Europe is facing the most radical change concerning European patent practice in over 40 years. For over a decade, SMEs and other users of the patent system in the EU had highlighted the need for the creation of a single patent for the single market, together with a pan-European Patent Court for litigating such patents. The new system will soon be a reality, increasing legal certainty concerning patent litigation in Europe and easing the negative effects of multiple litigation and the costs related to it. This Bulletin therefore features an introduction on how the unitary patent and the Unified Patent Court will fill the gap in the European patent system that users inside and outside Europe have been unhappy about for many years.

This new issue of the Bulletin will also bring to you more useful news related to patents, this time a free-of-charge app that allows you to search for patent information anywhere and at any time.

The Bulletin also features an article presenting the IP Perception Study, commissioned by the European Observatory on Infringements of Intellectual Property Rights, which aims to assess what European citizens across the 28 member states know and think about IP. The study provides an insight into what the concept of IP means to the Union’s citizens, especially younger citizens, for the first time.

Another article addresses how the expansion of 3D printing as a disruptive technology could impact traditional manufacturing and business models. Labelled the ‘third industrial revolution’, 3D printing interacts with patents, copyright, trade marks and design rights. Therefore organisations at policy level welcome information from rights holders and users of 3D printing technology on whether the IP rights framework is adequate for the technology, and whether it provides an infrastructure that facilitates growth and continued innovation.

Also, this Bulletin includes an interview with an expert on EU-funded projects, with tips on the exploitation of results and details of his experience with regard to proposal preparation.

And finally, another article offers some tips and practices for project managers to convert the knowledge resulting from publicly funded research activities into socio-economic benefits.

As always, you can enjoy the patent quiz and are informed about IP awareness-raising events past and future.

Wishing you inspiring reading!

Your editorial team
Creating values – IP exploitation in Horizon 2020

Jörg Scherer
European IPR Helpdesk

Identifying business opportunities

Paving the route to successful exploitation, IP takes an essential role in the entire life cycle of R&D projects funded through Horizon 2020 and should be carefully considered from the very beginning of the preparation of a project. The fact sheet on “IP management at the proposal stage” provides a checklist for the drafting of an exploitation plan addressing the major issues to be considered in terms of IP:

- How will results be protected? How will Joint Ownership be treated?
- How will the exchange of background and results among partners and external stakeholders be managed? What are the best conditions to grant access rights?
- What are the best and most viable routes for exploitation of Horizon 2020 results?

Horizon 2020 is the framework programme of the European Union (EU) for research and innovation for the period 2014-2020. With Horizon 2020, the EU aims at strengthening the European scientific and technological base and fostering benefits for society as well as better exploitation of the economic and industrial potential of policies of innovation, research and technological development. In fact, it is essential that the public resources and efforts used in research are converted into socio-economic benefits to the EU. For this reason Horizon 2020 establishes commitments from the participants in terms of exploitation of the projects’ results, including their protection through intellectual property (IP).

Effectively exploiting research results depends on the proper management of IP, which should be part of the overall management of knowledge in the project. Indeed, it is generally the case that the results of research and development activities require further and often substantial investments to take them to market, which is appealing if the results are well protected through IP. IP is in this way a cornerstone for an effective impact of research results in society, due to its capacity to give its holders a competitive advantage in the market. Even though IP protection requires time and resources, it has nevertheless clear advantages both for research organisations and companies. On the one hand it facilitates technology transfer, while on the other hand it enhances the opportunities of companies for growth.

It’s all about IP – The key to sustainable success

Horizon 2020 collaborative projects differ in their innovation dimension, but as a common principle, they bring partners with different business mind-sets and interests around a table. Expectations and strategies regarding the commercial use of project results are driven by the value and exploitability of IP generated in the project on the one hand and the overall business orientation of the participating institution on the other hand. An IP exploitation strategy at project level can only be successful if institutional IP policies are carefully incorporated and respected in the overall approach.

Usually, most of the institutions involved in Horizon 2020 projects have preferred or established IP exploitation tools and channels, and it is a recommended practice to exchange information within the consortium about those strategies at a very early stage of the project. Obviously, a sustainable and successful IP exploitation strategy at project level has to derive from, and be embedded in, the overall business development strategy of the individual consortium institutions. In the case of small and medium sized-enterprises (SMEs), for which Horizon 2020 has reserved a driving seat to stimulate innovation in Europe, it is not obvious to find proper internal management structures and capacities to turn IP into business. Therefore, specific support measures...
Besides the risk of IP conflicts among consortium partners that might hinder the smooth implementation of a project, a lack of expertise in IP management and knowledge transfer also poses a threat to the successful exploitation of project results. Far too often the full potential of commercialising research results remains unrecognised and thus not fully tapped due to inadequate experience and expertise in IP management. This insufficient exploitation of research results contrasts with the rising importance and demand of professional exploitation strategies, which are already an inherent component of collaborative research projects at the proposal stage.

Therefore, with the start of Horizon 2020, the European IPR Helpdesk has implemented an extended focus on IP aspects of downstream activities. With our increased market-driven approach, we place more emphasis on turning research outcomes and technological developments into value-creating products and/or services.

EU IPR Helpdesk Training activities 2014 – the new (market-driven) approach:

Already at this very early point of the programme implementation, it is well noted that the stronger business orientation of Horizon 2020 significantly reinforces the question of proper IP management management. As a result, we clearly see at the EU IPR Helpdesk an increased demand by beneficiaries, and SMEs in particular, for more strategic advice and training on IP management and exploitation opportunities.

It is in this context that, in 2014, the European IPR Helpdesk offers additional training formats to provide even better "hands-on" strategic advice on IP downstream activities. The new service package addresses the full innovation lifecycle by focusing on the translation of projects’ results into innovative applications in the different technology and business sectors. Training formats are tailored to the different needs and requirements of participants in FP7/ Horizon 2020 projects and provide project participants with a comprehensive picture of different exploitation options and strategies to ensure the commercial and innovative value of research results to be fully unlocked. As a matter of fact, the whole process and success of innovation relies upon IP, but needs to be complemented with skills on business development and finance - a fact which is well considered in our training activities.

Training specialties

As an example, within the new training module “Exploitation strategies and business opportunities for successful participation in Horizon 2020”, we provide best practices in the preparation of viable business/exploitation strategies and plans which might be of particular interest for participants in the new SME instrument.

Targeting SMEs, our training courses will communicate the message that IP issues in Horizon 2020 should be closely embedded into corporate business planning, so that SME participants can appreciate the value of IP in resolving business problems and contributing to the “bottom line” of day-to-day business activities.

Hopefully, with our market-focused training approach, the European IPR Helpdesk can contribute to stimulating and enabling Horizon 2020 participants to use the worlds’ largest innovation funding programme for strategic investment, and as an efficient tool for further business development.

Let’s hear a bit more about the importance of IP exploitation from Dr Eugene Sweeney, Director, Iambic Innovation Ltd, Abingdon, United Kingdom.

1. What is your personal experience in creating markets out of research results? What are the challenges/difficulties?

Trying to creating markets out of research results has its own very special challenges. Research results are very early stage and not market ready. To get them ready for market usually needs significant investment by a “take-to-market” partner prepared to take the risk. This applies whatever the commercialization route is: be it through licensing, a spin-out or a joint venture. In all cases, a proposition must be made to potential industry partners, licensees, or investors, to become involved and take some risk. Often a convincing case cannot be made until further work is done (for example, proof of scale-up), for which funding is needed. In my experience, getting research results to the stage where a convincing “take-to-market” business case can be made is one of the major hurdles to overcome.

2. What’s the key to success in managing impact and innovation in H2020?

Impact and Innovation needs to be managed in all areas of H2020 projects, not just the dissemination and exploitation parts. For example, during the development phase of the project it is important that key results (IP) are identified, captured, assessed, protected (if that is what is needed), managed and nurtured. The development and exploitation plans seek to deliver and position the research results,
in order to move on to create innovation, and to deliver the impact specified in the work program. The strategies help define the plans - but management is key to delivering the successful outcome. Management of impact and innovation means having good structures and processes in place to manage the valuable research outputs after they have appeared!

3. What are the key points in developing a strategy to maximise impact and exploitation?

Understanding the whole environment in which the innovation is to be employed is key. This means understanding the market (size, growth, segments and regions), technologies (other solutions to the same problem), the IPR landscape, potential competitors or partners (already in the market, or other research projects addressing the same topic). Knowing this will allow the opportunities for innovation and impact to be identified and justified, and the proposed solutions positioned for success in the marketplace. It will also be the basis for planning a route to get there.

4. What are the essential IP and innovation management aspects to be considered and properly addressed at the proposal stage of H2020?

At the proposal stage it is essential to demonstrate an understanding that innovation management starts even before the creation of the IP. Even before the Grant Agreement is signed, there needs to be a draft Consortium Agreement, which shows agreement in principle from the partners concerning IP and its exploitation (background, foreground, sideground, access and usage right during and after the project ends, for research and/or commercial use, etc.). During the project, it is important that there are management systems and procedures in place to ensure that researchers are aware of IP issues, so they can recognize IP when they create it and make the project team aware; so that steps can be taken to assess, protect (if necessary) and properly exploit and disseminate. A draft exploitation and dissemination strategy and plan can also be presented at proposal stage, since the proposal should identify clearly the expected research results. During the project the individual strategy can be further refined.

5. What are the major elements of a convincing strategy to exploit H2020 project results successfully?

As mentioned earlier, the exploitation strategy should be based on a thorough understanding of the environment, which will lead to an achievable plan. For this to be convincing, the strategic decisions made and the planned actions need to be fully justified, that is to say backed up with evidence. Justified by fact, not opinion! A convincing exploitation strategy should explain what you aim to achieve and why; the exploitation plan should explain how you will reach your objectives. It is important not to forget the "how" and to demonstrate that this is achievable with the planned skills and resources, remembering that most exploitation will happen after the project end.

For more information see below our next IP training sessions, also with Eugene Sweeney:

### Webinars

**5 May 2014**

IP Management

**19 May 2014**

Technology Transfer

**27 May 2014**

Impact and Innovation in H2020 – a guide for proposers

**September 2014**

Exploitation of H2020 project results

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**On-site training events: registrations will be open soon on the EU IPR HD website**

The EU IPR HD Training Team offers 4 large supranational IP Training Events – which will be publicly accessible and aim to strengthen the skills of project partners (in particular SMEs) involved in the management of IP and exploitation of results. The concept of these two-day workshops will be the following:

- Basic introduction to IP rules / IP basics in H2020
- Impact and Innovation in H2020 for proposers
- Maximizing the impact of H2020 projects - Exploitation of H2020 project results

**Additional information about IP/IPR in H2020**

- New fact sheet: IP Management in Horizon 2020: at the proposal stage (published on 27/02/2014)
- New fact sheet: IP management in Horizon 2020: at the grant preparation stage (published on 02/04/2014)
- Additional fact sheets about IP management in H2020 in the weeks/months to come

The European IPR Helpdesk Training Team is very much looking forward to welcoming you to the next IP training sessions.
EASME: a new name and new role

The European Commission has adopted the establishment act changing the EACI to the Executive Agency for Small and Medium-sized Enterprises (EASME). This new name reflects the Agency’s enlarged mandate and new role as a dedicated institution aiming to improve the competitiveness of enterprises.

The EASME will manage most parts of the Programme for the Competitiveness of Enterprises and SMEs (COSME), including the Enterprise Europe Network, along with Horizon 2020’s SME instrument. It will also lead the energy and climate societal challenges under Horizon 2020, the Programme for Environment and Climate (LIFE) and parts of the European Maritime Fisheries Fund. In addition, it will still implement the final years of its existing programmes and continue to manage the European IPR Helpdesk initiative.

Which are the different technology readiness levels?

In some calls of Horizon 2020, technology readiness levels (TRLs) are used with the purpose to define the different steps in the cycle of bringing basic research to the market.

- **TRL 1:** basic principles observed
- **TRL 2:** technology concept formulated
- **TRL 3:** experimental proof of concept
- **TRL 4:** technology validated in lab
- **TRL 5:** technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- **TRL 6:** technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- **TRL 7:** system prototype demonstration in operational environment
- **TRL 8:** system complete and qualified
- **TRL 9:** actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

How important is intellectual property for you for the success of Horizon 2020 projects and the exploitation of results?

The aim of all funded research is to generate new knowledge. Some research has negative results (i.e. the concept did not work or the solution could not be found). Even a negative result is a result and, if properly documented, will prevent other researchers from repeating the research. If useful knowledge is produced there are several routes to use these results. The most obvious is through scientific publications. Other routes could include: input to standards; input to policy, patenting and eventually new products, services or business models. Intellectual property protection normally relates to the latter (patents, products, services and business models).

At the proposal stage, how relevant is the provision of a business plan and the description of the measures foreseen for intellectual property management? Do you have any practical suggestions regarding this?

In Horizon 2020 this will be more important than in previous programmes. This is due to the correct emphasis on "impact" in the evaluation of the proposals. The logic of the European Commission is "if nothing useful is coming out of your project why should we fund it? If something useful is coming out of your project you should have a plan to exploit it."

I am finding today that the impact part of our courses is the most important part. Researchers are scared of the word "impact" but when they understand what it means they can be quite excited about "having impact".

Can you give us an example of some fundamental steps to bring project results to the market? Any tips for our readers?

The concept of TRL (Technology Readiness Level) is excellent. This goes from TRL 1 (fundamental concept) to TRL 9 (product on the market). Most university researchers operate at TRL 3 and 4 (researching and operating at laboratory level). Research is about bringing a technology or concept to the next level. If a researcher is at TRL 4 they need a partner who operates at TRL 5 (Demonstrating in an environment). Similarly a researcher operating at TRL 5 must find a partner at TRL 6 (Demonstrating in an operating environment).

What this means is that there should be two types of partners in a project: the impact partners (taking the results to the next level) and the scientific partners who undertake the research.

Taking a new concept to the market is a slow process from TRL 1, 2 up to TRL 9. Public funding is limited to about TRL 7. Then private funding must kick in to complete the process.

**Contact**

Dr Sean McCarthy
Hyperion Ltd.
Website
Email
Book: How to Write a Competitive Proposal for Horizon 2020

**“The logic of the European Commission is ‘if nothing useful is coming out of your project why should we fund it? If something useful is coming out of your project you should have a plan to exploit it’.”**

With more than 30 years’ experience in European research, **Dr Sean McCarthy** has extensive experience in the preparation of proposals and management of EU funded projects. The European IPR Helpdesk would therefore like to have an insight into Dr McCarthy’s views on intellectual property and exploitation of results in Horizon 2020.
The unitary patent and the Unified Patent Court: an introduction to the future system

Stefan Luginbuehl
European Patent Office, Munich

I. Introduction

At the end of 2012, the European Council and the European Parliament adopted two regulations under the enhanced co-operation instrument\(^1\) to establish unitary patent protection for the territory of 25 EU member states. This historical act was followed by the signature of the Agreement on a Unified Patent Court (UPC Agreement)\(^2\) on 19 February 2013, which concluded many years of negotiations on the establishment of a unitary patent for the European Union and a common European patent court. On 20 January 2013, the two regulations implementing the unitary patent and its translation regime\(^3\) entered into force for the 25 EU member states participating in enhanced co-operation on unitary patent protection\(^4\). However, the regulations will only become fully applicable when the UPC Agreement enters into force. It will enter into force as soon as it is ratified by 13 contracting states, including France, Germany and the United Kingdom. By now, the ratification process has started in many states. Austria and France, for instance, have already deposited their ratification instruments\(^5\), and Malta has concluded its parliamentary ratification procedure.

The unitary patent and the Unified Patent Court will fill the gap in the European patent system that users inside and outside Europe have been unhappy about for many years.

Currently, the European Patent Office (EPO)\(^6\) grants “European patents” on the basis of the European Patent Convention (EPC). The European patent is a “bundle patent”\(^7\), i.e. a patent comprising a bundle of patents which take effect in the territory of each of the 38 EPC contracting states\(^8\). The bundle-patent approach has the effect that once a patent has been granted by the EPO, the common centralised procedure basically comes to an end. Infringement and revocation of European patents are dealt with exclusively before national authorities, once the nine-month period to file an opposition before the EPO has lapsed. The lack of a common court has led to divergent decisions on the same patent, and differences in the interpretation of uniform substantive law and multiple litigation, which are costly and results in legal uncertainty. The unitary patent and the Unified Patent Court will remedy this unsatisfactory situation.

II. The unitary patent

The unitary patent (or "European patent with unitary effect" as it is officially called) is a European patent to which, at the request of its proprietor, unitary effect is given as from the grant of the patent. Consequently, an applicant wanting unitary protection in the EU Member States participating in enhanced co-operation will first have to file a European or international application and get a patent granted by the EPO. The applicant does not have to decide whether he wants unitary effect for his European patent until such time as the patent is granted. Unitary patents, unlike "classic" European patents, have unitary character throughout the territories of those states taking part in the enhanced co-operation scheme and having ratified the UPC Agreement. In all those countries, they offer unitary protection and have the same effects. Consequently, they can be limited, transferred or revoked only in respect of all participating EU Member States, although they can be licensed on a limited territorial basis.

If an SME, research institution or university from an EU country files an application with the EPO in an official language of the EU which is not an official language of the EPO (English, French and German) it can request a compensation of the translation-related costs of the application up to a ceiling if the application leads to the registration of a unitary patent. Therefore, SMEs will not only profit from lower pre-grant fees at the EPO if they file their application in a non-EPO language but also from an additional compensation if they register unitary effect. Under the latest proposal it is suggested that a lump sum will be reimbursed to the eligible patent holders. The exact level of the amount provided to SMEs is still under scrutiny.

The unitary patent is an alternative to classic

\(^1\) See Article 20 EU Treaty and Articles 326 to 334 TFEU.
\(^3\) Regulation (EU) No 1257/2012 of the European Parliament and of the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection (Regulation 1257/2012) and Council Regulation (EU) No 1260/2012 of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection with regard to the applicable translation arrangements.
\(^4\) Croatia, Italy and Spain have decided to remain outside of the system for the time being.
\(^5\) For the status of ratification of the UPC Agreement, see http://ec.europa.eu/internal_market/indprop/patent/ratification/index_en.htm.
\(^6\) The European Patent Office is an organ of the European Patent Organisation, which is composed of 38 states, i.e. all EU Member States plus ten other European states.
\(^7\) See Articles 2(2) and 64(1) EPC.
\(^8\) For more information see www.epo.org.
European and national patents. No patentee is forced to give his European patent unitary effect.

In order to register unitary effect, the patentee will have to file with the EPO a written request, in the language of the EPO proceedings, within one month of the grant of the European patent. Unitary effect can only be registered if the European patent has been granted with the same set of patent claims for all participating EU Member States.

Translations of the patent will no longer have to be filed. Instead, machine translations will be made available as part of a service that the EPO is currently establishing with a private provider. Known as “PatentTranslate”, this service is already in place and being used to translate patents granted in English into 31 other languages (all 27 languages of the EPC contracting states, plus Chinese, Japanese, Korean, and Russian). By the end of 2014, translations from the three official EPO languages (English, French and German) into all of the above languages will be possible. During a transitional period of no longer than 12 years, and until such time as high quality machine translations are available, the patentee must file a translation of the patent specification with the request for unitary effect. If the European patent is granted in French or German, a complete English translation must be filed. But if the patent is granted in English, a complete translation must be filed in another official EU language.

The fact that no more translations will have to be filed by the patent holders will have a positive impact on the general post-grant fees. Today, applicants not only have to pay patent attorneys to establish the required post-grant translations but also have to pay in many EPC contracting states validation fees, translation fees, publication fees etc, in order to validate a “classic” European patent at national level. There will be no such costs for a unitary patent. However, the exact level of the renewal fees for the unitary patent is currently still open. For SMEs and other users it will of course be much more important to know what the renewal fees for a unitary patent will be before they decide to register a unitary patent. The substantive discussions on the level of the renewal fees among the participating EU Member States started in October last year. What seems clear is that they will have to be low enough to be attractive to users but high enough to ensure the EPO’s financial sustainability and an appropriate income for the participating EU Member States.

III. The Unified Patent Court

A. Structure

The UPC Agreement establishes among the signatory EU member states a European patent court comprising a court of first instance, a court of appeal and a registry. The court of first instance will be decentralised, i.e. it will comprise a central division, plus local and regional divisions in the contracting states at their request. The central division will have its seat in Paris with sections in London and Munich dealing with disputes on patents in specific technical areas. Each regional division will be run by several states. Sweden and the Baltics states recently concluded an agreement to establish a regional division for their territories. Using local and regional divisions in first instance and thus ensuring a local presence of the court was one of the core requests of stakeholders and particularly SMEs.

The court of appeal will be centralised and located in Luxembourg. The UPC will be a court common to the EU member states. Like every national court in the EU member states, it therefore has a duty under the EU treaties to refer questions on the interpretation of EU law to the Court of Justice of the European Union (CJEU) and ask for preliminary rulings.

B. Jurisdiction, rules of procedure and judges

The UPC will have exclusive jurisdiction on the territory of the contracting states inter alia in respect of actions for infringement and revocation of classic European and unitary patents. During a transitional period of at least seven years after the entry into force of the UPC Agreement, infringement and revocation proceedings may still be initiated before the relevant national authorities. Furthermore, the UPC Agreement provides that, unless proceedings have already been initiated before the UPC, holders of “classic” European patents granted or applied for will have the possibility to opt out of the scope of application of the UPC Agreement. Once “opted out”, a patent can only be litigated at national level. An opt-out from the scope of the UPC Agreement concerning disputes relating to unitary patents is not possible. The UPC will work to its own rules of procedure, which are currently being elaborated by the preparatory committee of the Unified Patent Court. In order to efficiently deal with this remaining work, the committee has established dedicated project teams. In addition, the committee has launched a call for expressions of interest on the part of candidate judges, and has received more than 1,300 replies from persons with differing levels of experience in patent litigation. It goes without saying that the success of the UPC will to a great extent depend on the quality of the judges. In order to ensure that only highly qualified judges are appointed to the court, the UPC training centre was very recently inaugurated in Budapest with the financial and administrative support of the EPO. The establishment of the centre will ensure that candidate judges from states with limited patent litigation today get the required training before the UPC becomes operational.

SMEs and other users have long requested the establishment of a common European patent court. The UPC will increase legal certainty concerning patent litigation in Europe and will ease the negative effects of multiple litigation and the costs related to it.

More information on the subject is available at www.epo.org.

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9 The latest draft (draft No.16) is available at www.unified-patent-court.org.
10 The preparatory committee, which is composed of representatives from the 25 signatory states, the European Commission and the EPO, deals with the legal, technical and practical implementation of the UPC Agreement.
11 For more information see www.unified-patent-court.org.
Search patents wherever you are with the mobile application Matheo Patent Lite

Nathalie Tribillac
Matheo Software

Matheo Software is a French software company involved in technology watch and data analysis. Best known for its patent search and analysis software, this company has recently made available a mobile application for patent search in the Espacenet database: Matheo Patent Lite.

Intended for a broad public interested in innovation, research and development and industrial property, but also for companies concerned about following the patent registrations of their competitors, Matheo Patent Lite allows access to more than 86 million patents in more than 140 countries.

This free-of-charge app runs on Android and is very easy to use. It allows patent searches using various criteria and access to the following information:

- patent numbers,
- publication date,
- applicants and inventors,
- classification codes,
- abstracts in available languages,
- as well as pictures.

Patents of interest can be stored in the application for later viewing and further analysis in Matheo Patent, for those using this software. The configurable alert system also allows the users to be informed in real time of new patents.

Further information on this tool is available at www.matheo-software.com.

3D Printing and IP: What does the future hold?

Ashley Turner & Dr. Nicola Searle
Economists, UK Intellectual Property Office

Introduction

The world is flat. Or rather, today’s world map is a flat, two-dimensional representation of a spherical, three-dimensional globe. Which came first - the globe or the map? With the advances in 3D printing, also known as additive manufacturing, the question no longer matters. From the two-dimensional map we can now scan and print the 3D globe, and vice-versa. 3D printing is expanding our technological limits and raising a number of IP questions.

Labelled the ‘third industrial revolution’, the expansion of 3D printing as a disruptive technology could impact traditional manufacturing and business models. The ability to print objects on demand could change how and where manufacturing takes place, and the type of facilities required. Mass production may shift to more local production, nearer to the end-user market. As a design-intensive area, it also plays into EU strengths in innovation and design. Ensuring that the technology matures and develops successfully requires an understanding of its interaction with the intellectual property framework.

Despite the hype, 3D printing isn’t new. In 1974, a tongue-in-cheek article in the New Scientist proposed the idea that a laser could shine through a vat of liquid plastic and solidify it into objects. In 1977, the first UK-based patent for this technology was granted for essentially the same idea. Although it didn’t culminate in a commercially available printer at the time, it led the way for successive developments of the technology1. Recent focus on 3D printing comes after significant advances in computing and software, reductions in cost and the expiration of a number of key patents.

3D printing works in a similar way to your inkjet printer at home. Instead of ink, 3D printers can use a range of materials – plastics, ceramics, concrete, metal and even chocolate.

Through the use of a number of software tools, descriptions of each layer are sent to the printer and, when printed, form the 3D object layer-by-layer. In terms of scale, printers range from the largest industrial models (with a build space of 4m x 2m x 1m)2, to consumer models which have dramatically dropped in price in recent years. Consequently, the growth of personal printers has increased on average by 346% annually from 2008 to 20113.

3D Printing and Intellectual Property

Like many new technologies, the intellectual property framework was not created with 3D printing in mind. As a result, new interactions may occur which have yet to be established in intellectual property practices. Everyone has their favourite theory as to which IP right will be most impacted, but it is clear that 3D printing interacts with at least patents, copyright, trade marks and design rights. The Government welcomes information from rights holders and users of 3D printing technology on whether the IP rights framework is adequate for the technology, and provides an infrastructure that facilitates growth and continued innovation.

Patent Research

The UK Intellectual Property Office (IPO) has a team doing exciting research on patent data called Patent Informatics. Last year, they turned their focus on 3D printing to explore the level of patent activity taking place with the technology. Analysis of about 9,000 worldwide patent records from 1980 to 2013 demonstrates the extent to which 3D printing has increased in popularity. Patenting linked to 3D printing has increased dramatically since 1980, and especially so in recent years as indicated in the figure below from the report.

The report looks into these 3D printing based patents, exploring the classification, top countries and top assignees. 3D Printing was initially used for product prototyping; however the technology is now being adopted by artists, designers and even architects. In particular, 3D printing is already having a significant impact on healthcare, with manufacture of prosthetics and implants specifically designed for the patient using CT or MRI scans. This has been demonstrated recently in pioneering surgery to reconstruct the face of a survivor of a motorbike accident using a series of 3D printed parts. The Patent Informatics research (report available on the IPO website) finds hot spots emerging in healthcare, including bone implants, medical devices and dental implants. Elsewhere, toy manufacturers are using 3D printing as a more efficient way of production, car manufacturers are investigating production of auto parts and NASA is interested in creating food for astronauts. With the technology being applied across a rising number of industries, the number of patents applied for is increasing year after year.

In this fast growing technology, the report inevitably opens up as many questions as it answers. As 3D printing grows, what will the next areas of growth be? How will customer use impact 3D printing patent activity? Is 3D printing at the peak of the ‘hype cycle’?

Further Research

Another team at the IPO, the Economics, Research and Evidence team, has commissioned a report to analyse the current use of the technology by industry. The research is jointly carried out by the Centre for Intellectual Property Policy and Management at Bournemouth University and Econolyst, a 3D printing consultancy. This project focuses more on copyright and design rights aspects of 3D printing as the design files for printing, the printed object itself and potentially other aspects of the process will touch on these IP rights.

The research, to be published in the summer of 2014, combines a data-based analysis of 3D website data with a series of case studies. The data analysis captures information on the number and scale of uploads, the type of objects being offered for download, and the frequency of downloads and cost. The case studies examine companies, artists and manufacturers using 3D printing. Initial findings suggest that 3D printing is already very important for some sectors but may never be key for others. The report will provide insight into the current use of the technology, and how business is utilising this.

What's next?

With the swift development of 3D printing technology, every issue encountered and resolved seems to generate more questions. For example, how will consumers acquire the skills to make their own printed objects? What are the IP concerns if a consumer wants to print a replacement part for a broken toaster? The UK IPO is keen to better understand the future interaction of IP and 3D printing and will continue to research the area.
IP PERCEPTION STUDY

Office for Harmonization in the Internal Market (OHIM)

The IP Perception Study is the very first study of its kind at EU level, commissioned by the European Observatory on Infringements of Intellectual Property Rights and delivered by the consultancy firm Edelmand Berland. It assesses what European citizens know and think about IP, across the 28 member states. Qualitatively, citizens were questioned face to face in nine Member States: Croatia, France, Germany, Italy, Lithuania, Poland, Spain, Sweden and the United Kingdom. These countries represent more than 75% of the EU population, as well as covering a rich diversity of cultural, economic and even religious viewpoints and backgrounds.

Quantitatively, over 26,500 people were questioned via a series of telephone interviews across every single one of the 28 Member States. And fifty reports and studies were analysed for a comprehensive literature review.

The study’s methodology strictly follows that of Eurobarometer, adding two questions from the 2011 Eurobarometer survey (number 363).

The study provides an insight into what the concept of IP means to the Union’s citizens, especially younger citizens, for the first time – how they understand it, and how they perceive it. From the study, we know that people say that they know about IP and its various components, but in reality their understanding is less than they think.

The study also shows that the so called “Generation Y”- those aged between 14 and 25, showed much greater willingness to circumvent IP rules and norms than those who are older. This is an important piece of information for policy makers, civil society and business. Generation Y is growing up, and unless action is taken now to better adapt the system to their expectations, they might take their habits with them into middle age and beyond. The survey showed that a full three quarters of EU citizens agree that innovation and IP go hand in hand and that one cannot really exist without the other. Furthermore, 69% agreed that companies that create a lot of IP contribute significantly more to the creation of jobs and economic growth than others, and that 77 % of EU citizens condemn IP infringements.

But 9% of EU citizens say that they have intentionally accessed, downloaded or streamed illegal content from the Internet over the last 12 months, while 4% of EU citizens said they’d purchased counterfeit goods intentionally. Over a third – 38% - of EU citizens surveyed agreed with the statement “buying counterfeit products is an act of protest and a way to resist to the market driven economy and the large premium brands”. This figure rises to 49% for EU citizens between 15 and 24 years old. Again, over a third of EU citizens surveyed agree with the statement “buying counterfeit products allows making a smart purchase that enables you to have the items that you wanted while preserving your purchasing power”. This figure rises to 52% for EU citizens between 15 and 24 years old. And 43% of Europeans consider that big companies are the primary beneficiaries of IP, with only 11% saying that consumers like themselves are the primary beneficiaries of IP.

The survey shows that some EU citizens find IP confusing; 19% said they have wondered whether a site where one could download music or videos was legal or not, 12% actually researched to find out if a downloading site was legal or not. These figures rise to 42% and 26% for the younger generation.

The survey also gives pan-European figures on when EU citizens think it’s actually acceptable to download copyright-protected material. 22% think this can be done when there is no legal alternative in their country. This is 20 points higher amongst citizens from 15 to 24 years old (42%). 42% of Europeans consider it is acceptable to download or access copyright protected content illegally when it is for personal use. This number rises by 15 points to 57% amongst citizens from 15 to 24 years old. Moreover one third of young Europeans believe illegal content to be of better quality, and nearly four out of ten young Europeans declare that illegal content on the Internet is more diverse than legally available content.

The IP Perception study forms a useful complement to the IP Contribution study, released by OHIM and the EPO in September 2013. IP Contribution provided data on IP in the context of jobs and employment, while IP Perception researched, in part, how Europeans make that link between IP, jobs and employment. The findings of both studies will provide facts and data for policy makers and all interested in IP, and will be joined in the near future by a third study on IP infringement.
News from our EU IPR Helpdesk Ambassadors

Missions for Growth

With the overall aim of raising awareness among EU companies, and small and medium-sized enterprises (SMEs) in particular, of the necessity to foster new and strengthen existing industrial relations within the EU and abroad, Commission Vice President Antonio Tajani, Commissioner for Industry and Entrepreneurship, organised several "Missions for Growth" to different regions in Europe during the first quarter of this year. The initiative to help entrepreneurs, specifically from SMEs, enter the international market was initially started in 2011.

Through business meetings and discussions, these missions provide an excellent platform for exchange on various topics and fields of interest, primarily but not exclusively related to Enterprise & Industry policy among representatives of EU businesses and potential third country authorities.

The European IPR Helpdesk was represented by ambassadors from the local member at three missions organized in three European regions: Wallonia/Belgium, Andalucía/Spain and Sicily/Italy.

EU IPR Helpdesk Ambassador Meeting in Brussels

It was a big hello and a real pleasure to meet with our EU IPR Helpdesk Ambassadors on 7 and 8 April at the Covent Garden premises of the European Commission in Brussels. The European IPR Helpdesk, in cooperation with the Executive Agency for Small and Medium-sized Enterprises (EASME) and the European Commission’s Directorate-General for Enterprise and Industry (DG ENTR), invited all ambassadors on the occasion of the Annual EU IPR Helpdesk Ambassador Meeting under the motto "Review 2013 and Outlook 2014".

This coming together of the team and 27 of our ambassadors provided a great opportunity for a lively exchange of views and best practices in IP management and exploitation. Starting with a review of the achievements of the scheme in 2013, Roberto d’Erme moderated a kind of self-assessment where suggestions for improvement were collected and discussed. After the presentation of the new – more market-driven – approach of the EU IPR Helpdesk 2014 Training programme, the community was provided with an outlook on upcoming activities of the Ambassador Scheme and the related expectations for 2014.

On the second day of the meeting the EU IPR HD team arranged the first IP training session for EU IPR Helpdesk Ambassadors in 2014. Topics such as IP Management in Horizon 2020 (Roberto d’Erme and Jörg Scherer – EU IPR Helpdesk), standardisation in Horizon 2020 projects (Luc van den Bergh – CEN-CENELEC) and the SME Instrument (Eric Koch – EASME) were thoroughly presented and extensively discussed.

After these very successful two days, the EU IPR Helpdesk team now looks forward to meeting all Ambassador colleagues again at the second on-site meeting scheduled for end of September / beginning of October in Alicante.

Fancy a little quiz?

As you know in every issue we include a quiz to help you develop your patent searching skills using Espacenet. Why don’t you try using Espacenet today? Here comes our new quiz:

QUIZ

Non invasive glucose measurements for diabetes patients

This quiz also relates to a Dyson Award finalist. Florian Lemaitre designed a system for treating diabetes. A watch equipped with a laser sensor measures the sugar percentage in the blood. This measurement is automatically used for a proper dosing of the insulin pen further used by the patient for his treatment. Using Espacenet, try finding patents covering this invention or non-invasive measurement method.

More on the award finalist can be found here and here.
Transforming air into water

An Australian student has won the James Dyson award for a brilliant low tech water harvester that extracts water from the ambient air. This device could be particularly valuable for arid areas where communities depend on agriculture for their living. This harvester filters air via a turbine fed by solar-generated electricity, feeds it through copper tubing into the earth where the lower earth temperature condenses the atmosphere and releases moisture. The collected water is pumped to the plant roots to be fed.

More details are available from this site and this video. Try finding patents covering similar devices using Espacenet.

Step one: To find similar patents, identify the most pertinent aspects of the invention – common technical features that may be found in related patents – and for each aspect, define a comprehensive set of synonyms. To perform the search, the following concepts – groups of synonyms covering the different aspects of the invention – can be defined:

- water, humid*
- condens*, extract*
- temperat*
- underground, ground
- differen*
- irrigat*

The combination temperat* ground irrig* differen* condens* yields an interesting list of results.

This list contains two patents, one being very relevant:

**CN102986499 (A) - Self-powered and cold air-assisted water-drawing self-irrigation system based on ground surface temperature difference**

The search can be refined using additional combinations of keywords or using classification symbols in addition to those keywords.

Step two: Use the classification assigned to relevant documents to further refine and complete the search. There are few classification symbols possibly relevant to this invention. The one that seems the closer is **E03B3/28** corresponding to methods or installations for obtaining or collecting drinking water or tap water from humid air. Using this classification symbol combined with the keyword ground* yields additional results.

Interestingly this classification symbol can be used in the CPC and IPC fields to obtain more comprehensive results as not all patent documents are CPC classified. Using CPC you obtain this list, IPC this list. The IPC offers a larger set also containing Chinese documents which are not yet CPC classified.

Following additional documents can be found in this list:

**US2002141828 (A1) - Irrigation system and method**

The award winning product is a variant of similar devices already patented. One Chinese patent, the closest to our product, was filed after the product was released. Often the success of an invention is linked to a working version of a well-known concept. Capturing humidity from the air by condensing water underground is a rather old idea. Patents of that kind can be a source of inspiration for new and interesting improved products.
The European IPR Helpdesk on Tour: Take a Look at a Selection of our Recent Events

The world is turning and during the last 3 months the European IPR Helpdesk Team had the chance to be a part of several selected IP events which were organized in various places all over Europe offering wide-ranging thematic orientations. In addition the training team provided several IP workshops building capacities in IP management among SMEs and Researchers. Here a bunch of our recent events:

- **Training – Light and Building, Frankfurt am Main/Germany**
  - 3 April 2014

- **Training – IP management and exploitation in the context of European research and innovation projects, Weingarten/Germany**
  - 9 April 2014

- **Universitatea Tehnica din Cluj-Napoca, Cluj/Romania**
  - 20-21 March 2014

- **Study and training conference on the H2020 programme, Rome/Italy**
  - 25-26 March 2014

- **Innovation Convention Brussels/Belgium**
  - 10.11 March 2014

- **Training – KAHO Network, IP management and exploitation, Tampere/Finland**
  - 4 April 2014

- **CoBIT Hannover/Germany cooperation with Enterprise Europe Network to organise individual IP talks in the frame of the FutureMatch 2014**
  - 10-14 March 2014

- **Mission for Growth, Belgium, Greece, Italy, Spain**
  - February, March & April 2014

- **Missions for Growth Luxembourg/Luxembourg**
  - 10 March 2014

- **IP in the Marie Skłodowska-Curie Actions, Barcelona/Spain**
  - 4 April 2014

- **Alimentaria 2014, Barcelona/Spain**
  - 31 March 2014

- **Industrielle Technologien 2014, Athens/Greece**
  - 10.12 April 2014

- **Alimentaria 2014, Barcelona/Spain**
  - 31 March 2014
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Should you have any ideas, comments or suggestions related to topics you would like us to cover in future Bulletin issues, please get in touch with us on LinkedIn: www.linkedin.com/groups/European-IPR-Helpdesk-3834260.

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