constructed such that the air was sent into a first passage in a switched-on state for spraying paint, and into a second passage (so that the air leaves the system without interacting with the paint) in a switched-off state when the first passage was not to be used. The advantage over the prior art (which disclosed simply blocking the first passage) was that the back pressure is relieved and thus the air supply is put under lower stress and thus less likely to overheat (even without a special overpressure valve). The main claim related to blocking a passage and permitting air to flow through the other. The proprietor wanted "blocking" to be construed to include both full blocking and partial blocking of air flow.
The description of the patent only mentioned "blocking" as such, but it was also clear from the description that partial blocking of air flow would be sufficient to achieve the desired effect.

The background section of the description used the term "restricted" in addition to the term "blocked" to describe prior art, but did not further distinguish between "blocked" and "restricted". While the Appeal Court considered the use of the additional term "restricted" as highly relevant for the interpretation of "blocking" and interpreted the term "blocking" in the main claim as "full blocking", the German Supreme Court overruled the decision of the Appeal Court and interpreted "blocking" as encompassing both, "full blocking" and "partial blocking". The reasoning for the overruling was because the description of the patent contained no teaching that the use of the different terms "blocking" and "restricting" would be of any relevance. In line therewith, the headnote of the German Supreme Court's decision X ZR 74/14, Luftkappensystem ("Air cap system") reads as follows: *"If, in a patent specification, two measures that differ only in degree (here: blocking and restriction of an air flow) are named without detailed differentiation as the starting point for a problem arising in the state of the art, then it cannot without further justification be concluded from the fact that only the measure with the stronger effect (here: blocking) is mentioned in the patent claim that the measure with weaker*

3. German Supreme Court, judgment of 12 March 2002, X ZR 43/01 Plastic pipe part.

effect is not sufficient to embody the protected teaching."

This judgment is also in line with the established case law that when the description suggests two or more alternatives but only one of them appears in the claim, then all others are considered not part of the claimed invention and even ruled out as an equivalent means.[4] This distinction is not relevant in this case because the two terms "blocking" and "restricting" refer to different degrees of the same measure, rather than alternatives.

Moreover, the broad construction of the claims was based on the lack of a distinction between the terms "blocking" and "restricting", rather than on the fact that they were used to describe prior art. The decision therefore shows that claim construction can be influenced by the definitions and the usage of the terms in the entire patent specification, which includes the background section.

Two-part form

Rule 43 EPC requires that, where appropriate, each independent claim of a patent application shall have: as a preamble, a statement of "*those technical features which are necessary for the definition of the claimed subject-matter but which, in combination, are part of the prior art*"; and a characterising portion, *"specifying the technical features for which, in combination with the [aforesaid] features, protection is sought"*.

...in the examination of patentability and in the examination of patent infringement, it is irrelevant whether a feature is in the preamble or the characterising portion.

According to the Guidelines for Examination in the European Patent Office (EPO), two-part form is considered appropriate if it is clear that the invention resides in a distinct improvement in an old combination of parts or steps (Guidelines for Examination, F-IV, 2.3). We have had instances where Examiners have threatened refusal if this requirement is not met, but it is most unusual. These days, most examiners take a pragmatic approach and accept a reasoned excuse for not separating into two-part form, if that is the applicant's preference.

The Guidelines give instances in which the two-part form is not suitable. In general, it is to be avoided if it would give a distorted or misleading picture of the invention or the prior art. Examples are: (i) a combination of known integers of equal status, the inventive step lying solely in the combination; (ii) modification of, as distinct from addition to, a known chemical process e.g. by omitting one substance or substituting one substance for another; and (iii) a complex system of functionally interrelated parts, the inventive step concerning changes in several of these or in their interrelationships.

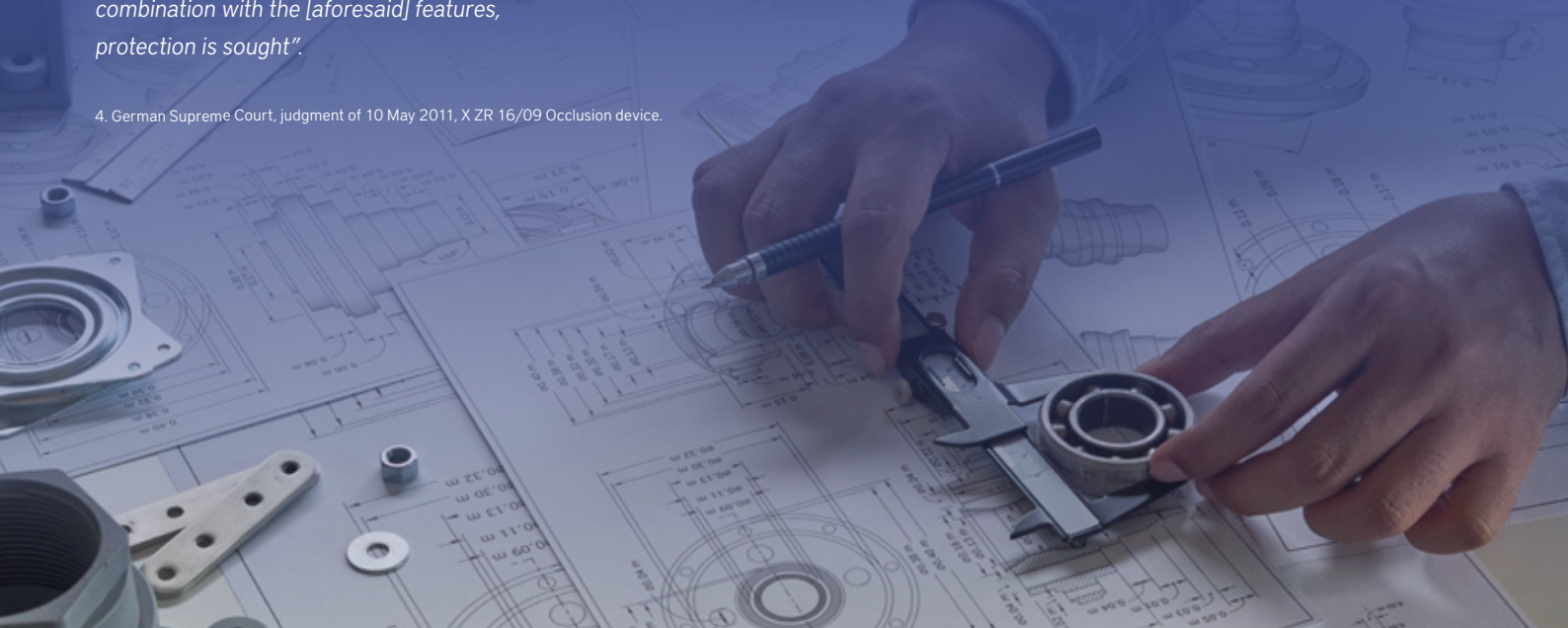
A distorted or misleading picture arises where the separation into two-part form does not truly reflect the starting point for inventive step analysis. Courts are aware that inventive step must be analysed regardless of the characterisation of the claim (i.e. the words "characterised in that" should, in effect be ignored), but human nature being what it is, it is often difficult to ignore the applicant's choice of separation of a claim and, as we will see, there are occasions where it may not be ignored.

The same rules of interpretation apply to both parts of the claim

The German Supreme Court, the Bundesgerichtshof, states quite consistently that both in the examination of patentability and in the examination of patent infringement, it is irrelevant whether a feature is in the preamble or the characterising portion.

There is no suggestion, for example, that the doctrine of equivalents is applied differently according to which part of the claim is under consideration – see the four German example cases listed in the box.

4. German Supreme Court, judgment of 10 May 2011, X ZR 16/09 Occlusion device.



Examples of German Supreme Court case law holding that inclusion of a feature in the characterising part or the preamble of a claim is irrelevant

I ZR 162/57, Rohrdichtung (Tube gasket), 16 June 1961 (nullity case): *"The mere amendment of a claim wording on the part of the applicant, namely to the effect that he changes a feature of the characterising portion to a feature of the preamble, can therefore not be attributed to him as a waiver affecting the patentability of the procedural claim."*

X ZR 11/78, Skistiefelauskleidung (Inner shoe for ski boots), 18 November 1980 (nullity case): *"The usual division of the patent claim into a preamble and a characterising portion, which is in any case legally meaningless for the subject matter of the patent, appears artificial and inexpedient in the present case – as is often the case elsewhere."*

X ZB 22/84, Hüftgelenkprothese (Hip joint prosthesis), 19 September 1985 (ex parte appeal before grant) concerned the Patent Office having rejected an otherwise patentable claim on the grounds that its preamble did not comprise all the features it had in common with the prior art document considered the closest prior art by the Patent Office. In an appeal, the Court set the rejection aside. *"...an application cannot be rejected as formally inadmissible because the preamble of a patent claim [...] has not been formed on the basis of a previously published publication [...] which, in the opinion of the patent office, is 'closer' to the invention of the application or appears for other reasons to be "better" suited for forming the preamble than the subject-matter of the application as designated by the applicant."*

X ZR 102/91, Muffelofen (Muffle furnace), 20 January 1994 (nullity case of German patent DE 2814250 C2), Headnotes 1-2: *"(1) For determining the subject-matter of a patent, it is irrelevant whether a feature appears in the preamble or in the characterising portion of the claim.*

(2) It is not detrimental for the assessment of patentability if the patent specification erroneously designates a feature as prior art. In this respect, only the actual factual and legal situation is relevant, in particular the state of the art to be assessed according to the objective factual situation."

In "Muffle furnace", it had been argued that an effect of a feature in the preamble could not be used in support of inventive step, but that argument was refused by the Court.

In none of these four cases was it argued that the preamble must be used as a starting point for assessing inventive step. This is generally futile in Germany, since an invention must be inventive starting from any prior art document.

The concept of "closest prior art" is even less relevant in Germany than at the EPO.

Conclusion

Generally speaking, prior art should be cited only where necessary.

When citing prior art at all, it is better to be somewhat superficial and not mention too many features, to avoid anything that gives rise to a narrow construction of terms in the claims.

When drafting the description, one should include broad definitions of the terms used in the claims to be on the safe side such as "blocking shall comprise full and partial blocking" (see the above Air Cap System case). In this context, it may be helpful to try establishing at least two levels of abstraction. In the Air Cap System case, it would have further helped the proprietor simply stating in the description that blocking also encompasses partial blocking such as restricting.

In the description, one might want to avoid any language that tells the reader what not to do.

A European patent application will often not proceed to grant unless its independent claims are drafted in two-part form.

There is no formal distinction between the interpretation of the preamble and the characterising portion of a claim in the German courts. Care should however be taken to ensure accuracy in view of the psychological effect on interpretation the separation of a claim might bring.

Patent Box update

By **Hugh Dunlop**

As a reminder, the patent box regime taxes profits of UK companies (if elected into the regime) arising from relevant intellectual property (IP) assets at a reduced rate of 10%. This therefore presents a significant tax saving against the normal Corporation Tax rate of 19% with there being even further tax savings when the Corporation Tax rate increases to 25% from 1 April 2023.

The requirements regarding the methodology to apply for purposes of the patent box calculation has changed, with the grandfathering rules ending as of 1 July 2021. It will now be the case that only the 'new' rules can be applied, being the profit streaming method. Entrants into the patent box regime post 1 July 2016 already needed to follow the profit streaming method, but it will now apply to all companies claiming within the regime.

Some of the steps within the new streaming rules follow those that were included within the old (grandfathered) formulaic approach, however, there are some fundamental differences. These differences mainly relate to the following two changes:

- **Profit streaming:** These new rules require that the calculation is performed on a streaming basis, where a separate calculation (or stream) is completed for each patent. If this is not practical to do then it is possible to stream by each product or product category which uses patents. The company will therefore need to break down its income into a relevant IP income stream (which itself may need to be broken down into relevant IP income sub-streams) and a non-IP income stream.
- **R&D fraction:** Under these new rules the tax benefit is limited in accordance with the proportion of R&D undertaken by the claimant company in respect of the patent/product on which the patent box benefits are being claimed. The R&D fraction needs to be applied to each IP stream and is based upon in-house R&D expenditure and expenditure on subcontracted R&D to third parties, compared to the total R&D expenditure incurred and IP acquisition costs (if relevant). This fraction therefore creates a 'nexus' between the creation of the IP and the claiming of benefits under the regime.

An overview of the steps included within the new regime is set out below. We would like to thank Paul House of Azets for providing this article.

The new regime therefore creates a requirement to track income and expenditure against relevant IP rights. In addition there is the need to track and trace R&D expenditure on each of the IP streams, as the R&D fraction is a cumulative calculation, taking into account past R&D expenditure from 1 July 2016 onwards.

The patent box regime is complex however, it could provide a significant tax saving if a company derives profits from qualifying IP rights, which will be further improved with the future increase in Corporation Tax rates.

Step 1: Identification of income streams
The taxable income of the company is apportioned into IP and non-IP income streams. The IP income stream itself is then divided into relevant IP income sub-streams (e.g. each sub-stream being in connection with an IP right or IP item).

Step 2: Allocation of company expenses between the income streams
The expenses of the business are allocated between the non-IP stream and each relevant IP income stream. This apportionment is to be performed on a just and reasonable basis. Expenses not treated as deductible for the purposes of the old regime continue to not be deductible within these new rules.

Step 3: Calculation of net relevant IP income (RIPI) This is simply step 1 less step 2.

Step 4: Deduction of the routine return

The routine return is calculated as 10% of the relevant routine expenses that have been included within the relevant IP income sub-streams. This needs to be deducted from the result of step 3 to provide the qualifying residual profit (QRP).

Step 5: Deduct the marketing assets return

The marketing assets return can be calculated via the using the small claims treatment (if the company satisfies the relevant requirements) or by using a notional marketing royalty for each of the relevant IP income sub-streams.

Step 6: application of R&D fraction to each relevant IP income sub-stream

Under these new rules the tax benefit is limited in accordance with the proportion of R&D undertaken by the claimant company in respect of the patent/product on which the Patent Box benefits are being claimed. To do this an 'R&D fraction' is applied to each IP asset's patent box profits arising from the previous steps.

The fraction to apply is the lower of:

(D + S) x 1.3) / (D + S + A + R) and 1

Where:

D = R&D costs incurred in-house

S = costs of R&D subcontracted to third parties

A = costs of acquiring or licensing IP

R = costs of R&D subcontracted to related parties

Step 7: Combine the profits from the above sub-streams to obtain the relevant IP profits of the trade

The above profits are then effectively taxed at a rate of 10% within the company's Corporation Tax return.

UKIPO Green Channel – Accelerated processing of UK patent applications

By **John Parkin**

Applicants for UK patent application have long been able to accelerate processing of their application under one of the UKIPOs Patent Prosecution Highways (PPHs), if a potential infringer has been identified, or if faster grant of a patent is needed in order to secure investment.

In order to encourage investment in – and protection of – technologies which are environmentally friendly, the UKIPO allows accelerated processing under the "Green Channel" for any UK patent application relating to "green" technology.

The effects of accelerated processing can be significant. A request for combined search and examination under the Green Channel typically results in issuance of a report within 2 months in contrast to, typically, 6-8 months under standard processing timescales.

A request must be made in writing, indicating:

1. How the application is environmentally-friendly.
2. Which actions the applicant wishes to accelerate:-search, examination, combined search and examination, and/or publication.

Qualifying environmentally-friendly applications can be diverse: for example, energy saving devices, methods which reduce usage of a resource or commodity, or green power generation systems.

If you have an application related to "green" technology whose processing you would like to accelerate, please get in touch.

Firm News

Partner Promotions

Stuart Rowlands
Partner

Johannes Lange
Partner

Gerrit Schultz
Partner

We were delighted to have strengthened our patents practice with the promotion of **Stuart Rowlands** and **Johannes Lange** to partner in 2021. Stuart is based in our London office and works with a variety of technologies across mechanical engineering and green technology while Johannes works for national and international clients from a wide variety of technological fields in our Freiburg office.

We are now pleased to also announce the promotion to Partner of **Dr. Gerrit Shultz**. Gerrit is a German and European Patent Attorney and a German Attorney at Law. He provides intellectual property advice on a wide range of technical areas and covers patents, trade marks, designs, copyright, IT and competition law.

Other Firm News

Dr. Alexandra Puff
Associate

Diana Lipecka
Associate

We have also expanded our German offices with the addition of several new team members.

Dr. Alexandra Puff joins our German offices as counsel. She has been a specialist in intellectual property law since 2017. Before joining Maucher Jenkins, she was a partner at an international commercial law firm in Munich.

Associate Diana Lipecka joins our Munich office. Her work for clients is focussed in particular on proceedings at the European Union Intellectual Property Office. In 2021 Diana was selected as an outstanding IP practitioner in Germany in the WIPR Leaders Guide.

Our team has also seen the arrival of trainee patent attorneys **Elliot Krishek** and **Danqi Zhao** in our UK office. Elliot obtained a Master's degree in Engineering from the University of Cambridge which he completed in 2021. Before joining Maucher Jenkins, Danqi worked as a qualified Chinese patent attorney for a leading patent law firm in Shanghai.

We also welcome two trainee patent attorneys in our Munich office, **Dr. Katharina Brassat** and **Dr. Alexander Wagner**. Katharina holds a PhD in physics and a M.Sc. in Chemistry. Her technical fields of expertise are nanotechnology, chemistry, physics, life sciences and biotechnology. Alexander completed his doctorate in microbiology with distinction in 2017 and worked as research associate at the Biozentrum of the University Basel, Switzerland.

We are proud to announce that we have once again been recognised by Chambers in their latest rankings.

Both the Trade Marks and Patents teams received high praise from clients, "Maucher Jenkins are very entrepreneurial in outlook and understand how IP benefits our business as well as how to frame it and capture the essence of the innovation."

We have also continued to rank highly in The Legal 500 with client comments including, "One of their best strengths is to provide full advice in connection with every single matter pointing out all possible courses of action, so the decision-making process seems much easier for the client."

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