



# How patents work: basics of patent protection systems

## *Politecnico di Torino*



## DISCLAIMER

- The present document has freely been assembled from the author who is the only owner. It is partially based on the teaching materials made available from the EPO (European Patent Office), which have subsequently been adapted and edited from the author under its own responsibility.
- The following lecture will deal mainly with the functioning of the International and European IPR protection systems. It is firmly advised that you will review and get knowledge of both your respective National Systems and International bodies and regulations when it will come to the real practice.
- Remember there are professional attorneys and consultants out there to help.

# Agenda:

- PATENTS
- PATENT PROCEDURES



➤ **PATENTS**

➤ **PATENT PROCEDURES**

# Protect ideas/inventions: Intellectual Property Rights

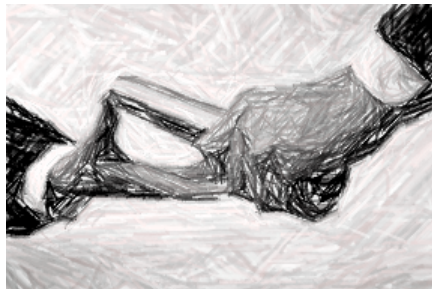
Legal Right	What for?	How?
Patents	New inventions	Application and examination
Copyright	Original creative or artistic forms	Exists automatically
Trade Marks	Distinctive identification of products or services	Use and/or registration
Registered designs	External appearance	Registration
Trade secrets	Valuable information not known to the public	Reasonable efforts to keep secret

# The «social contract» implicit in the patent system

Reveal  
invention  
(disclosure)



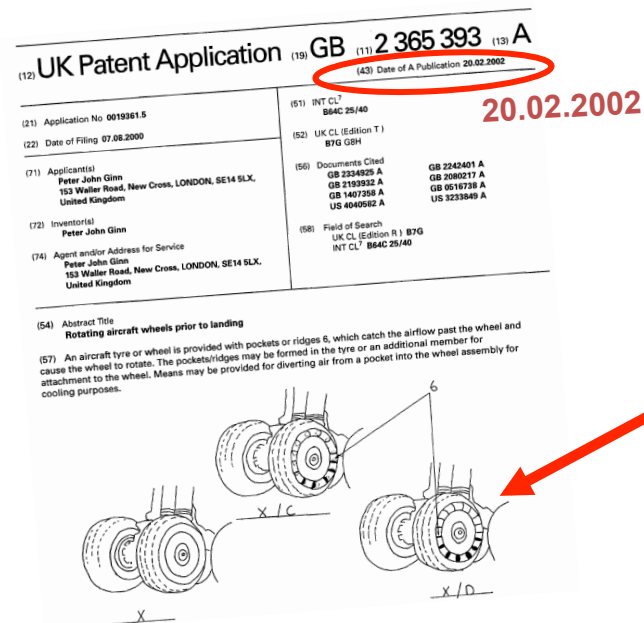
Get  
exclusivity  
(patent)



...in this way other people will  
take advantage from the  
innovation and continue to build  
upon existed knowledge to foster  
societal growth!

# Re-inventing the wheel - literally

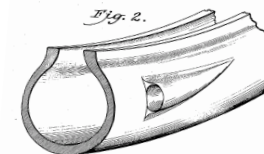
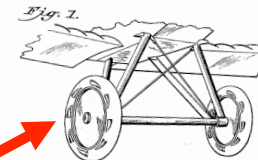
- 15-25% of all R&D efforts are wasted each year on inventions that have already been invented.
- Don't start your R&D until you have done a search!



US-A-1833019 - 24.11.1931

Nov. 24, 1931.

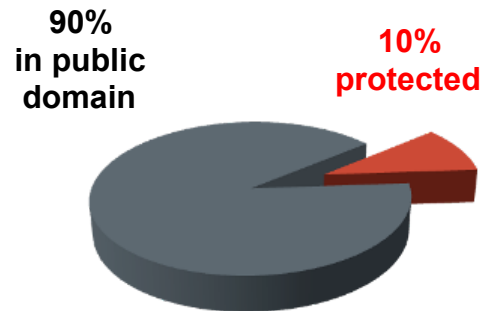
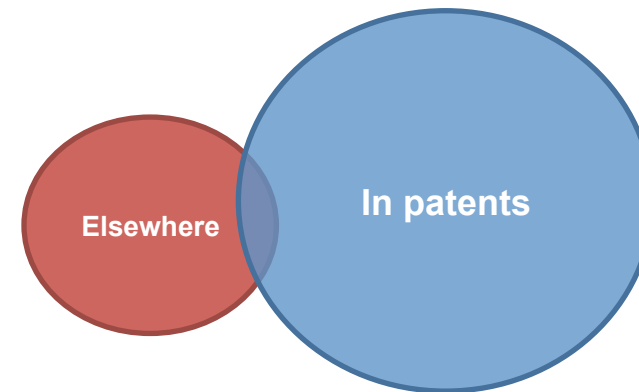
J. A. FAUCHER ET AL.  
AIRPLANE TIRES  
Filed Nov. 1, 1929  
1,833,019



# Solutions found in patent documents

Where do competitors  
publish their R&D?

Approximately 80% of the information  
which can be found in patents is not available  
anywhere else in comparable detail.



**You can find many  
great solutions for free!**

Reasons

- Applications rejected/withdrawn or patent invalidated
- Payment of renewal fees discontinued
- Patents have lapsed



# inventions...inventions and patents

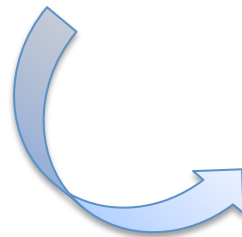
## *What is an invention?*

*“An original solution to a technical problem”*



For an invention to be patented, it must usually be

- ✓ **new** to the world (i.e. not available to the public anywhere in the world)
- ✓ **inventive** (i.e. not an "obvious" solution), and
- ✓ susceptible **of industrial application**

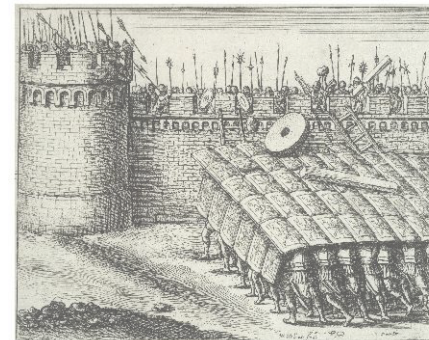


### **EPO Convention - Art. 52 “Patentable Inventions” :**

European patents shall be granted for any inventions, in all fields of technology, provided that they are **new**, involve an **inventive step** and are susceptible of **industrial application**.

# Rights conferred by patents 1/2

- Right to prevent others from making, using, offering for sale, selling or importing infringing products in the country where the patent was granted
  - **Exception:** non-commercial purposes (private use, academic research)
- Right to assign, sell or license these rights
- For a limited time (up to 20 years).



# Rights conferred by patents 2/2

## ► Does a patent give you the right to exploit an invention?

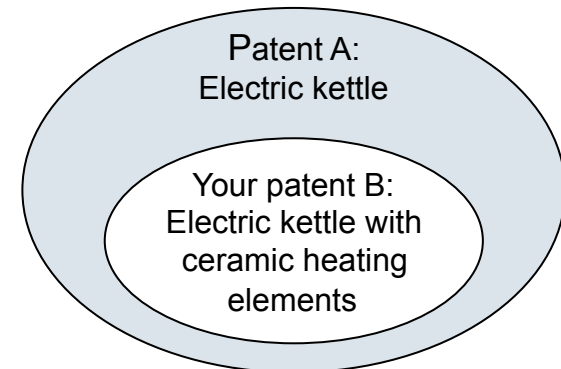
- A patent is a negative right.

It gives you the right to prevent others from exploiting the invention.

**It is not an enabling right.**

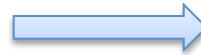
- Patents owned by others may overlap or encompass your own patent.  
-> Seek a licence before commercialising

For example:



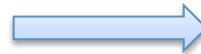
# Patentability requirements

➤ **Novelty**



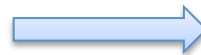
Is it new?

➤ **Inventive step**



Is it original/inventive?

➤ **Industrial application**



Is it apt to be produced at the industrial level?

# Patentability requirements: Novelty



## Art. 54 EPO Convention:

- **DEFINITION:** An invention shall be considered to be **new** if it does not form part of the state of the art.
- **State of the Art:** everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.



Prior disclosure of invention before the date of filing a patent application can invalidate the patent application.

**It is fundamental to keep it confidential.**

# “Absolute Novelty” - “Grace period”

- Novelty Standards vary from country to country
- Grace periods : in some countries still able to fulfill novelty requirement within one year of an invention disclosure or offer of sale (US, China, Japan, Mexico etc.. )
- EPO Convention reflects the principle of “**Absolute Novelty**”: filing of application must precede any public invention disclosure  
(Also known as: “strict novelty requirement”)

# Patentability requirements: “Inventive step”

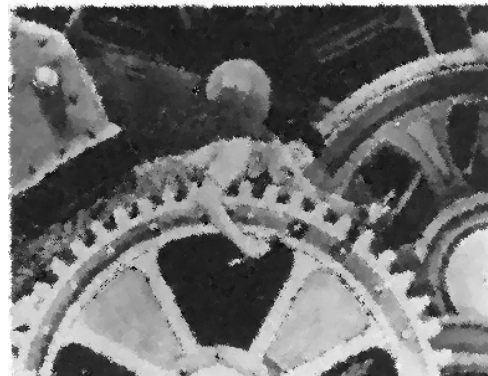
- **Art. 56 EPO Convention:** an invention shall be considered as involving an inventive step if, having regard to the state of the art, **it is not obvious to a person skilled in the art.**

The skilled person is a legal fiction. The concept of the skilled person means a practitioner with general technical knowledge in the relevant technical field. He or she is assumed to have access to the entire state of the art and to be capable of performing routine work and experimentation, but to be devoid of inventive skills.



# Patentability requirements: “Industrial application”

- **57 EPO Convention:** An invention shall be considered as susceptible of *industrial application* if it can be made or used in any kind of industry, including agriculture.



- European approach to assess inventive step is to employ a “Problem solution analysis”.



# Exception to patentability

- Discoveries, mathematical theories
- Aesthetic creations
- Playing games, software, methods of doing business
- Therapeutic and diagnostic methods
- Inventions contrary to morality
- Plant or animal varieties



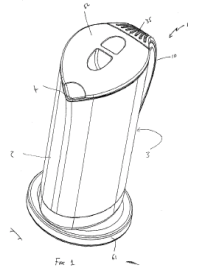
# What do patent documents look like?

Date of publication

Date of filing

Applicant

Abstract

 Europäisches Patentamt European Patent Office Office européen des brevets		 (11) EP 1 520 497 A2
EUROPEAN PATENT APPLICATION		
(43) Date of publication: 06.04.2009 - Bulletin 2009/14	(51) Int. Cl.: A47G 19/22, C02F 1/00	
(21) Application number: 04256130.8		
(22) Date of filing: 04.10.2004		
(84) Designated Contracting States: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LJ LU MC NL PL PT RO SE SI SK TR Designated Extension States: AL HR LT LV MK	(72) Inventor: Scott, Michael James Isle of Man IM5 5PH (GB) (74) Representative: Samuels, Adrian James Frank B. Dehn & Co., 179 Queen Victoria Street London EC4V 4EL (GB)	
(30) Priority: 03.10.2003 GB 0323237 27.02.2004 GB 0404295	Remarks: A request for correction of the drawings has been filed pursuant to Rule 88 EPC. A decision on the request will be taken during the proceedings before the Examining Division (Guidelines for Examination in the EPC, A.V. 3.1).	
(71) Applicant: STRIX LIMITED Ronaldsway, Isle of Man IM9 2RG (GB) Designated Contracting States: DE FR IT		
(54) Water Storage Apparatus (57) A water treatment and storage vessel has a reservoir 50 for untreated water and filter means 51 in fluid communication with the reservoir 50. A main vessel portion 2 is provided for receiving and storing treated water which comprises a Peltier-effect device 25 for removing heat from treated water therein, thereby cooling the water.		
 EP 1 520 497 A2 Printed by Jouve, 75001 PARIS (FR)		

Application number

Technical class

Inventor

Claims

1. A portable water treatment and storage vessel comprising:

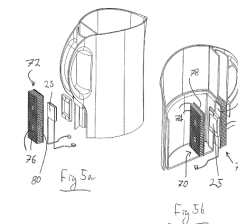
a reservoir for untreated water;  
 filter means in fluid communication with said reservoir; and  
 a main vessel portion for receiving and storing treated water;

wherein said main vessel portion comprises electro-thermal cooling means for removing heat from the treated water therein, thereby cooling the water.

Claim(s)



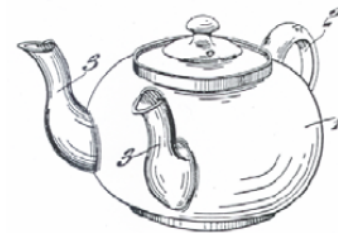
Description



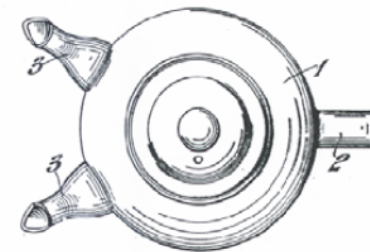
Drawing(s)

# What does the description contain?

- Prior art
  - *teapot with one spout*
- Drawback of prior art
  - *time-consuming*
- Problem to be solved
  - *reduce filling time for multiple cups*
- Solution
  - *provide a second spout*
- Advantage of the invention
  - *filling time is reduced*



*Fig. 1.*



*Fig. 2.*

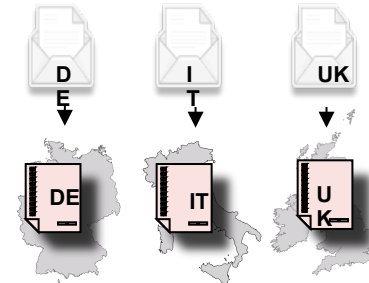


➤ PATENTS

➤ **PATENT PROCEDURES**

# Territorial basis

- ▶ Patents are valid on a **territorial basis**
- ▶ To seek wide protection one needs to file multiple patent applications covering the same invention in each country of interest



- ▶ **The Paris convention and other international agreements solve this issue, offering various advantages.**

- ▶ Less filing expenses
- ▶ More time to take decisions and define proper strategies

**Proper deadlines and procedures must be respected**

# How to apply for a patent

## NATIONAL PATENT

Patent applications need to be filed before your country' National Patent Office (NPO).

## EUROPEAN PATENT

One single application, in one official language may be filled:

- At your NPO, or
- at European Patent Office

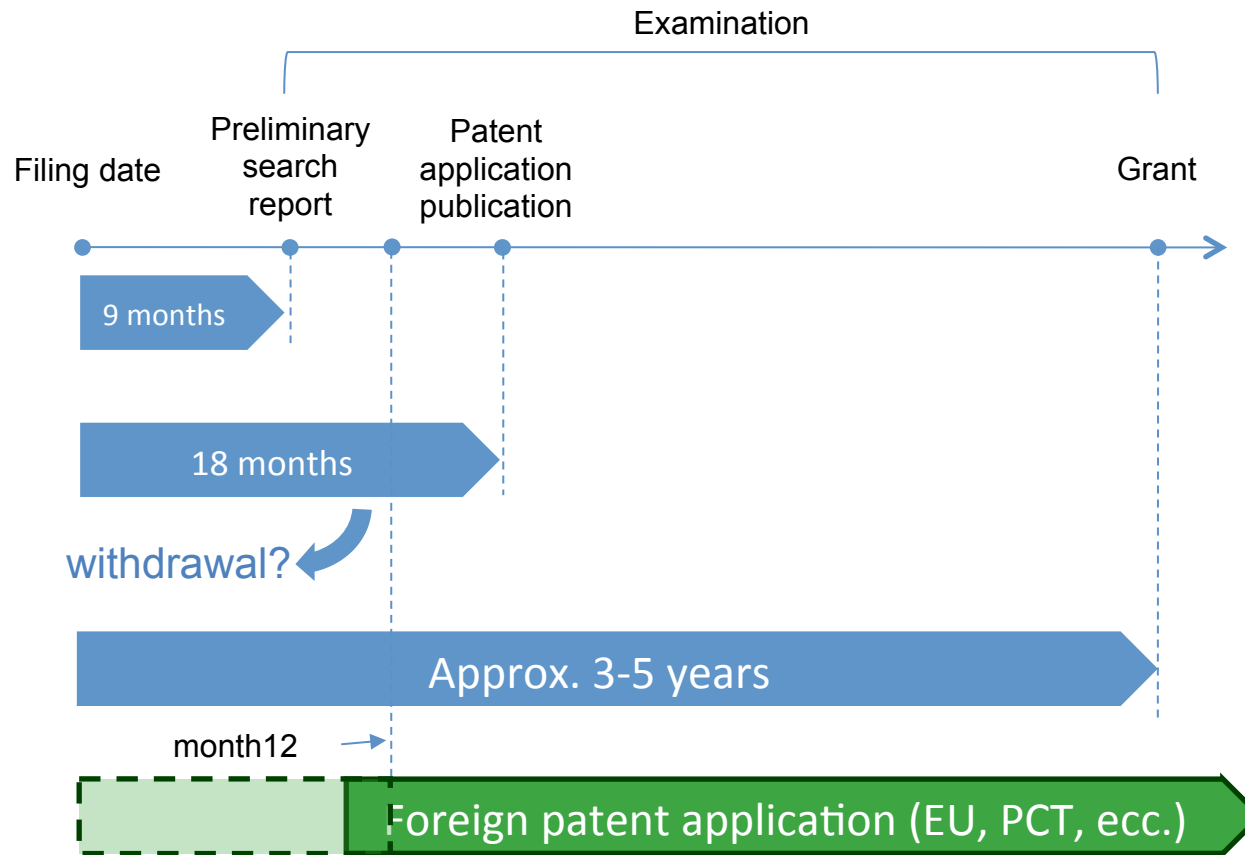
## INTERNATIONAL PATENT

By filling an international application, patent protection can be obtained in each designated States between the 152 parties to the PCT.

PCT application may be submitted:

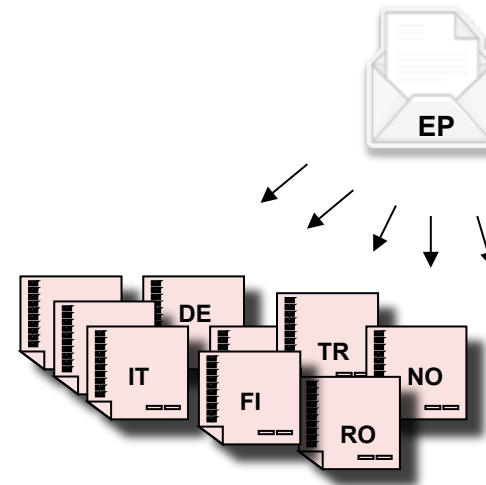
- to the NPO
- to the EPO
- to the WIPO.

# The grant procedure from a national perspective (Italy)



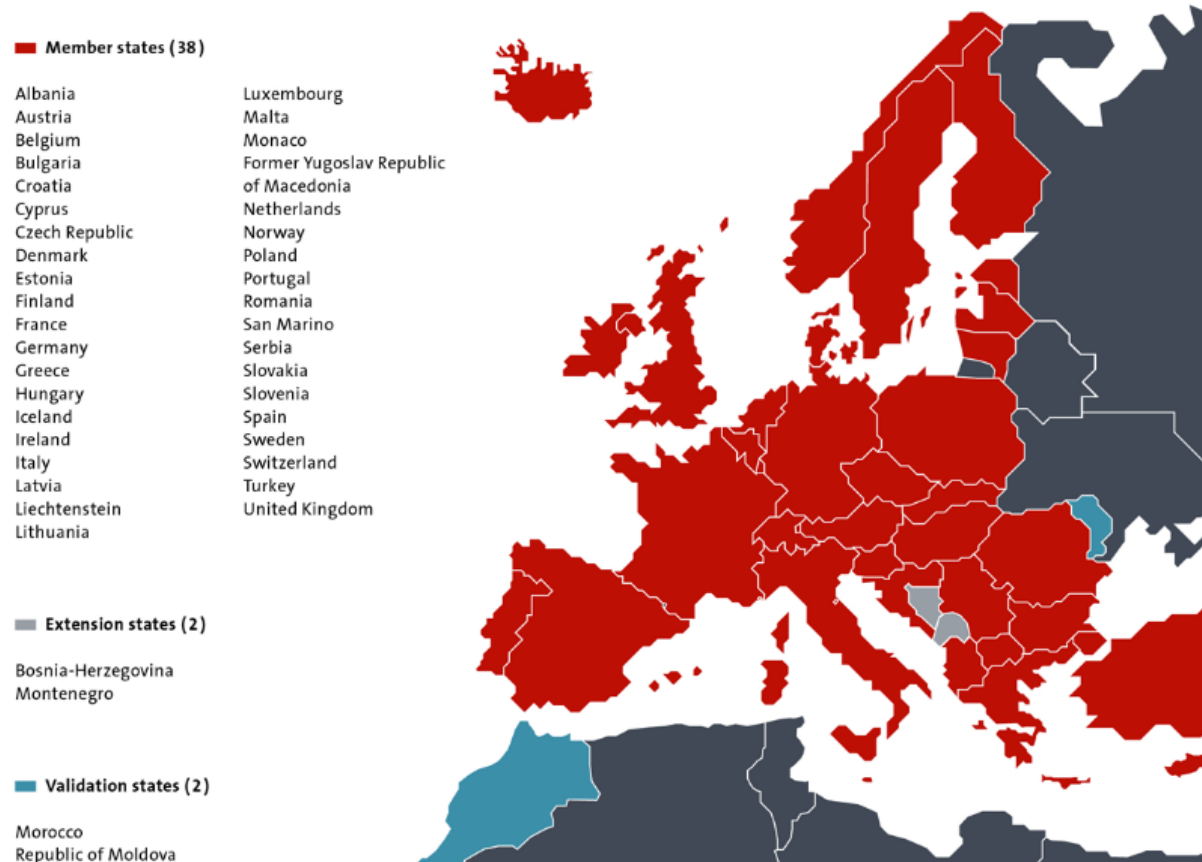
# The European Patent (1/2)

- **Authority – EPO** (European Patent Office)
- **One application filed at one office for up to 42 states** (Oct. 2016)
- **Patent is issued centrally subject to examination**
- **Results in a bundle of national patents** (the issued patent needs to be registered in each of the country of interest)





# The European Patent (2/2)



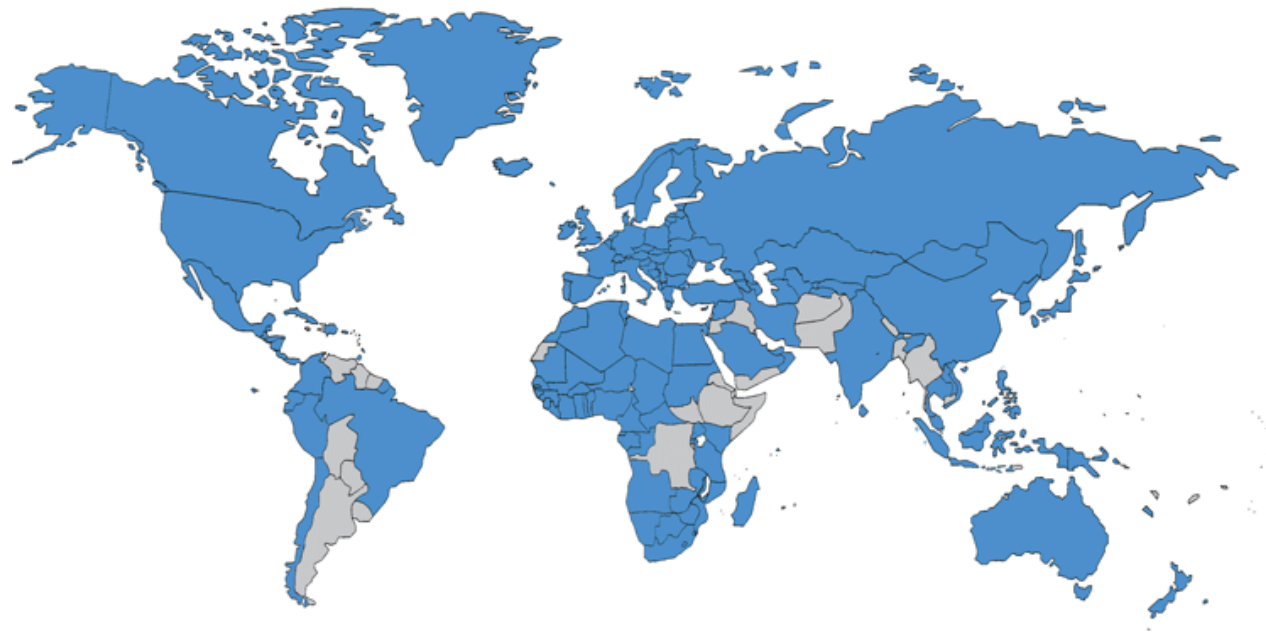
# PCT Patent Cooperation Treaty (1/2)

- **Authority – WIPO** (World Intellectual Property Organization)
- **Centralized procedure valid in 152 countries** (May 2017)
- **Preliminary search report is provided and, upon applicant request, a complete examination provides opinion on patentability** (optional)
- **Does not lead to any grant, but allow to postpone decision by applicant on which countries to proceed after 30-31 months** (instead of 12)
- **After entering into the National phase the application will be subject to standard national tracks**



# PCT Patent Cooperation Treaty (2/2)

152 Countries belonging to PCT





**Thank you!**

