



# A Framework of Technical Competencies and its Use for Assessments of Patent Examiners

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Daejeon  
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# Agenda

- Competency framework/dictionary/model
- Moodle-based implementation
- Level of detail
- Ordering
- Wording
- Competence scales
- Cross-referenced competencies

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English - United States (en\_us)

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# Front page

## WIPO ASPAC Bureau Individualized Competency Based Learning Management

### WIPO

This is a test site for implementing the individualized and competency based patent examiner training management.

### COURSE CATEGORIES

- International legal framework
- National legal framework
- Search methodologies
- Miscellaneous

[All courses ...](#)

### NAVIGATION

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**Don't worry about your **TRAINING**,  
we'll create and provide **OPPORTUNITIES**.**

### Site announcements



#### ASPAC ICBLM born

by - [Admin](#) - - Saturday, 25 February 2017, 9:59 am

We are happy to announce that a new baby of the WIPO ASPAC Bureau has been born on February 23, 2017, named ASPAC **Individualized and Competency Based Learning Management**. We trust it gradually growing to a fully fledged application capable to support all aspects of managing the vocational training of individual substantive patent examiners from recruitment to full expertise in all areas of an individually

### LOGIN

Username

Password

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# Competencies

Home > Site administration > Competencies > Competency frameworks

## ADMINISTRATION

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    - Competency frameworks**
    - Learning plan templates
  - Badges
  - Location
  - Language
  - Plugins
  - Security
  - Appearance
  - Front page
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## Competency frameworks

- Add new competency framework
- Competency frameworks repository

### List of competency frameworks

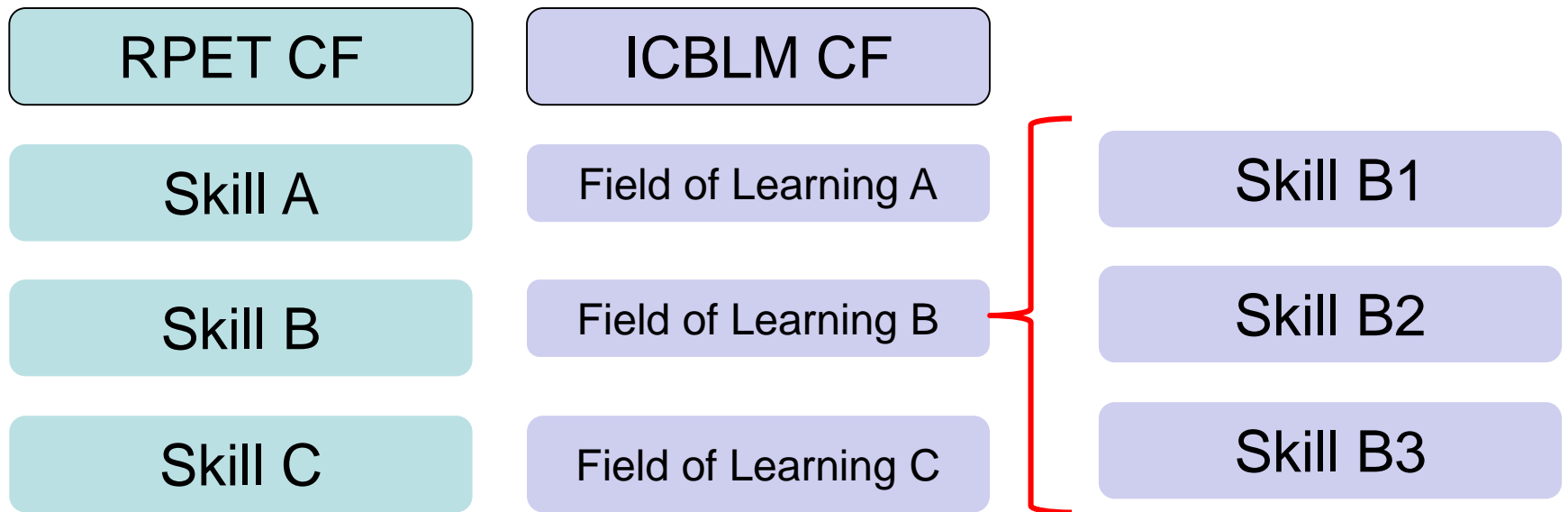
Name	Competencies	Category	Actions
ICBLM patent examiner competency framework (ICBLMpe1)	218	System	<a href="#">Edit</a>
IPET Competencies (C1.0)	101	System	<a href="#">Edit</a>
OJT BT PH (OJTBTPH)	11	System	<a href="#">Edit</a>
Substantive Patent Examination (x)	28	System	<a href="#">Edit</a>





# Competency frameworks

- Moodle can accommodate various competency frameworks



# Competency model/framework/dictionary

- Competencies derived from/related to job descriptions: "job deliverables"
- Different categories
  - Behavioral, e.g. communication, managing,...
  - **Technical (functional) competencies**
- To attain/demonstrate a specific technical competency, a set of distinct
  - **skills** and
  - **knowledge** elements is required

# Sample: RPET set of 23 technical skills

- Interpret specifications in accordance with rules of construction
- Consider the description
- Determine the invention
- Determine the scope of claims
- Consider clarity
- Consider clear and complete disclosure and full support
- Consider excluded subject matter
- Consider unity of invention
- Construe the scope of each claim (with regard to novelty and inventive step)
- Consider industrial applicability
- **Develop an effective search strategy**
- **Conduct online search**
- Determine relevant prior art
- Undertake appropriate record keeping



# Sample: RPET set of 23 technical skills

- Determine if novelty exists
- Determine common general knowledge
- Determine if an inventive step exists
- Demonstrate knowledge and application of IPC system for indexing
- Produce first reports/opinions
- Consider amendments and/or arguments
- Determine the allowability of the amendments
- Demonstrate decision-making capability when considering attorneys'/ applicants' submissions
- Produce further reports (clear or adverse)

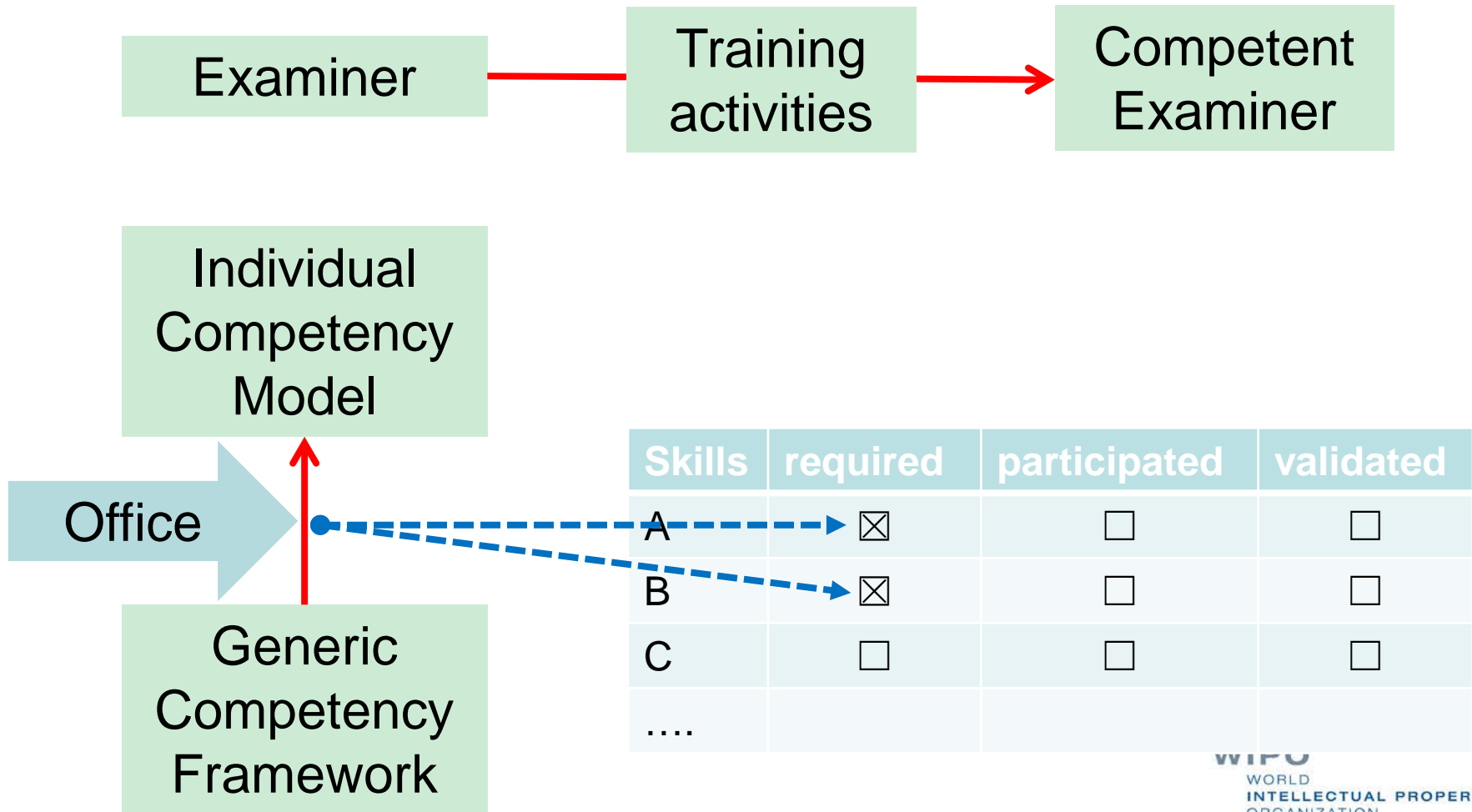
# Competencies and training

- No "one fits all" approach:
  - Different organizations
  - Different individuals (job descriptions)
- Different competencies required depending on
  - How an office organizes substantive examination
    - Stand alone substantive examination (middle to large offices)
      - IPET, RPET: (more) emphasis on **prior art search skills**
    - Outsourcing (small offices): emphasis on **outsourcing skills**
  - Additional skills needed for further activities like IP promotion, advisory services for applicants, ...

# Why do we need detailed competency models?

- Sufficiently detailed competency models/frameworks facilitate, **in standardized manner**,
  - Define individualized competency models
  - Efficient communication of training needs
    - From beneficiary to provider/WIPO & WIPO to provider/donor
  - Definition of prerequisites for training activities (by provider)
  - Description of course content (by provider) (syllabus)
  - Standardized tracking of training progress in terms of competencies
    - Participation
    - Success of learning
  - Reporting

# Defining individual competency model



# Customizing competency frameworks

## Options for defining customized CFs

- Each institution selects required competencies from generic CF
  - Different custom CF are compatible
  - Generic CF needs to be sufficiently comprehensive
  - Generic CF should be developed as cooperation between institutions
  
- Each institution develops its own custom CF independently of other institutions, using proprietary wording, hierarchy,..
  - Different custom CF may not be compatible

# Lack of detail?

## Sample: IPET competency units

Unit 2:	Construe patent specifications
Unit 3:	Evaluate patent specifications
Unit 4:	Assess novelty
Unit 5:	Assess inventive step
Unit 6:	Classify patent applications
Unit 7:	Conduct searches
Unit 8:	Produce examination reports

What **knowledge** and **skills** are required to conduct a prior art search?

## Unit 7: Conduct searches

### Elements and performance criteria



<b>ELEMENTS</b> <i>Elements describe the essential outcomes.</i>	<b>PERFORMANCE CRITERIA</b> <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine appropriate search strategies.	
2. Consider excluded subject matter.	
3. Conduct online search.	
4. Identify and retrieve relevant documents.	
5. Undertake appropriate record keeping.	





## Selected competency

No competency selected

Navigation

Administration

- ▼ ICBLM patent examiner competency framework
  - ▶ International Legal and Institutional Framework
  - ▶ National Legal and Institutional Framework
  - ▶ Patent Information
  - ▶ Patent Classification
  - ▶ Generic Substantive Examination
  - ▶ Technology Specific Substantive Examination
  - ▼ Generic Search Methodologies
    - ▶ Query Syntax, Operators and Field Identifiers
    - ▶ Keyword Search
    - ▶ Classification Search
    - ▶ Name Search
    - ▶ Date Search
    - ▶ Number Search
    - ▶ Precision and Recall
    - ▶ Search Strategy
    - ▶ Citation Search
    - ▶ Similar Documents
    - ▶ Family Reduction
  - Filtering, Sorting, Ranking of Results
  - Natural Language Search; Fuzzy Search
    - ▶ Language Equivalents
  - Types and Objectives of Searches
  - Screening and evaluating result lists
  - Cross Lingual Searches
  - Cross Database Searches
    - ▶ Specific Search Methodologies
  - ▶ Technology Specific Search Methodologies
  - ▶ Databases and Tools for Prior Art Search
  - ▶ Work Sharing
  - ▶ Formality Examination




# Ordering competencies/skills/knowledge?

- Greater level of detail will lead to a larger number of skills and knowledge elements
  - How to organize a larger number of skills/knowledge elements?
  - Grouping in different **fields of learning**?
  - Related to job specific tasks?
  - Do we need additional hierarchy?
- 
- Compare with IPC scheme

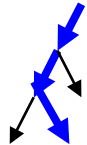
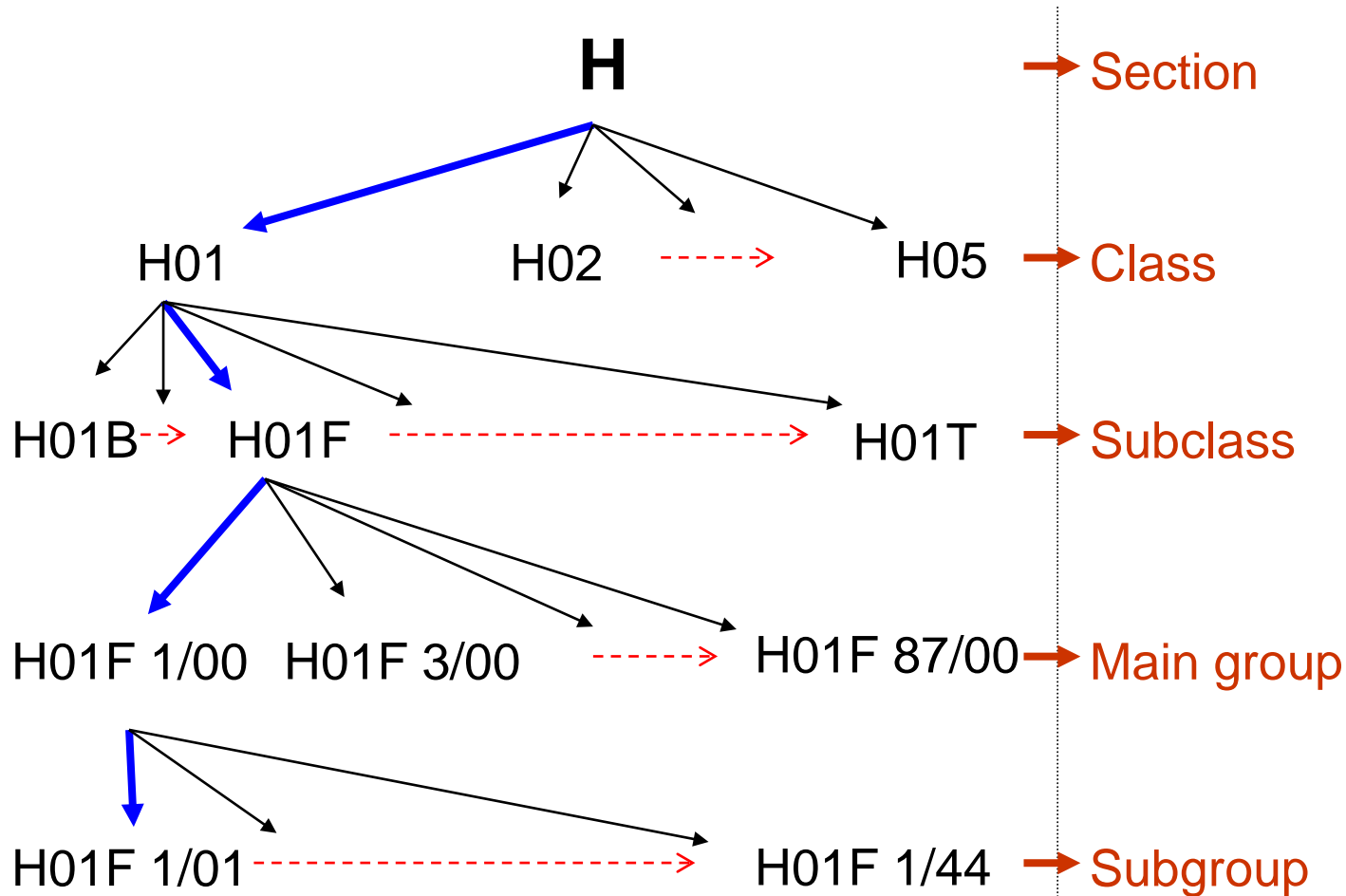
# IPC logical/hierarchical structure

- ▶ hierarchical top level: 8 Sections

<b>A</b>	<b>SECTION A — HUMAN NECESSITIES</b>
<b>B</b>	<b>SECTION B — PERFORMING OPERATIONS; TRANSPORTING</b>
<b>C</b>	<b>SECTION C — CHEMISTRY; METALLURGY</b>
<b>D</b>	<b>SECTION D — TEXTILES; PAPER</b>
<b>E</b>	<b>SECTION E — FIXED CONSTRUCTIONS</b>
<b>F</b>	<b>SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING</b>
<b>G</b>	<b>SECTION G — PHYSICS</b>
<b>H</b>	<b>SECTION H — ELECTRICITY</b> 

next slide

# IPC hierarchical structure



# Fields of learning (domains)

Modified since  
previous workshop

- Intellectual property protection
- National intellectual property protection
- PCT system
- Patent information
- Patent classification
- Formality examination
- Generic search methodologies (Prior art retrieval)
- Technology-specific search methodologies (Prior art retrieval)
- Search and examination databases and tools (Prior art retrieval)
- **Generic substantive examination**
- Technology-specific substantive examination
- Work-sharing
- Procedural and other administrative tasks
- Supplementary

# Competencies

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- ▶ Language
- ▶ Plugins
- ▶ Security
- ▶ Appearance
- ▶ Front page
- ▶ Server

## ICBLM patent examiner competency framework \*

### Competencies



- ▼ ICBLM patent examiner competency framework
  - ▶ International Legal and Institutional Framework
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  - ▶ Patent Classification
  - ▶ Generic Substantive Examination
  - ▶ Technology Specific Substantive Examination
  - ▶ Generic Search Methodologies
  - ▶ Technology Specific Search Methodologies
  - ▶ Databases and Tools for Prior Art Search
  - ▶ Work Sharing
  - ▶ Formality Examination
  - ▶ Procedural Tasks of Patent Prosecution
  - ▶ Miscellaneous

### Selected competency

No competency selected

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  - Appearance
  - Front page
  - Server
  - Reports
  - Mobile app
  - Development
  - Assignment upgrade helper

# ICBLM patent examiner competency framework \*

## Competencies

Search...



- ICBLM patent examiner competency framework
  - International Legal and Institutional Framework
  - National Legal and Institutional Framework
  - Patent Information
    - Construction of Patent Documents
    - Types and Categories of Claims (Claim Construction)
      - Types of Data and Information
      - Publication of Patent Information
        - Types of Published Patent Documents
        - Publicly Accessible Patent Information
      - Patent Family Relations
      - WIPO Standards
    - Patent Classification
    - Generic Substantive Examination
    - Technology Specific Substantive Examination
    - Generic Search Methodologies
    - Technology Specific Search Methodologies
    - Databases and Tools for Prior Art Search
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Search

# ICBLM patent examiner competency framework

## Edit competency framework

### General

Name\* ICBLM patent examiner compete

Description

[Rich text editor toolbar with icons for bold, italic, list, link, unlink, smiley, image]

ID number\* ICBLMpe1

Scale\* ? Default competence scale

Configure scales

Visible ? Yes

Category System

### Taxonomies

- Level 1 Domain
- Level 2 Level
- Level 3 Competency
- Level 4 Skill

Naming of hierarchical levels



# Hierarchical structure

- Each field of learning is divided in separate units
- Do we need further divisions? Sometimes
- Similar to the IPC:
  - Subdivisions only serve the purpose of (thematic) ordering
  - The more skills/knowledge elements need to be ordered, the more subdivision/levels of hierarchy may be needed
  - May strongly depend on the subject matter

# Hierarchical structure

- Each field of learning was divided in separate units
- First layer: 'Fields of learning'
- Second layer
- ...
- Lowest layer: Each element on the lowest level/layer may represent either
  - **Skill**
    - "Capable to research family information for a given application"
  - **Knowledge**
    - "Capable to explain the concept of a 'simple family'"
- Some elements may be represented both as knowledge or skill
  - Capable to describe the concept of family reduction (knowledge)
  - Capable to test if a specific database applies family reduction (skill)

# Competence scales

## WIPO ASPAC Bureau Individualized Competency Based Learning Management

Home > Site administration > Grades > Scales

Blocks editing on

### ADMINISTRATION

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  - Grade category settings
  - Grade item settings
  - Scales**
  - Letters
    - Report settings
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### Custom scales

### Standard scales

Scale	Used	Edit
Default competence scale Not yet competent, Competent	Yes	
Staggered competency levels not competent, basic competence, medium competence, competent, expert	Yes	
Self assessment staggered Very Low, Low, Medium, High, Very High	Yes	

Add a new scale

Competence is assessed by means of course activities, such as 'quizzes', 'assignments',...

# Crossover of skills/knowledge

- Particular skills/knowledge may be associated/required for several distinct examination tasks, as well as non-examination tasks (competencies)
- For example:
  - 'Construing claims' is needed for assessment of novelty, of inventive step, clarity of claims, preparing a search
  - 'Interpreting a limiting reference in IPC' is needed for
    - Classifying a patent application
      - Before publication/substantive examination
      - Reclassification before grant
      - Reclassification with IPC revisions
    - Identifying suitable IPC codes for search task
    - Patent analytics
- Should the same skill be repeated in several respective places of the framework?

# Crossover of skills/knowledge

- Crossover: skill/knowledge is required for different competencies
- How to reflect crossover in the framework?
  - (i) Repeated entries, possibly with adapted wording; or
  - (ii) Only once in its respective generic field of learning ('classification')?
- Current preference is (ii)
  - Framework shouldn't attempt to reflect workflow/procedure
  - Framework shouldn't **This is solved now !** of examination procedure (for example how to examine novelty)
  - Such procedures may depend on national specifics
  - Framework should only attempt to establish a comprehensive inventory of potentially relevant skills and knowledge (dictionary)
  - Each skill/knowledge element should therefore appear only once in dictionary

# Cross-referenced competencies

## Competencies

Home ▶ Site administration ▶ Competencies ▶ Competency frameworks ▶ ICBLM patent examiner competency framework

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## ICBLM patent examiner competency framework \*

Generic CF focusing on technical competencies for substantive patent examiners.

### Competencies

Search... 

- ICBLM patent examiner competency framework
  - International Legal and Institutional Framework
  - National Legal and Institutional Framework
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  - Technology Specific Substantive Examination
  - Generic Search Methodologies
  - Technology Specific Search Methodologies
  - Databases and Tools for Prior Art Search
  - Work Sharing
    - Family Relations
    - Examination Status of Family Members
    - Examination Work Products
    - Citations
    - Claims and Amendments
    - Platforms/databases/tools for work sharing

### Selected level

Family Relations W.F

Edit ▾

#### Cross-referenced competencies:

Patent Family Relations PI.F

✕

+ Add competency



# Skill wording suitable for assessments

ASPAC ICBLM

- Dashboard
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  - Generic Substantive Examination
  - Technology Specific Substantive Examination
  - Generic Search Methodologies
    - Query Syntax, Operators and Field Identifiers
    - Keyword Search
    - Classification Search**
      - Determine relevant classification symbol(s) for given subject matter to be searched
      - For a given IPC symbol, find other symbols relevant for search
      - Determine relevant classification symbols by means of keyword search of patent documents
      - Determine relevant classification searches by using the catch word index of the IPC
    - Name Search
    - Date Search
    - Number Search



### Selected competency

No competency selected



# Issues

- Do we need knowledge & skill elements? Or skills only (wording knowledge as skill)?
- When should we create subdivisions to facilitate thematic ordering?
- Do we need repetitions of elements in different parts of the framework when skills are associated with several distinct examination tasks?
- Should the framework include proficiency levels and their definitions?
- Should the framework flag certain knowledge/skills as mandatory? Or others as optional?
- How do we reflect aspects of national practice?
- Do we need symbols to identify each framework element, like in the IPC?

Thank you

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