**Introduction to patent searching using Espacenet**

Hello and welcome to this introduction to patent searching using a Espacenet. I'm David Stacey faculty librarian for engineering and design going to give you a bit of an overview of Espacenet and then a demonstration.

Espacenet is a fantastic web based resource for searching for patent documents. It's arguably the biggest coverage that you can get certainly for free products. And for those listed on our resources pages. There's about a hundred and ten plus million patent documents on the website. Most of those will be applications. There's always more applications than actual granted patents.

The documents themselves come from over a hundred countries. So there's certainly more than a hundred countries. So it's not entirely comprehensive. I don't think there's any product that is.

The product itself is developed and all the information is collated by the European patent office and they get this through a feed from the various National and Regional patent offices. And this does include the top five around the world.

Chinese, Korean, Japanese, UK, American and European patent offices all covered and whilst that might result in certain lag time and the potential for some gaps in terms of coverage. If there's an error made on the whole to very very comprehensive product and it gives you coverage for UK European and worldwide documents going back to about 1836 in terms of bibliographic records.

But if you want to access the full original paper versions of these documents coverages only fairly comprehensive back to about 1920. So if you want some of the older documents, you'll generally need to first check on this Espacenet, but if they're not available go back to the original patent office and see if it's on their web pages and the same holds true for any of the other information that's provided here.

If you need a bit more information, perhaps the legal information on legal status isn't entirely clear. Only if the help information doesn't resolve that within a Espacenet. You can't go back to the original patent office for more information.

So for example, if you're interested in the UK patent, you can try the UK's patent office website and also their website ipsum, which allows you to search for Unique patent number for UK patents and see all the details there including a sort of jargon for explanation of whether it's in force or not and all the details there. For other patent offices, for example, if you went to the the USPTO for American patents for earlier patents, for example, they have a separate database for the applications and the grant of patents. You have to search those separately. Although it does go further back in time.

You'll get very specific pieces of information that you'll see from our previous talk in Espacenet, but this also includes information such as the citations now what this means is when you find a patent documents record in Espacenet, there will be links to any of the prior art that they prefer to so previous plan documents that they needed to cite to demonstrate that it's not it's not repeating something that already exists and also to showcase what's already being done and you'll also if the patents been in the system for a while and if there's a future patents that came after it that referred back to this in their prior art search you can look forward in time at those. So those are citing patents.

So looking back and forward in time for that particular document a bit like you would when you're doing a literature search and you find time citing information before adding time and references for previous sources cited.

So in terms of patent families what this is this information gives you the information about other patent documents related to this one that you're looking at and there's typically be where you've applied for the same patent coverage but in multiple countries and have had to go through their process or go through the WIPO's process.

So you'll often find duplicate versions of this patent for those different countries in their in their specific languages, this can be particularly useful. If you want to read something in your own language, although Espacenet does have a very straightforward machine translation tool that you can make yourself and point that out.

If the doc is a little tool for finding out the legal status of patent document for example, where the protection Rights exist and are in force, whether they're expired or not or have been kept up with renewals and you'll often see a link to Global to Asia as well which basically provides the paper trail for correspondence documents between applicants attorneys and the various major patent offices.

So this gives you a sort of an insight into what's going on behind the scenes and the process may or may not be of interest to you. We should say, of course that what you're using Espacenet it can't do everything and there may be some of those gaps of mentioned. So if you are trying to do exhaustive research you will need to use other tools. If you are applying for your own pattern, you'll need to seek professional guidance and perhaps use of a patent attorney.

So there's three main options for searching Espacenet and in the newest iteration of this Espacenet these all work together if you want to do so so you can begin with a Google style smart search and also then you can also then move your search terms from that into the advanced search automatically expand upon them for slightly more controlled search. Otherwise, you can see begin with the advanced search if you want to do so or indeed with a classification search which uses a hierarchy of terms, which we will come back to.

But you can cite any of those points and merge them together. So the smart search is really good it automatically searches for keywords in their appropriate Fields. So it will identify keywords and search for those in for example, the title abstract or names for example in the inventor or applicant fields and it will identify inventor or applicant names be they personal corporate. More easily if you capitalize the first letter while you can use Boolean search syntax like you would in a literature searching database which is AND, OR NOT. It will automatically much like Google assume that you mean the key word AND between the words that you enter as in you have to find all of those terms that you enter. They must all be present. This is quite helpful because typing in for example pixel touch will do the same as searching for Pixel AND touch as in both those keywords have to appear in the record.

The flip side of this is that of course if you include a term that is a that is useful to you but is only present in a certain number of those records that are relevant. You may well be excluding those that you don't know about. This is why it's useful to use the or operator for alternative keywords for the same term or to use a classification search as well to make sure you're picking out everything that's associated with that particular area of technology or innovative step or whatever article you're researching.

Also in terms of entering numbers. It will also identify whole numbers. So patent, patent document numbers priority dates in the like and it also to identify partial numbers, which is particularly handy. If you're searching for country codes, which the first two letters and the start of the unique patent number such as GB which identifies it as a British patent or EP for patent that's been processed through the European patent office and there's a range of those country codes available in the help section so you can always look those up if you're not sure what they stand for.

So here's some examples of using Boolean search and text so you can use them for alternative spellings such as fiber with an ER or RE alternative applicant names different company names here. You got Nikon for example and full version. We want to combine different terms for your searches wind and turbine or if you want to exclude terms for example usage of a helmet not motorcycle.

You can also use phrase searching, search for specific keywords in a particular order in particular context.

So high-speed train, you might want to find in the title only and you do that with those inverted commas. You can also use truncation symbol, which is the asterisk symbol in this case to reduce the word to its root and therefore incorporate all optional word endings beyond that point. So optic for example in the asterisk will find optic optics optical but it might also find keywords that you don't want to find so do be aware of the various permutations so in this case you might find optician as well.

So I've already mentioned country codes and we'll come back to those and do note that they won't always be easy to guess. For example, Germany be looking for 'd', which is actual Deutschland.

Going back to pattern classification is before we get into the demonstration. It's useful to have an idea of how these work. It's a little bit like how we organise our library materials on the shelves where we use a two decimal numeric system. So where the first three numbers represent the area of human knowledge for example 720 would be architecture and then after the small point you get further numbers decimal numbers which represent subsets of subdivisions within that topic area so that you can get more and more precise this enables you to find items next to each other on the same topic. In this way the pattern classification also works into forest starts very broad. So it's usually a 2H or a to Y. If you're using the Co-operative patent classification scheme and the top level for example for G is physics and then if interested in Optics, it's G02. Then within that you can expand that and honing on spectacle sunglasses or goggles GO2C and then further and further down until you get more and more specific and this is really handy because if these classification codes have been applied correctly to any patent document that's relevant to those topics. Then it means you can find others irrespective of using keywords, which may vary depending on what they've called the pattern in the title and keywords. In the abstract excetera. So it gives you a bit more control. And of course you can combine basic keywords with classification searches date ranges all sorts of others as well.

demonstration to see if we can put this into practice. So this is the Espacenet interface and newer iteration. First things first, you can see that this is obvious search box at the top of the smart search.

But you may want to think about which office in language you can use. In case the default isn't what you want. I'm leaving on a default which will be in English. So there's a few other things to point out any point. You can switch the advanced search on and off. So if you want to begin with an advanced search, it would give you all of the boxes open to start with. So for example keyword searching in the title, title or abstract publication Number application or priority number applicants or inventor names and classification code CBC you IPC in this case and you can then once you've entered your terms search or reset, but if you could begin with this basic search here it will then in context when you switch over automatically add those across which we'll see in a minute.

So you might prefer to start there. If you want to start with classification codes. You can either keyword search for those that are appropriate bearing in mind that more formal terminology will be more effective. For example, if you want to search for glue or glues, you might not find exactly what you wanted. You might be more successful with adhesive.

So think about the words you're using IF in doubt you can use the browse function or do a simple search to start with with the keywords you want and see what results you get and what classifications they use and then check back those through the links.

Any of these you can expand and drill down into those classifications as we've noted. A is quite handy. It's Human Necessities. So for example, if I was looking at something to do with clothing it be under A Personal Domestic Articles. Maybe I'm interested in Footwear like shoes so that be A43 Characteristic Features. For example, I might drill down into those Soles of Shoes. For example, you know, I can find a shoe specifications for a particular types of shoes, too. horseshoes down to golf shoes Etc In any case we'll come back to the classification search.

I mention the help guide already. This gives you a really useful glossary. So if you want to have their definitions of particular things you can look into here country codes is handy because it gives you an A to Z.

So, for example, you might not necessarily know that let's say German Democratic Republic was DD what else we got? GC Gulf cooperation Council, there's all sorts in here that aren't necessarly guessable whereas a lot of from will be so IT for Italy is fairly obvious. So we click away there. This tablet you back to your results the - My Espacenet will show you your selected records.

We clicking in any tick boxes of any that you select in session. And from there you can save print download your queries. So that should query history in session and your settings but we'll get started with a basic keyword search. So for example, I might search for the applicant by name so Dyson and so this could be the applicant or inventor in this particular case, and I'm interested in cyclone vacuum cleaners, so we'll try Dyson and cyclone and vacuum. As you can see this 513 results found you could do things a bit differently.

You could search for it as a phrase. So cyclone vacuum cleaner, for example, if you know what be a bit more specific and again this case it would reduce your results down to just those that specific phrase. So if you know we're looking for or good idea can go that route. Anything you want to look at will be displayed in this results list and it will be automatically result ranked by relevancy, which is a particular algorithm for where your keywords appear and how often they appear.

You can change it to the priority date or the publication date if you want to do so. Another handy option you can use is to alter how the results display for example. You could include thumbnail images where they are available. If there are drawings with the descriptions or you could use a compact list for example just gives you just the basics so title, patent number, dates Etc.

And if you hover your mouse over it will explain what those are. For example, the applicant here. Another thing you can do is display or use the pop-up tips if you want to if you're just starting out and this will also give you these little question marks. You can click on which will tell you in a little bit more detail what's being presented to you. And anything you've selected here, you can of course download for example into a spreadsheet print and you also have options to share as well. So for this first record, I'm just going to click on the title to open the bibliographic data and that gives you a simple breakdown and if you're familiar with the coin codes and sections that key you'll notice those here writing. And you can scroll through and see the abstract and your keywords will be highlighted in the abstract as well if you searched in that area.

If you open this section you can explore to particular sections such as the description, the claims and you can see the language at the top there. If you want to view it in a different language, you can use the automatic translation there or if there's another document in the pattern family, you can change to that one and that will give you that language where it's been done without machine translation for other applications.

So in this case this pattern has been applied for in Japan and Korea so you can see that there's you can switch to those if you want to do so. And it links to those in the family. So you got the A and B documents here. So both the application and the granted patent versions. So we go back to the original document we were looking at. The original document you can see in section will appear here. You can skip a page at a time all the way through that document and again you can jump to specific sections. And again go to the Patten family there if you want to do so and you got options to download and share the pattern there. As I mentioned in the original talk, the citation section shows you document you're looking at any documents from the prior art search cited documents and also citing documents.

So future patent documents that refer back to this one in their prior art. legal events, so for example, in this case, the application has been withdrawn and discontinued it might not always be so clear as it states here. So you might need to look in the help guides. And again, the pattern family breakdown is here so you can see various iterations.

Okay, so if I want to try a new search I can clear this one. this case I'm going to go for tennis shoe And I'm going to use the classification a43. So with 3,000 results so I might think well, okay, maybe I want to be a bit more specific and use advanced search. Maybe I'll search for additional field. So as you can see the advanced search in this case has gone can to a contextual one based on my original search.

Maybe I want to find tennis specifically in the title. Maybe happy for shoes to appear in any Field title abstract or claims Classification codes either IPC or CPC? That's fine. I can add field so maybe I want to narrow the date range and I can put dating say 2000 to 2020 and then I can click search. It's gone down to 42 results. So you can play around and be systematic if you want to do so. Return that to all Fields, not just the title and that expands the number of results, the key word 'tennis'. And when you click on these now, they'll appear in this third column. So it's fairly intuitive and things will stack horizontally.

Another thing you can do is use the filter. So maybe you've got too many results start within the broad search. Let's try 'high speed rail'. I'm going to collapse the advanced search for now 23879 results. It's way too many I could hone my search with the advanced search and or use filters.

Filters are very handy not least for reducing your results in a smart way, but also because they'll give you visualizations. So for example, if you use the chart option, you can look at the countries where these documents are appearing from. Most of these are in this case of my results list from China but if you wanted to visulase that you could view this chart or as the list. Again, you can do so with the publication date languages and other fields. Publication date is interesting because you can see, particularly with new technologies how they grow where they first the patterns of first started appearing and where it's really taken off area of technology, for example. You can move this manually here. Or you have a bit more control you can put in the specific date in this format at the top. And then when you're ready you can apply. You see that's reduce the results somewhat, but as most of them appearing post-2012, it hasn't really changed them in this particular example. You can look at any of the classification codes you can see which ones are being used more often. I'm going to look at the main groups to start with and you can see those here. You click on the link and it gives you the information on what that particular code is and then you can always add that or exclude any that you don't want once you selected them. So for example, I click there. Not apply or exclude.

You can also get a feeling for how many who the applicants and the inventors are, the applicant will usually be an institution behind behind the the patent Google or another Company, for example. An inventor will often be individually named and again, you can view those in a graphical way.

I'm just going to clear my search results now. So you can use the basic, advanced search and the filters and the classification search all in different sort of orders that you want to approach them. So for example you could explore your classifications. Pick out a particular classification code and copy it to your search box in the basic search. You could then move to the advanced search and add more keywords. For example of different kinds you change which fields are looking at or you can go back into this top search here. And add terms so I'm going to truncate socks etc. So you can move effortlessly between those different search options. Going to my queries, you can go back to your previous search history delete any of those, re-run any of those, as I said you can change your settings and you can look at any selected patents. So if I go to my results list, I could select the first 20 in this case, for example.

That's everything I was hoping to show you in this brief introduction. There are more functionalities and other options within the actual platform itself and you can explore that in your own time and always contact us at library@bath.ac.uk if you've got any questions. As you can see it's fairly intuitive to use and where you start and how you compose your search will be the most important things. So don't rely on your first set of results keep trying, it's an iterative process. Try different combinations of key words and think carefully about how you can make sure you don't miss anything that's potentially important to you using combinations of your key terms, classification codes and how you filter and use advanced search to limit and refine your results to those that are most useful to you. And once you explore into those individual patents and into the patent families and other related patent documents just be aware of all the things that we've covered with you already in terms of how to read and understand the patents and make sure that you know what the status of that individual patent document you're interested in is interpreted in terms of whether or not its an application whether its a granted patent, whether its enforced or not. Thank you