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## 1. Schedule 1: Search Skills Syllabus

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### Searching Knowledge

#### S1.1. Background

S1.1.1. What is the difference between data, information and knowledge?

- Information retrieval basics (e.g. precision / recall dilemma)
- Structured data vs flat file (i.e. relational databases vs using internet search engines)
- Command based interfaces vs forms
- Named field searching vs mere keyword input
- Boolean logic and proximity operators
- Truncation and stemming

#### S1.2. Patent and Intellectual Property knowledge for searching

S1.2.1. What kind of industrial property rights exist?

- Different IP rights (copyright, designs, patents, trademarks, utility models, etc)
- Difference between application, publication and granted patent
- Knowledge on territorial coverage (national vs regional and PCT\* applications and priority country)

S1.2.2. What is a patent<sup>1</sup>?

- Patent life spans, opposition procedures, SPCs\*, PTAs\*
- Knowledge on patent law → see Schedule 2
- Different patent publication stages, their significance and their kind codes
- Annuity payments and patent life span, reinstatement, others

S1.2.3. Structure of a patent document (Patent document anatomy)?

- Knowledge of different parts of a patent document (front page, bibliographic data, INID codes\*, title, abstract, description, claims, drawings)
- Patent families – different types

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<sup>1</sup> Minimum required knowledge concerns the major authorities: EP, US, JP, CN, KR, and PCT. Additional understanding of national details may be warranted. It is not intended that the QPIP should have an in depth understanding of each and every country covered, rather an understanding of the overall framework and know where to find national details.

- Claim interpretation – commonly found words – comprising/consisting of etc see further schedule 2

#### S1.2.4. What are important dates in the life of patent?

- Application, priority and publication dates, grace periods
- Duration, expiry
- How to determine whether a patent is “in force”
- How dates relate to prior art, validity and other search types → see Schedule 2

#### S1.2.5. What is a legal status?

- Sources of legal status data (national / federated registers\* vs aggregated data (Inpadoc\*))
- Access to legal status data (national registers)
- Interpretation of legal status codes\*, event classes
- Exceptions to statuses (esp. non-payment of the annual fee and non-entry into national / regional phase restitution)

### S1.3. Databases and patent information resources

#### S1.3.1. What sort of patent data exists?

- Publicly accessible data (Espacenet\*, Google Patents\*, others)
- Knowledge on bibliographic, abstract, full-text and procedure related data (Espacenet\*, Patentscope\*, national office data, registers, others)
- National register data
- Data formats (PDF, XML, HTML, others)

#### S1.3.2. Patent databases<sup>2</sup>

- Publicly available patent data (national, regional offices, registers)
- Commercial databases<sup>3</sup>
- Database documentation
- Database pricing structures
- Database structures (fields, operators, proximity, others)
- Database/Host command language(s)

### S1.4. Searching skills

#### S1.4.1. What is command language?

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<sup>2</sup> It is not expected of a QPIP candidate to be an expert in the syntax of all search environments, but rather understand the basic structure, data coverage and advantages/disadvantages of different systems.

<sup>3</sup> It is recommended to have a thorough knowledge of at least one of the major commercial provider and being able to work with at least two.

- How to enter commands
- How to access databases
- How to find information on the structure of the database
- Search history: documentation of search steps
- Knowledge of available display commands and their respective formats
- Searching numerical properties of entities (length, weight, conductivity, etc)
- Fielded searching: how to search fields (field=, /field, others)
- Dividing a search into a multitude of search steps
- Combining / re-using earlier search statements
- Knowledge of miscellaneous commands (Expand, Select, Analyse, others)
- Meaningfully combine data (e.g. dates and kind codes)

#### S1.4.2. How to prepare a patent search?

- Resources for technical background (e.g. Wikipedia etc.)
- Linguistic resources (dictionaries, translation services. PatentScope\*)
- Where to find database documentation e.g. database factsheets
- Database provider's information resources (database description, guide to commands, best practice examples)

#### S1.4.3. How to find valid keywords?

- Knowledge of dictionaries and foreign language interfaces (e.g. PatentScope, Google Translate, others)
- Using a database's keyword highlighting functionality to help evaluate results
- Extracting meaningful search words from a search request
- Knowledge on how to choose from scanning exemplary hits (rough first hit set)
- Use of citing and cited patents
- Combining keywords into concepts

#### S1.4.4. What to consider when faced with a Name search?

- Using the Expand command for expanding on a company name root
- Using the corporate tree mechanism in patent databases
- Where to find information on Applicants (e.g. corporate websites)
- Company structures and affiliations
- Where to find ownership information in patent legal status

## S1.5. Classification and specialist searching

### S1.5.1. What is patent classification?

- IPC\* based classification (CPC\*, DEKla\*, FI\*)
- Other public non-IPC based classification (F-terms\*, USClass\*)
- Commercial non-IPC based classification (Derwent Class\* and Manual Code\*)
- Basic knowledge of classification for other IP rights (Nice\*, Locarno\*, Vienna\*, etc.)

#### S1.5.2. How do you find the right classification?

- WIPO\*, EPO\*, GPTO\*, USPTO\* and JPO\* office classification sites
- Availability of different search facilities (e.g. WIPO search in class definition text vs EPO search in limited number of patent documents and statistical display)
- Use of classification thesauri in patent databases
- Using analysis keyword search results for finding classification

#### S1.5.3. How do you find chemical data<sup>4</sup>?

- CAS registry number (finding numbers through Registry, internet)
- Structure searching (when it is suitable and when not)
- Using roles in relation to chemical entities
- Linking of chemical aspects to the chemical entity
- Chemical nomenclature and finding synonyms/common words
- Chemical name searching/controlled terms in Patbase, Derwent, Chemical Abstracts
- Generics vs specific compounds in chemistry
- Polymer searching in CAS, WPI etc
- Sequence searching in different databases and how to conduct them

#### S1.5.4. How do you find biological data<sup>5</sup>?

- Sequence searching in different databases and how to conduct them
- Nucleic acid and protein searches within sequence databases (e.g., Registry, USGENE, GeneSeq, GeneSeq FASTAlert, GQ-Pat)
- Sequence search strategies, when to use which algorithm (e.g. Motif, subsequence, similarity)
- Information on terminology, taxonomy, genome, mapping, protein structure and domains
- Antibody numbering: IMGT, Eu and Kabat

#### S1.5.4. What is a citation search?

- What a citation in a patent document means

<sup>4</sup> Specialist knowledge only required within the QPIP candidate's own technical field

<sup>5</sup> Specialist knowledge required within own technical field as 4

- Difference between examiner and applicant citations
- Difference between forward and backward citations
- How to search for citations in databases
- Citation categories (e.g. "X", "Y" and "A" located in EPO / WIPO search reports)

## In practice

### S1.6. Prior art searching

#### S1.6.1. What to consider when faced with a state of the art search?

- Combining keywords into concepts
- Knowledge on keyword and classification search and the combination of both
- Knowledge on exactitude vs completeness of search result (precision vs recall)
- Report writing: Identifying relevant parts of patents/literature to cite to client

### S1.7. Validity/opposition searching

#### S1.7.1. What to consider when faced with an opposition search?

- Knowledge on priority dates / grace periods to allow suitable time frame to be searched
- Which part of document should be searched
- Use of citation searches
- Claim interpretation ((in-) dependent, preamble, characterizing part)
- Subject matter eligible for prior art, obviousness
- Non-patent literature sources
- Report writing: Identifying relevant parts of patents/literature to cite to client

### S1.8. Patent infringement risk searching

#### S1.8.1. What to consider when faced with a patent infringement risk search?

- Identifying intended markets for scope of search – limiting to countries of interest and regional counterparts
- Translation of important features into a search strategy
- How to determine a potentially infringed patent by a product
- Extracting important features from search request / product description for searching
- Determining time scale for searching potentially 'in force' patents → see Schedule 2
- Knowledge on identifying product features in claim language
- Searching/evaluating claims to assess relevancy
- Determining the status of a patent to determine whether it is still in force or pending patents → see Schedule 2

- Report writing: neutral language and words to avoid when reporting potentially threatening patents (e.g. words that should be avoided including “valid” “infringe” etc)

## **S1.9. Patent landscaping and statistics**

### S1.9.1. What to consider when faced with a landscape search?

- Understand the purpose of the request: what is the real question of your customer?
- Basic knowledge of statistics
- Knowledge of publicly available data (patent offices, PatStat\*) / commercial offerings
- In-depth knowledge of database structure, data fields and operators
- Knowledge on how to check assignee data for company cross-ownerships / acquisition
- Meaningfully combine data (e.g. dates and kind codes)
- Deep understanding of Recall and Precision and how this balance is linked to the purpose of the project

## **S1.10. Post processing results and preparing reports**

### S1.10.1. How to post process your results?

- Downloading search results
- Data formats (e.g. plain text, csv, XML, PDF, others)
- How to integrate your search result into a word processing or spreadsheet program
- How (and how not) to formulate your findings / conclusions
- Report writing: what not to write in your search report
- Cleaning data; benefits and when this should be done (for landscaping)

### S1.10.2. How do you document your work?

- How to save your search steps for future reference and / or re-use
- Knowledge about the steps in your preparation, search and client communication to document for future reference
- Identifying important parts of your search to check and update when re-using a search at a later point in time

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## 2. Schedule 2: Patent Law and Analysis Skills Syllabus

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### Legal knowledge

#### S2.1. Document types

S2.1.1. What kind of a document is this?

- Difference between patent, utility model, other publications
- Patent publication types (for example, what does A1, B9 mean?)
- Regional specifics on publication of patent docs: when, where, etc.
- Filing, prosecution and granting procedures

#### S2.2. Territorial scope of the patent document

S2.2.1. For which countries could this document be important?

- Concept of patent family
- Relevance of equivalents (e.g. application is less relevant when there is a granted patent)<sup>6</sup>
- Different patent organisations, in which phase they may be encountered and their coverage: PCT, EPC, Eurasia, ARIPO, OAPI, Unitary patent

#### S2.3. Patent duration

S2.3.1. When does this patent expire?

- Filing date and filing requirements
- Patent lifecycle regulations
- Life time of patents and utility models
- Difference between application and grant
- Annuity fee payments and registration thereof
- National registers
- Patent life extension possibilities (SPC, PTA)
- Abandonment notifications and repair procedures (EPC Art. 121 and 122)
- Invalidation procedures after grant (opposition, re-examination, etc)

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<sup>6</sup> Understand when preferably to look for broadest scope, correction documents, or granted patents amongst corresponding family members.

## S2.4. Claim interpretation

### S2.4.1. What kind of claims does the patent have?

- Difference between product and process claims
- Different claim types (Jepson, product-by-process, medical use)
- Specific claim terms – definitions ('for', 'preferably')
- Scope of specific types of claims (product-by-process, medical use)

## S2.5. In practice

### S2.5.1. Infringement (what constitutes infringement?)

- Legal actions on infringement<sup>7</sup>

## S2.6. Patentability

### S2.6.1. Determine inventive features<sup>8</sup>

- Novelty requirements and grace periods
- Definition of prior art (e.g. Art. 52 and 54 EPC, 35 USC §102)
- When documents are public documents
- If documents (e.g. from internet) may be used as prior art
- How prior art docs should be interpreted
- Regional differences in combining documents and potential pitfalls

## S2.7. Invalidation

### S2.7.1. Setting up a claim chart

### S2.7.2. Interpretation of claims

- Influence of specification on claim interpretation
- Interpretation based on Dictionary/heavy presumption

### S2.7.3. What documents to choose?

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<sup>7</sup> The candidate is *not* expected to make any judgment. He/she should merely be able to read claims and understand their limitations.

<sup>8</sup> The candidate is *not* expected to state whether a product/process is novel or inventive.



- “submarine” patent applications with earlier priority date but later publication, what prior art may be used and under what terms (Art. 54 3 EPC)

S2.7.4. If I want to invalidate this claim which cut-off date do I need to use in my search?

- Determination of effective date (e.g. divisional, continuation application (CON), Continuation-in-part application (C-i-P))
- Priority (Art. 4C Paris Convention, Art. 87 EPC)
- Grace periods
- Novelty requirements

S2.7.5. How can this patent be invalidated?

- Invalidation proceedings: opposition, re-examination, etc., national court invalidation actions
- Formal requirements for these procedures and time limits
- Grounds for invalidation (e.g. grounds of opposition)

## S2.8. Patent Infringement

- What documents to select, only patents. Also need to consider "submarine" patents (those that are only published when granted)
- Legal status – how to decide whether it is still in force/pending<sup>9</sup>
- Time limits – depending on whether SPC could be in force<sup>10</sup>.

## S2.9. Patent landscaping

- Family structures
- Patent ownership
- Citations: types, networks
- Automatic legal status estimation (on family level)
- Supervised and unsupervised clustering
- White spot analysis (feature matrix)
- Value indicators
- Visualization
- Reporting: an answer to the “real” question

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<sup>9</sup> The candidate should not make statements about invalidity.

<sup>10</sup> The candidate is expected to understand the difference between the priority date(s) and the filing date.