



# **Project management**

Part 5

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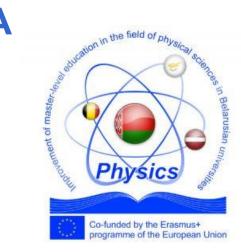
Riga Technical University



"IMPROVEMENT OF MASTER-LEVEL EDUCATION IN THE FIELD OF PHYSICAL SCIENCES IN BELARUSIAN UNIVERSITIES" ERASMUS+ PROJECT "PHYSICS"

561525-EPP-1-2015-1-LV-EPPKA2-CBHE-JP — ERASMUS+ CBHE

Student's mobility and training event 25.09.2017 - 06.10.17., RIGA, LATVIA





# The human mind is the source of all works of art and inventions



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# **Program**



- 1<sup>st</sup>: Introduction to the project management
- 2<sup>nd</sup>: Idea generation
- 3<sup>rd</sup>: New product development
- 4<sup>th</sup>: PM methods. Projects selection and evaluation.
- 5<sup>th</sup>: Launch of product





### **IP Advanced Part I**



# **Patents**

# The patent system yesterday and today Senate of Venice, 1474

"Any person in this city who makes any new and ingenious contrivance, **not made heretofore in our dominion**, shall, as soon as it is perfected so that it can be used and exercised, give notice of the same to our State Judicial Office, it being **forbidden up to 10 years** for any other person in any territory of ours to make a contrivance in the form and resemblance thereof".

#### **Today:**

- New to the world
- Up to 20 years of protection
- Publication

 Incentive to innovate and to share knowledge

### The role of the patent system

- To encourage technological innovation
- To promote competition and investment



- To provide information on the latest technical developments
- To promote technology transfer





### Patents as a social contract



Patent applicant

Reveal invention (disclosure)



Get exclusivity (patent)



**Public** 

### Rights conferred by patents

 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



These rights belong to the patent holder.



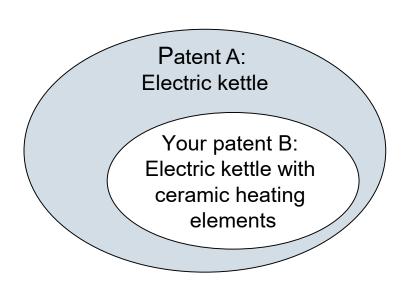
### What is a patent?

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

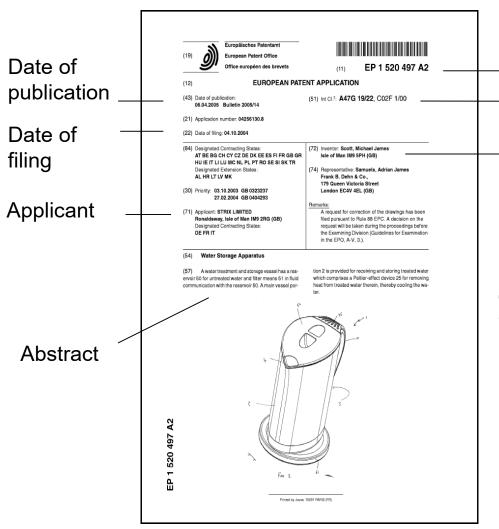
#### **- NO!**

- 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:



### What do patent documents look like?



Application number Technical class Inventor



#### Claims

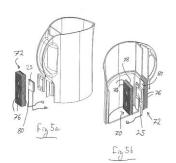
- A portable water treatment and storage vessel comprising:
  - a reservoir for untreated water:
  - filter means in fluid communication with said reservoir; and
  - a main vessel portion for receiving and storing treated water:

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

Claim(s)



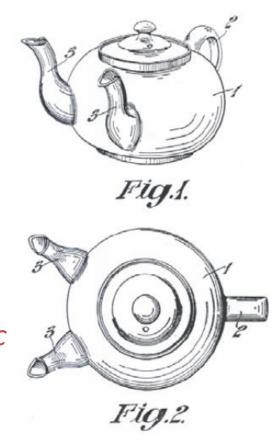
#### Description



Drawing(s)

# What does the description contain?

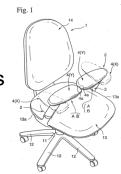
- Prior art
  - teapot with one spout
- Drawback of prior art
  - time-consuming
- Problem to be solved
  - reduce filling time for multiple c
- Solution
  - provide a second spout
- Advantage of the invention
  - filling time is reduced



# What can and can't be patented

Patents protect technical inventions which solve technical problems:

Products, devices, systems





- Chemical substances, pharmaceuticals
- Processes, methods, uses





For an invention to be patentable, 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

In most countries, patents are not granted for mere business methods or rules of games, or for methods of treatment, diagnostics and surgery of the human or animal body, or for inventions that are contrary to *ordre public* or morality, or for plant and animal varieties.



### When is an invention "new"?

- When it is not part of the state of the art
- State of the art =
   everything made available to the public before the date of filing

**Patent** application Fig.1. Date of filing State of the art Year 2013 2011 2012 2014 2008 2009 2010

Keep your invention confidential

until you have filed your

application!

# Do's and don'ts for safeguarding novelty



#### Don'ts



- Do not publish any articles, press releases, conference presentations/ posters/ proceedings, lectures or blog posts, etc. before you file
- Do not sell any products incorporating the invention before you file



#### Do's

- Sign a non-disclosure agreement (NDA)
- Seek professional advice at an early stage



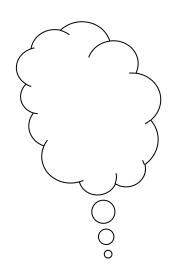






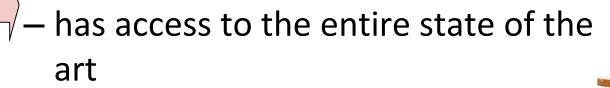
### When is an invention "inventive"?

 When it is not obvious to the person skilled in the art in view of the state of the art



The person skilled in the art

 is a skilled practitioner in the relevant technical field



is aware of general technical knowledge

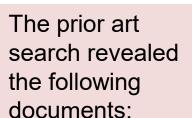
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# **Prior art** Stage 1:

# **Assessing novelty**

Claim: A pouring vessel comprising

- (a) a compartment for liquids (1),
- (b) a handle (2),
- (c) a lid, and
- (d) two spouts (5) extending from the compartment (1),
- (e) whereby the tops of the two spouts are arranged at the same height.



#### **Document D1:**

A teapot with one spout.



#### **Document D2:**

High efficiency distributor for fertilizer. Each rod has several nozzles for spraying liquid.



#### **Document D3:**

A filter handle with two spouts to be used with a coffee-maker.



#### **Document D4:**

An oil and vinegar bottle which reveals a second bottle inside. The two spouts are cleverly arranged to ensure the second bottle never drips while the first one is in use.



# Assessing inventive step (I)

- Determine the closest prior art and common features:
  - (a) a compartment for liquids
  - (b) a handle
  - (c) a lid
  - (d) one spout



- Differences over D1:
  - two spouts instead of one
  - particular arrangement of the spouts



- Drawback of prior art:
  - time-consuming
- Advantage/effect of the invention:
  - the time needed to fill multiple cups is reduced
- Objective problem to solve:
  - how to modify the teapot of D1 to reduce the time needed to fill multiple cups



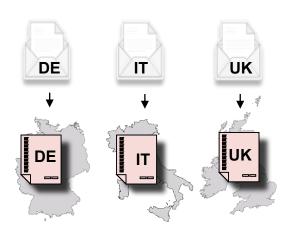
# Assessing inventive step (II)

Is the claimed solution obvious in view of the prior art? D2 D1 Fig.1. D3 Objective problem for the skilled person: How to modify the teapot of D1 in order to reduce the time needed to fill multiple cups

# How to obtain patent protection Europe (options 1 and 2)

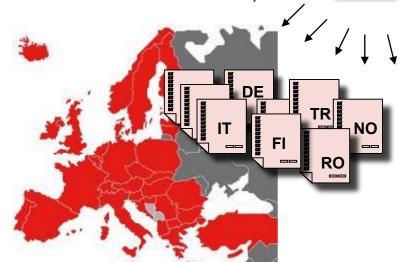
#### The national route

- Separate procedures for each state
- Procedures differ according to national law



# The regional route: European Patent Convention

- One application filed at one office for up to 40 states
- One procedure
- Applicant selects the desired states
- One European patent for up to 40 states
- Results in a bundle of national patents



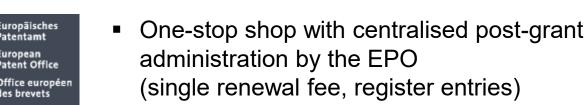


# Key facts about the unitary patent

- A European patent with unitary effect
- Further option in addition to European patent and national patents



- Protection in a single step for 25 participating EU member states
- Unitary effect can be registered by the patentee after the grant of the European patent
- Unitary character for said 25 states: limitation, transfer, revocation, lapse (only in respect of all states)
- No translation after grant, machine translation sufficient

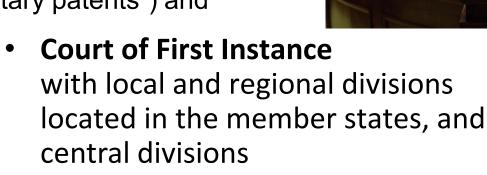






# **Key facts about the Unified Patent Court**

 A specialised patent court with exclusive jurisdiction for litigation relating to European patents with unitary effect ("unitary patents") and European patents





 Multinational panels composed of legally and technically qualified judges

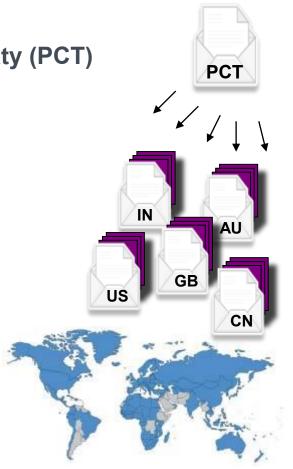


# How to obtain patent protection in Europe (option 3)

The international route: Patent Cooperation Treaty (PCT)

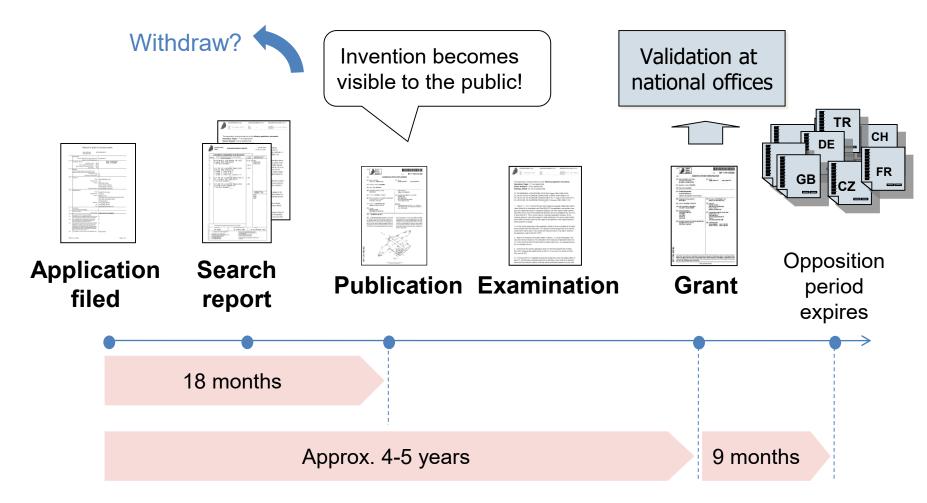
- One single application for up to 148 countries\*
- Harmonisation of formal standards (language, patent agent, fees)
- Search report and opinion on patentability
- After 30-31 months, decision by applicant on which countries to proceed in.

\*December 2013



# The grant procedure before the EPO





# What can happen after a European patent has been granted?

- Opposition
- Limitation/revocation
- Renewal fees
- Invalidity proceedings (before a court)
- Infringement proceedings (before a court)







# What is infringement?

- Making use of a patented product or process without the consent of the patent owner
- Making, offering, putting on the market, importing or stocking the product
- Making, offering, putting on the market, importing or stocking a product directly obtained from a protected process
- Using a process or offering the process for use







- Infringement is determined by the national courts or by the Unified Patent Court (once it enters into force)
- What constitutes infringement in one country may differ from other countries
- Patent proprietors can claim damages and other remedies from alleged infringers

# How is infringement determined? (I)

#### **Claims**

- Define the features of the invention = matter for which protection is sought
- Description and drawings are used to interpret the claims

#### **Extent of protection**

- Everything that is literally covered by the claims
- May also encompass equivalents



Infringement occurs when the infringing product possesses all the features of the claimed invention

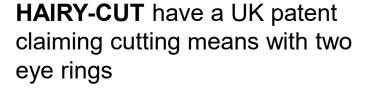
Example:

Are PAPER-FIX infringing HAIRY-CUT's patent?





**PAPER-FIX** produce scissors with eye rings covered by plastic in Italy and sell them in the UK





# How is infringement determined? (II)

# Are PAPER-FIX infringing HAIRY-CUT's patent?

Cutting means with two eye rings

PAPER-FIX sell in UK

HAIRY-CUT's

Scissors with plastic eye rings

1. Generally speaking, production and sale are acts of infringement.



**2. UK:** Yes. The scissors are within the extent of protection.



**3. Italy:** No. HAIRY-CUT do not have a patent in Italy. PAPER-FIX and others can freely produce insulated scissors (provided no one else has a patent there → perform patent search!)



What about the garden shears imported into the UK by SHEAR-MAN?

**UK:** No. The shears do not have eye rings. They are outside the extent of protection.

# Advantages and disadvantages of getting a patent

#### **Advantages**

- Exclusivity enables investment and higher returns on investment
- Strong, enforceable legal right
- Makes invention tradable (licence, sale)

#### **Disadvantages**

- Reveals invention to competitors (after 18 months)
- Can be expensive
- Grant may take 3-5 years
- Patent enforceable only after grant; proceedings can be costly

### **Alternatives to patenting**

#### Disclose (publish) the information

- Cheap
- Prevents others from patenting the same invention
- Does not offer exclusivity
- Reveals the invention to competitors

#### Keep it a secret

- Cheap (but there is the cost of maintaining secrecy)
- Does not reveal the invention
- No protection against reverseengineering/duplication of invention
- Difficult to enforce
- Secrets often leak quite fast

#### Do nothing

No effort required

- Does not offer exclusivity
- Competitors will often learn details

# What to consider before filing an application

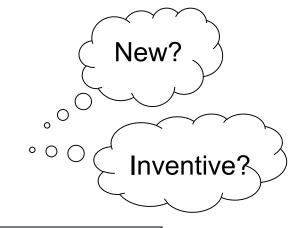
#### Should you patent your invention?

Cost/benefit analysis



#### Is your invention patentable?

- Conduct a prior art search
- Get advice on legal requirements





**Have you clarified the rights to the invention** with the company, its employees and business partners?







# What might happen if I decide not to patent my invention?

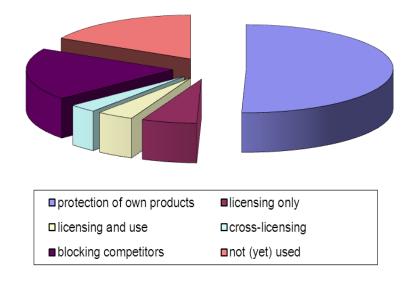
Somebody else might patent it!

Competitors might take advantage of it!

Potential for licensing, selling or transferring the technology would be severely curtailed!

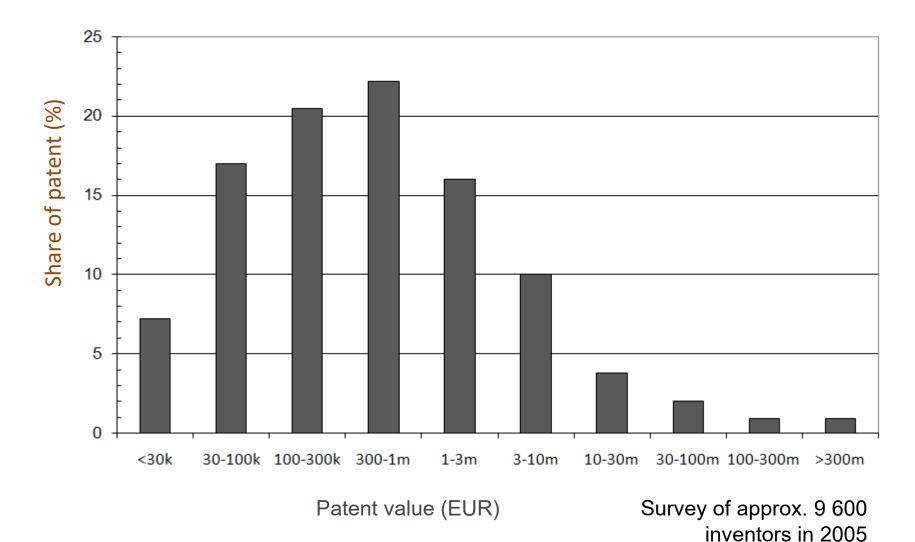
### How patents are used

- Protecting products and processes
  - increasing turnover and profits
  - attracting investors
- Licensing
- Cross-licensing
- Blocking competitors
- Building reputation
- Not (yet) used



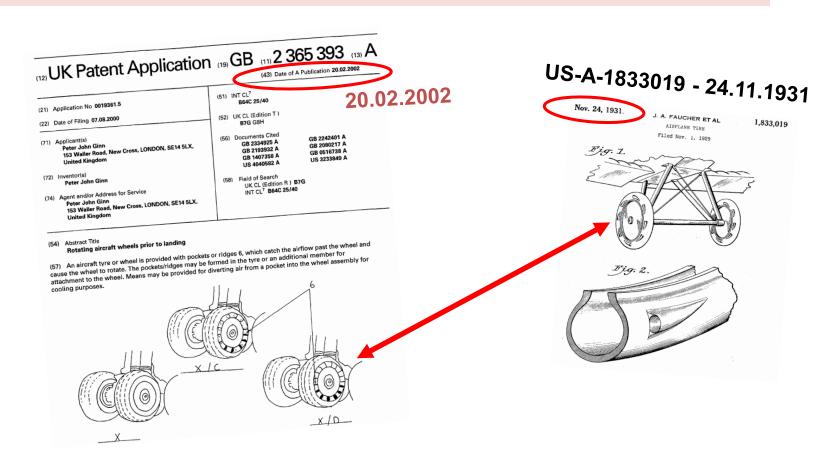
Survey of approx. 7 000 European patents in 2005

# The value of European patents



## Re-inventing the wheel - literally

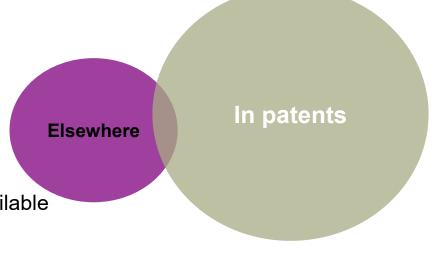
- 15-25% of all R&D efforts are wasted each year on inventions that have already been invented.
- Don't start your R&D until you have done a search!

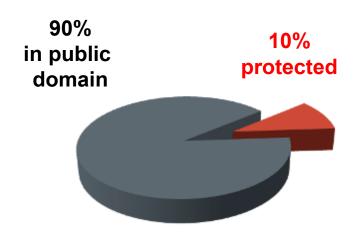


#### Solutions found in patent documents

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.



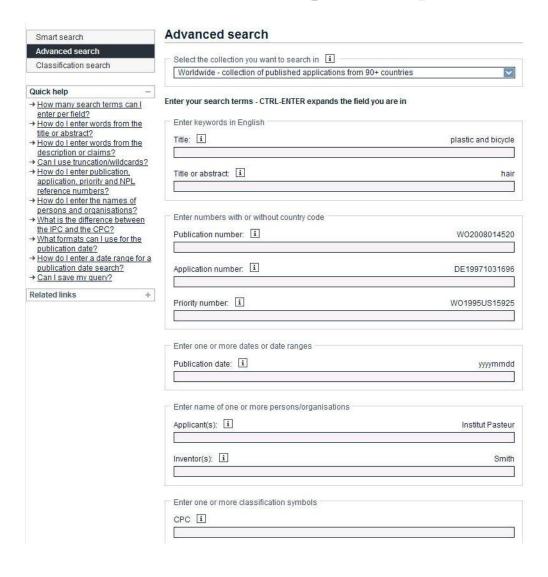


# You can find many great solutions for free!

#### Reasons

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

#### Searching for patents is easy



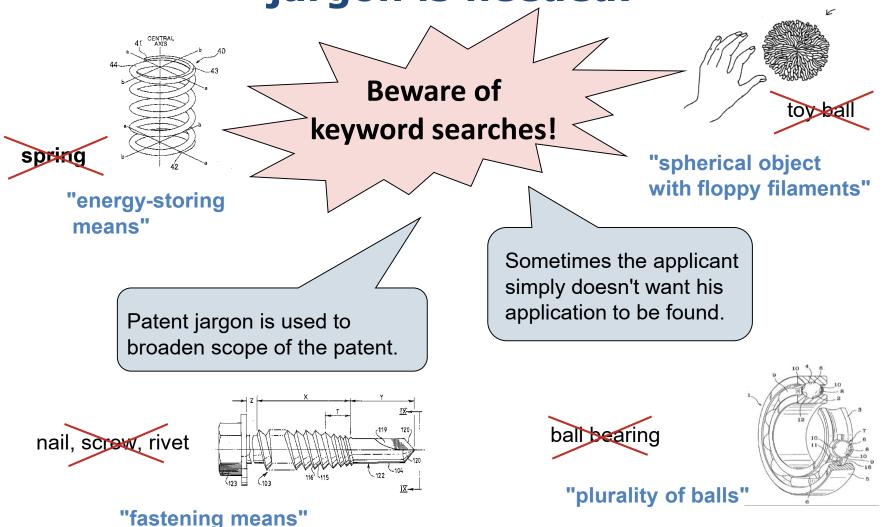


Espacenet Patent search



Free worldwide patent information at www.espacenet.com

... but a basic knowledge of patent jargon is needed!



## Quiz

- 1. Can anyone apply for a patent?
- 2. Who is the inventor?
- 3. What is the difference between patent holders and inventors?
- 4. What can you get a patent for?
- 5. What are the requirements for obtaining a patent?
- 6. What is the term of a patent?
- 7. What routes are there for obtaining a patent in Europe?
- 8. What is the difference between a patent application and a patent?
- 9. Even if an invention is patentable, is it always wise to apply for a patent?



























### Patent case study

1. Large internationally known company

2. SME



Two very different IP strategies





#### Who invented

- the personal computer (PC)?
- the point-and-click graphical user interface (GUI)?
- the laser printer?
- the Ethernet?





■ They were all invented by Xerox PARC



#### What did Xerox PARC do wrong?

 They didn't patent the technologies they invented, and these technologies were later used by others with great success.

They did not keep them secret.



# What do all these companies have in common?

- Apple
- 3Com
- Adobe Systems
- Microsoft
- IBM
- Hewlett Packard



# What happens if you don't protect your IP?

- You're not protected!
- Others will be happy to capitalise on your ideas ... for free!





- XNE (Xerox New Enterprises)
  - Licenses technologies for a fee or royalty
  - Some are spun off, earning huge returns when the companies go public on the stock market
- XIG (Xerox Innovation Group)
  - R&D
  - IP
  - Business development for licensing
  - New business opportunities

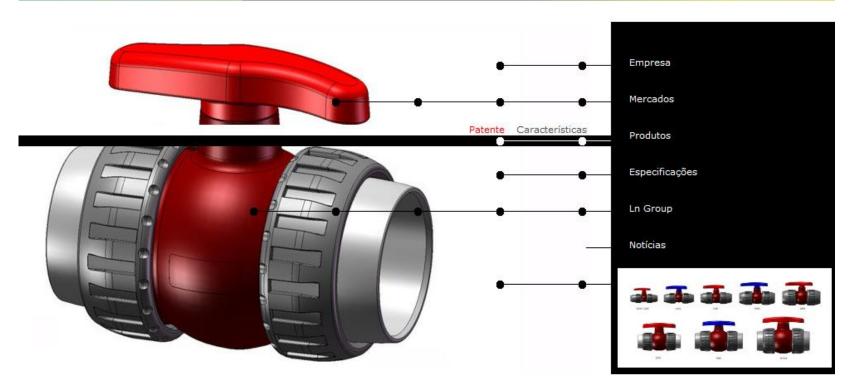
## A different approach: the caseta



- Micro-company set up in 2007
- Spin-off from TOPO, a plastics injection company from the Marinha Grande region of Portugal
- Challenged by customer to make a cheaper and more efficient valve
- How did they go about tackling this challenge?

# What did Célula 3P Erasmus+ Programme of the European Union







(12)



# Co-funded by the Erasmus+ Programme of the European Union



(11) EP 2 250 412 B1

(19) Europäisches Patentamt European Patent Office Office européen des brevets

Patent

Industrial design

Trade mark (Tethys)

#### EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent: 20.06.2012 Bulletin 2012/25

(21) Application number: 08724035.4

(22) Date of filing: 07.03.2008

(51) Int Cl.: F16K 27/06 (2006.01) B29C 45/16 (2006.01)

B29C 45/00 (2006.01)

(86) International application number: PCT/PT2008/000011

(87) International publication number: WO 2009/110813 (11.09.2009 Gazette 2009/37)

(54) MONOBLOCK BALL VALVE AND MANUFACTURE METHOD THEREOF MONOBLOCKKUGELVENTIL UND HERSTELLUNGSVERFAHREN DAFÜR CLAPET A BILLE MONOBLOC ET SON PROCEDE DE FABRICATION

- (84) Designated Contracting States:

  AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
  HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
  RO SE SI SK TR
- (43) Date of publication of application: 17.11.2010 Bulletin 2010/46
- (73) Proprietor: Celula 3pp, S.a. 2431-908 Marinha Grande (PT)

- (72) Inventor: DOMINGUES MATOS, Arnaldo P-2430-012 Marinha Grande (PT)
- (74) Representative: Ferreira, Maria Silvina Clarke, Modet & Co. Rua Castilho, 50-9° 1269-163 Lisboa (PT)
- (56) References cited:

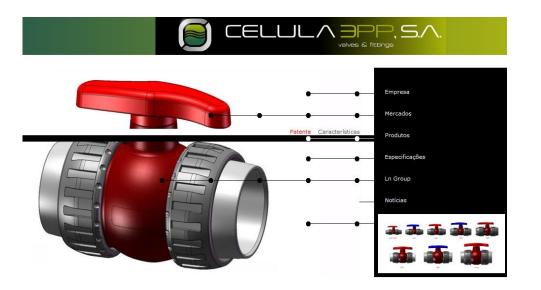
EP-A- 0 242 927 DE-A1- 4 414 716 DE-A1- 4 442 979 GB-A- 1 222 559 GB-A- 1 580 278 US-A1- 2004 112 562

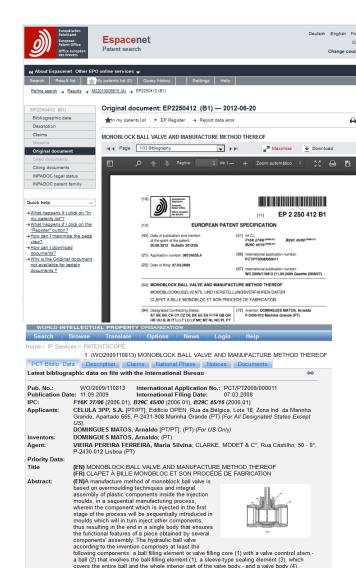
## A success story than



# Co-funded by the Frasmus+ Programme Union

- Industrial property
- Patent information
- GAPI (IP support centre)
  - 22 offices in Portugal
  - www.marcasepatentes.pt/index.php?section=228





#### Patents and other IP tools

- -www.epo.org
- -www.espacenet.com
- -http://wipo.int
- -http://patentscope.wipo.int/search/en/search.jsf
- -www.wipo.int/wipogold/en/



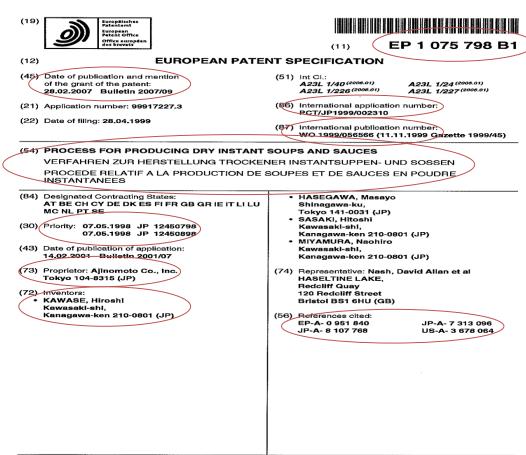
#### **Patent exercises**

### **Typical patent**

#### Recap

- What does the cover page of a patent document look like?
- What does a patent document consist of?
- What are the requirements for patentability?
- Patent case studies
  - The significance of dates in the patent process
  - What happens during examination
  - How claims evolve during examination

### Cover page of a typical patent document



Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Printed by Jouve, 75001 PARIS (FR)

### The parts of a patent document (I)

Title

#### Abstract

Short summary of the invention

#### Description

- Field of the invention (the technical area to which the invention relates)
- Background of the invention (details of the prior art)
- Detailed description of the invention: how does the invention provide a technical solution to the technical problem?

#### The parts of a patent document (II)

### • Description (cont.)

- Brief description of the drawings
- Detailed description of at least one way of carrying out the invention (embodiment of the invention)

#### Claims

- What is the scope of the invention/the protection sought?
- Drawings (if any)

#### More about the claims

#### Two types of claim

- Independent claims: the invention in its broadest scope
- Dependent claims: any claim which includes all the features of any other claim

#### Independent claim

Claim 1 An A (product/process/apparatus/use) comprising

B
C
Technical features of the claimed invention
D

Dependent claim

Claim 2 An A as claimed in claim 1, comprising

E Further particulars of claim 1

#### Requirements for patentability

The invention must be

- new/novelAND
- inventiveAND
- industrially applicable

#### The test for novelty

- The test for novelty is an objective test.
- Are all the components of the claim of the invention known?
- Are they disclosed as the state of the art in existing products or publications?
- The disclosure can be anywhere in the world and in any form.
- The disclosure is relevant if it was made before the filing/priority date of the patent application concerned.
- All it takes to destroy novelty is for a single prior art item to disclose all the features of the claimed invention.

#### Two examples

- Sugru

- Hövding airbag cycle helmet

### Sugru (I)

- Original idea from student Jane Delehanty for her master's degree in product design from the Royal College of Art.
- Problem: So many products have a limited lifetime and physical parts seem to break all the time.
- Solution: A silicone rubber which is hand-formable, sticks to almost anything, air cures at room temperature, becomes strong and durable even in extreme weather conditions and has a soft touch, but is "grippy".
- Called sugru, from the Irish "sugradh" meaning "play".

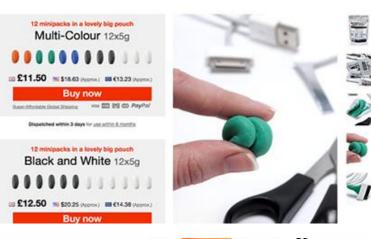
### Sugru (II)

#### **Advantages**

It is a pliable substance which quickly sets to form a companies repair, mount or grip.

It has the mouldability of a high-temperature curing silicone but retains the adhesive properties and room-temperature curing of glues and sealants.

### What does sugru look like?











### History of the sugru patent

Priority application filed on 30 November 2006

PCT application filed on 29 November 2007

PCT application published on 5 June 2008

 Entered regional phase in Europe, national phases in the US, UK and China

European patent already granted

#### Claims at the PCT stage

There are ten claims in total.

Claim 1: Independent claim directed to a composition

Claims 2-10: Dependent claims

Claim 9: Product claim of the composition of claims 1 to 6

 Claim 10: Process claim for producing a product according to claims 1 to 6

#### Claim 1 of the PCT application

"A one part <u>room temperature curable silicone</u> <u>elastomer</u> composition where the uncured composition has a Williams plasticity from 80 mm to 900 mm."

#### Is it novel?

- Priority date: 30 November 2006
- Test for novelty: Did any document/publication exist before 30 November 2006 which, when taken alone, discloses the invention claimed in the sugru application?
- First published search report states claims 1 to 10 may not be novel and/or inventive. Why?
- The examiner cited seven prior art documents:
  - EP0575863A dated 29 December 1993
  - US5171773A dated 15 December 1992
  - US4476155A dated 9 October 1984
  - GB2288406A dated 18 October 1995
  - EP0905195A dated 31 March 1999
  - US2006/142472A1 dated 29 June 2006
  - WO03/072267A dated 4 September 2003

#### What did the applicants do next?

#### Options

- Abandon the patent application or
- Request a preliminary examination (optional)and/or
- Enter the national/regional phase

#### Decision

 To continue prosecution by entering the national/regional phase in Europe, the USA, the UK and China

# Comparison between original PCT claim 1 and the amended EP version

International patent application	Amended granted EP claim
A: A one part room temperature curable silicone elastomer composition  B: where the uncured composition has a Williams plasticity from 80 mm to 900 mm.	A: A one part room temperature curable silicone elastomer composition  B: where the uncured composition has a Williams plasticity from 80 mm to 900 mm, and  C: where the composition is a non-adhesive composition, the composition comprising:  D: 20 to 60% by weight of a hydroxy-terminated poly(dimethylsiloxane) of viscosity greater than 350 000 mPA s (25° C);  E: 3 to 66% by weight of a reinforcing filler;  D: 10 to 60% by weight of a non-reinforcing filler;  F: 2 to 6% by weight of a crosslinker and  G: a suitable quantity of a curing catalyst.

## Patent status of sugru as of March 2013

 Granted EP patent: validation in the designated contracting states is in progress

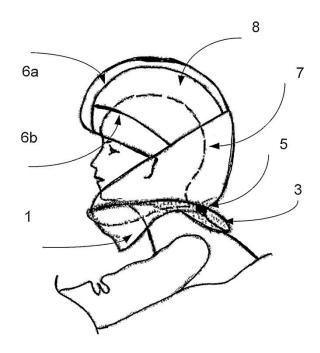
Examination has been requested in the other countries

## Example 2: Hövding airbag cycle helmet

- Swedish inventors Anna Haupt and Terese Alstin from Lund University
- Problem: Regardless of safety, people do not like to wear helmets while riding their bike as it ruins their hair-do and does not look cool
- Solution: Airbag helmet
- What is it? A collar containing an airbag with helium as the inflating agent and sensors including gyroscopes and accelerometers

## What does the airbag helmet look like?





## What did Hövding claim in their PCT application?

- A system for protecting a portion of the body of a user in case of an abnormal movement, such as a fall or a collision (product claims 1 to 9)
- A method for protecting a head of a user in case of an abnormal movement, such as a fall or a collision (method claims 10 to 12)

## Claim 1 of Hövding's PCT application

- (A) A system for protecting a portion of the body of a user in case of an abnormal movement, such as a fall or a collision, wherein said system comprises
- (B) an apparel and
- (C) an airbag arranged therein: characterised in that said airbag comprises:
- (D) a first part suitable for surrounding a neck portion and back head portion of a user after inflation; AND
- (E) a second part suitable for forming a hood surrounding a skull of a user after inflation,
- (F) said first part and second part being folded and arranged in in said apparel before inflation.

### Is it novel?

- Priority date: 26 October 2005
- Test for novelty: Did any document/publication exist before 26 October 2005 that, when taken alone, discloses the invention claimed in the patent application?
- International search report states claims 1 to 9 may not be novel and/or inventive. Why?
- The examiner cited three prior art documents:

- DE1975451A1 dated 10 June 1999
- DE3616890A1 dated 26 November 1987
- WO0154523 dated 2 August 2001

### What did the applicants do next?

### Options

- Abandon the patent application or
- Request a preliminary examination and/or
  - Enter the national/regional phase in various countries

### Decision

- To continue prosecution by requesting optional international preliminary examination report (IPER issued)
- The claims had to be amended to ensure they were novel and inventive

## Comparison between original PCT claim 1 and the amended claim

#### **Original claim 1**

A: A system for protecting a portion of the body of a user in case of an abnormal movement, such as a fall or a collision, wherein said system comprises

B: an apparel and

C: an airbag arranged therein: characterized in that said airbag comprises:

**D:** a first part suitable for surrounding a neck portion an back head portion of a user after inflation; AND

**E**: a second part suitable for forming a hood surrounding a skull of a user after inflation,

F: said first part and second part being folded and arranged in said apparel before inflation.

#### **Amended claim 1**

A: A system for protecting a portion of the body of a user in case of an abnormal movement, such as a fall or a collision, wherein said system comprises

B: an apparel and

C: an airbag arranged therein: **characterized in that** said airbag **comprises**:

**D:** a first part suitable for surrounding a neck portion an back head portion of a user after inflation; AND

E: a second part suitable for forming a hood surrounding a skull of a user after inflation,F: said first part and second part being folded and arranged in said apparel before inflation, and

**G:** said first part being adapted for inflation prior to inflation of the second part.

## What did the examination report say and what happened next?

 Examination report: claims 1 to 12 are new and inventive.

 Consequences: entry into national/regional phase in various countries and regions, including China, Europe, Japan, Russia, Sweden and the United States.



## **Utility models**

# Scope of protection of ut roof the European Union compared with patents

#### **Utility models**

- Registered territorial IP right
- Available in limited number of countries
- No central filing in Europe
- Protection for up to 10 years
- Search report in some countries only
- Registered and published after a few months
- Generally no substantive examination (novelty, inventiveness, industrial applicability)
- Reviewed only in invalidation or infringement proceedings

#### **Patents**

- Registered territorial IP right
- Available in most countries
- Central filing possible (e.g. EPO for Europe)
- Protection for up to 20 years
- Search reports standard
- Application published after 18 months
- Substantive examination (novelty, inventive step, industrial applicability)
- Grant or refusal after substantive examination procedure

## **Example of a utility m**









(10) **DE 20 2012 006 551 U1** 2012.09.27

(12) Gebrauchsmusterschrift

(21) Aktenzeichen: 20 2012 006 551.3

(22) Anmeldetag: **06.07.2012** 

(47) Eintragungstag: 06.08.2012

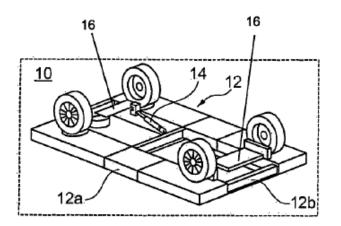
(43) Bekanntmachungstag im Patentblatt: 27.09.2012

(73) Name und Wohnsitz des Inhabers: AUDI AG, 85045, Ingolstadt, DE (51) Int Cl.: **G09B 9/042** (2012.01)

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: Fahrsimulator zur Bewegungssimulation eines Kraftfahrzeugs

(57) Hauptanspruch: Fahrsimulator (10) zur Bewegungssimulation eines Kraftfahrzeugs, umfassend eine Bodenplatte (12) auf der ein Versuchskraftfahrzeug abstellbar ist, sowie mehrere an der Bodenplatte (12) angeordnete und mit dem Versuchskraftfahrzeug in Wirkverbindung stehende Aktoren (14) zur Simulation von Vertikal- und/oder Längs- und/oder Querbeschleunigung und/oder Nick- und/oder Rollwinkel des Versuchskraftfahrzeugs, wobei die Aktoren (14) über mindestens eine am Unterboden des Versuchskraftfahrzeugs befestigbare Adapterplatte (16) mit dem Versuchskraftfahrzeug in Wirkverbindung stehen.



#### Beschreibung

[0001] Die Erfindung betrifft einen Fahrsimulator zur Bewegungssimulation eines Kraftfahrzeugs gemäß dem Anspruch 1.

[0002] Fahrsimulatoren zur Bewegungssimulation eines Kraftfahrzeugs sind in verschiedenen Ausführungsformen bekannt. Lediglich beispielhaft wird auf WO 2006/015592 A1 verwiesen.

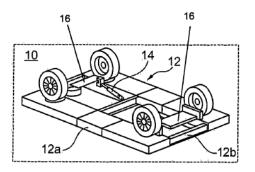
[0003] Insbesondere stellen Fahrsimulatoren eine kostengünstige und gefahrlose Möglichkeit dar, neue Systeme in einer virtuellen Umgebung mit realen Fahrern zu erproben. Dies gilt insbesondere für Fahrerassistenzsysteme. Dazu ist allerdings eine realistische Nachbildung von Vertikal- und/oder Längs- und/ oder Querbeschleunigungen notwendig.

[0004] Zur realistischen Simulation von Vertikalund/oder Längs- und/oder Querbeschleunigungen ist es bekannt, das Versuchskraftfahrzeug mit hydraulischen Aktoren zu versehen, die anstelle der Federbeine in das Versuchskraftfahrzeug integriert werden. Die hierzu nötigen Hydraulikaggregate werden entweder extern verbaut oder anstelle des Motors und Getriebes verbaut.

#### Schutzansprüche

- 1. Fahrsimulator (10) zur Bewegungssimulation eines Kraftfahrzeugs, umfassend eine Bodenplatte (12) auf der ein Versuchskraftfahrzeug abstellbar ist, sowie mehrere an der Bodenplatte (12) angeordnete und mit dem Versuchskraftfahrzeug in Wirkverbindung stehende Aktoren (14) zur Simulation von Vertikal- und/oder Längs- und/oder Querbeschleunigung und/oder Nick- und/oder Rollwinkel des Versuchskraftfahrzeugs, wobei die Aktoren (14) über mindestens eine am Unterboden des Versuchskraftfahrzeugs befestigbare Adapterplatte (16) mit dem Versuchskraftfahrzeug in Wirkverbindung stehen.
- 2. Fahrsimulator (10) nach Anspruch 1, dadurch gekennzeichnet, dass mehrere Adapterplatten (16) vorgesehen sind, wobei die Adapterplatten (16) jeweils fahrzeugspezifisch auf ein Versuchskraftfahrzeug abgestimmt sind und über an der jeweiligen Adapterplatte (16) vorgesehene Befestigungselemente mit am jeweiligen Versuchskraftfahrzeug bereits bestehenden Befestigungspunkte lösbar verbindbar ist.
- 3. Fahrsimulator (10) nach einem der Ansprüche 1 oder 2, dadurch gekennzeichnet, dass die Bodenplatte (12) modular, mehre Teile aufweisend ausgebildet ist und über mit der Bodenplatte (12) lösbar verbindbare Zwischenstücke (12a, 12b) in ihrer Länge und/ oder Breite veränderbar ist.

#### Anhängende Zeichnungen



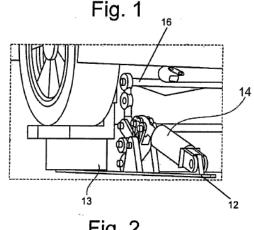


Fig. 2

# Different names for utility Frasmus+ Programme patents Co-funded by the Co-funded by the Erismus+ Programme patents

- Austria and Germany
  - Gebrauchsmuster
- Australia
  - innovation patent
- China
  - invention patent(~ regular patent)
  - utility model patent
- Indonesia
  - simple patent

- Ireland
  - short-term patent
- Japan
  - utility model
- USA
  - utility patent
  - (~ regular patent)
  - no utility models available
- Malaysia
  - utility innovation

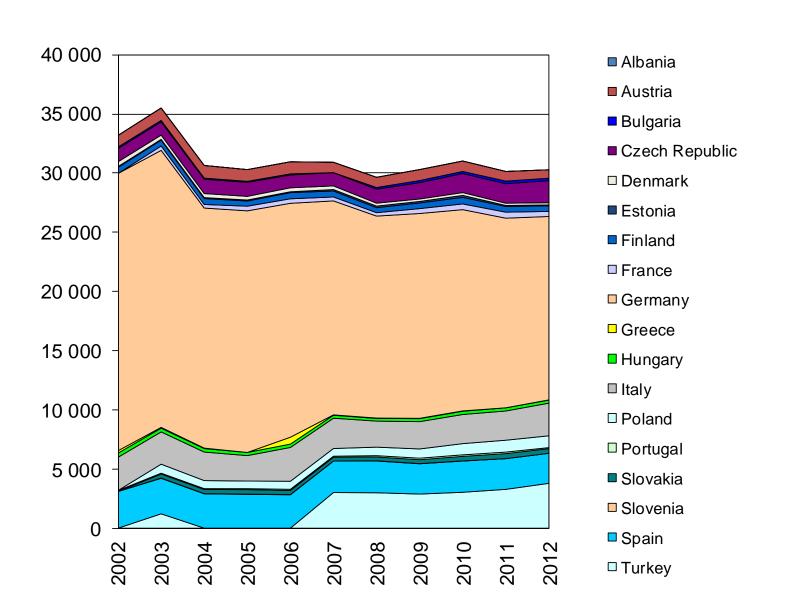
# European countries in which Erasmus Programme Union model protection is available

- Albania
- Austria
- Bulgaria
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece



- Hungary
- Ireland
- Italy
- Poland
- Portugal
- Slovakia
- Slovenia
- Spain
- Turkey

## Utility model applications filed in Europe (2002-2012)



## Scope of protection and exiting the European Union Co-funded by the Scope of the European Union

- Utility models offer protection for technical inventions, including:
  - apparatus and devices
  - chemical substances
  - medicinal products
- The following do <u>not</u> qualify for utility model protection:
  - discoveries, scientific theories, mathematical methods
  - blueprints, patterns, teaching methods, rules for playing games, accounting systems, programs for computers
  - process inventions (e.g. manufacturing and working processes)
  - biotechnological inventions
  - animal and plant varieties

- Utility models cannot be granted for inventions the publication or exploitation of which would be contrary to public policy or morality.
- Differences in national utility model laws, e.g.
  - In Austria, program logic on which programs for data processing systems are based is regarded as an invention under the Utility Model Law, whereas computer programs as such are excluded from protection.
  - Some countries (e.g. Australia) allow methods or processes

## How to get utility moder profestion Union

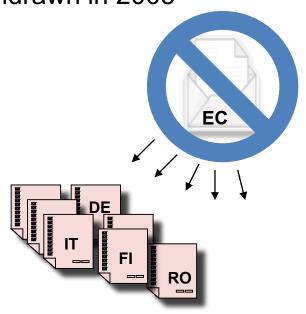
- Via the national route
- Separate procedures for each state
  - procedures differ according to national law
  - up to 12 months from filing nationally to file in other contracting states of the Paris Convention



 Central filing not possible either in Europe or at international level

Co-funded by the

 Community utility model proposed in 1995 and finally withdrawn in 2005

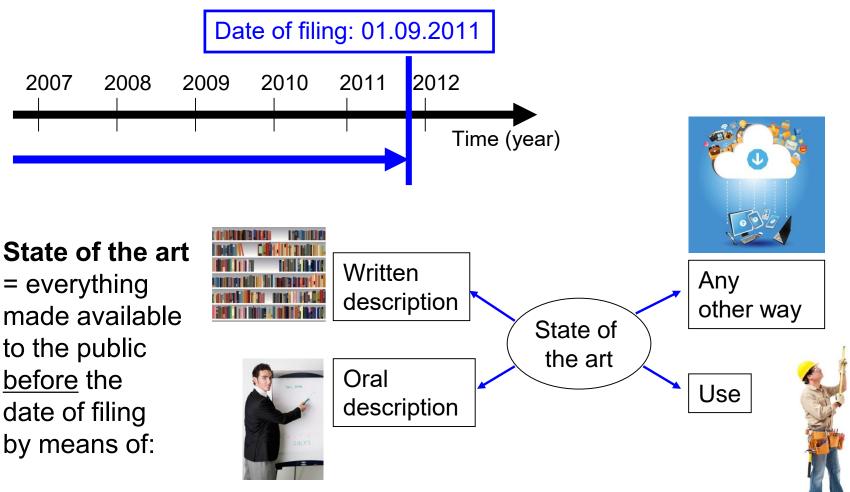


# Important requirement requirement of the European Union model applications

- Substantive requirements
  - Novelty
  - Inventiveness
  - Industrial applicability
- Further requirements
  - Sufficiency of disclosure
  - Claims must be clear and concise
  - Amendments of application only within limitations
- The substantive requirements are normally not examined when the utility model is registered and published.

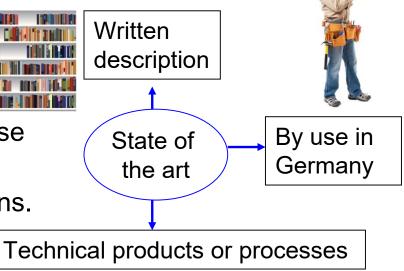


# State of the art for European Union patent applications Co-funded by the Programme Pean Programme Pean Union Pean Union



# State of the art for utility mothers Union

- Examples: Austria and Germany
  - The state of the art comprises all technical products or processes published before the date of filing.
    - This includes the applicant's own scientific publications or any presentation of a new product at a fair.
    - Six-month grace period.
- Exception: Germany
  - The state of the art does not comprise
    - prior use outside Germany
    - publicly announced oral descriptions.







# State of the art for util roll some State of the art for util some State of the art for util

#### "Relative" novelty requirement



This is a special hammock used in a hotel resort in Bulgaria. The hammock has not been described in public in print in any country other than Bulgaria itself.



A utility model could therefore be obtained for the same hammock in Spain.

- Before filing
  - Applicants should be aware of the prior art.
  - Public databases (e.g. Espacenet, DepatisNET) can be used.
- On registration
  - Some patent offices offer searches (AT, DE).



- After registration
  - A search might be necessary as part of nullity proceedings or infringement proceedings.

- Inventive step (or inventiveness) is not defined in the same way in every country
- There is often a lower threshold of required inventiveness for utility models than for patents
  - not clearly lacking an inventive step (Ireland)
  - lower inventive threshold than for standard patents (Australia)
- In some countries, the difference between the inventive step requirements for patents and utility models has been the subject of judicial decisions at the highest level



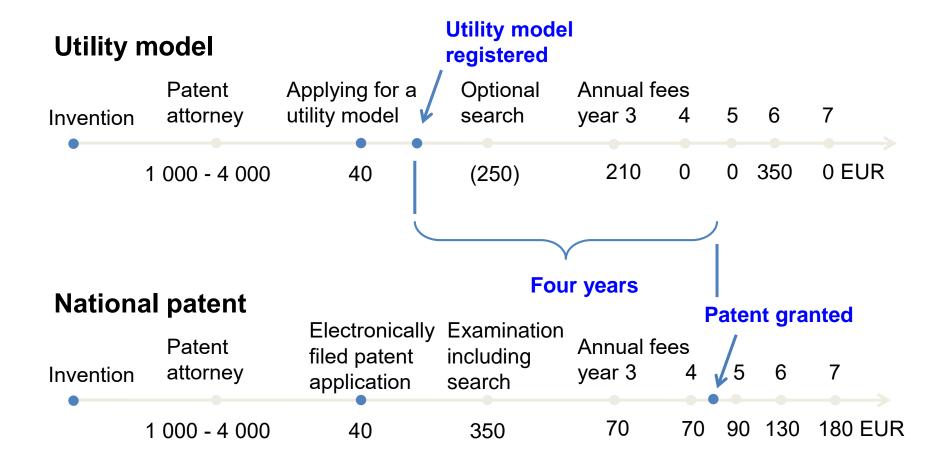


Applications for utility models can be filed:

- On the same day as a patent application
- After a patent application has been filed
- As a split-off utility model of
  - a national
  - European or
  - international patent application or granted patent
- Before the final refusal of a patent application
- Without a corresponding patent application
- In addition to an application for another IP right (design, trade mark)

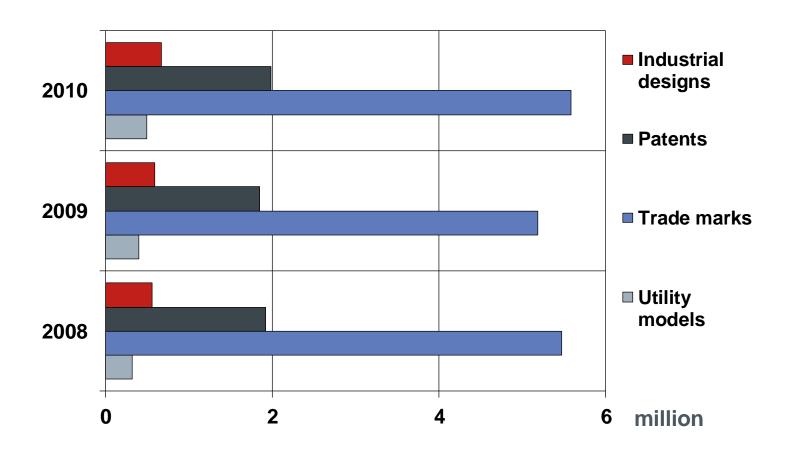
# Comparison of fees - Line of the European Union utility model applications

Co-funded by the

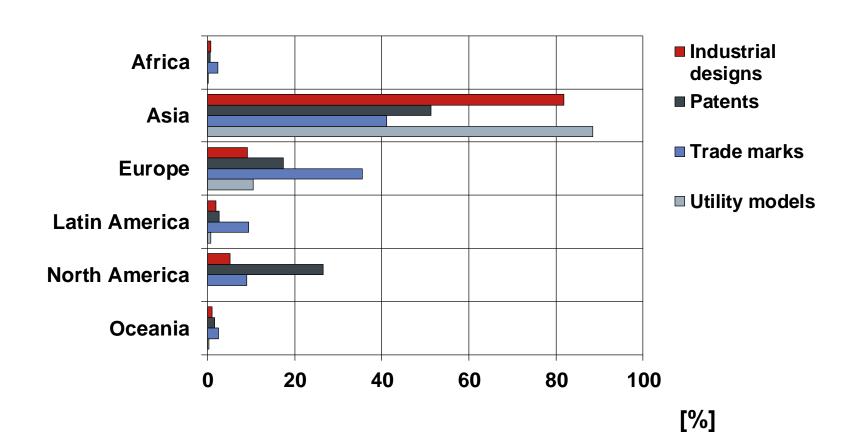


- + Utility model applications can be filed as a strategic IP right
- + Procedural fees may be lower than for national patent applications
- +/- Utility models are registered, but are normally not examined
- Utility models offer less legal certainty than patents
- Utility model litigation proceedings may be costly

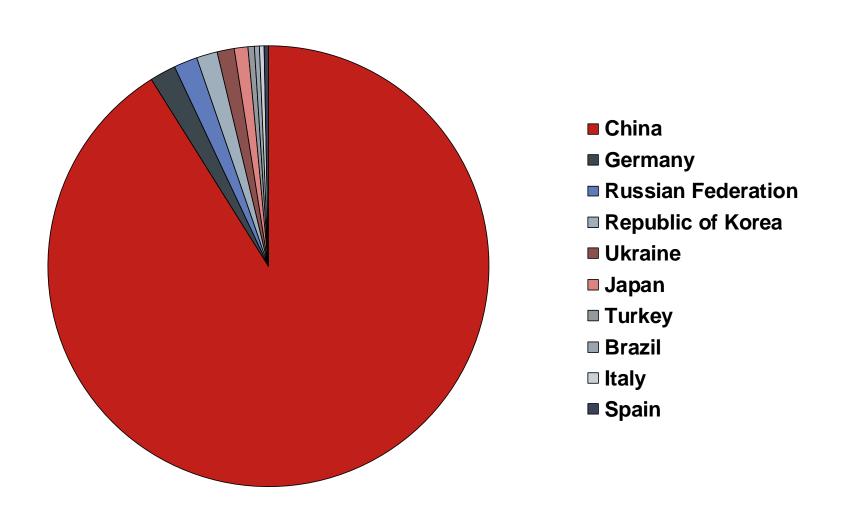
# Total filing figures for various IP rights 2008-2010



# Relative filings in 2010 by continent

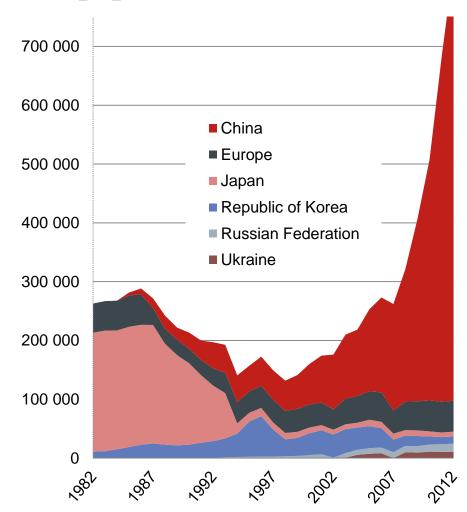


# Top 10 offices in 2012 for utility model applications



# 30 years of filing history for utility model applications

- Over 827 000 utility model applications worldwide in 2012
- 1985 China
  - reinstitution of patent system introduced invention, utility model and design patents
- 1987 Japan
  - amendment of Patent Law
  - multiple claims allowed
- 1993 Japan
  - new utility model system abandoning examination at registration



# Recommendations are reading Co-funded by the Programme of the European Union reading

- Consult a professional before drafting or filing a utility model application.
- For more information:
  - WIPO (<u>www.wipo.int</u>), including country profiles and a directory of intellectual property offices
  - Patent offices of the EPO member states (<u>www.epo.org/service-support/useful-links/national-offices.html</u>)
  - Other national patent offices



## Designs

### Definition

What designs are and what they protect

#### Protection

- How to obtain design rights
- Requirements for protection
- Difference between registered and unregistered designs
- The Community design system

### Enforcement

- Scope of protection
- Design infringement/allowed uses

# Example of a design the European Union







 The outward appearance of the whole or parts of a product

- Resulting from the features of the product, such as:
  - lines
  - colours
  - shapes
  - textures
  - contours
  - materials
  - ornamentation



Any industrial or handicraft item, including:

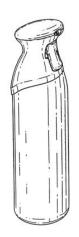
- packaging
- normal single products
- parts of products
- graphic symbols (and logos)
- get-ups (interiors of rooms or shops)

Complex products

### More examples of designs Erasmus+ Programme Grasmus Programme Erasmus Programme Grasmus Programme Erasmus Programme











Co-funded by the









Functions of the product

Any item that does not comply with the definition of a design

- lack of outward or visible appearance
- not an industrial or handicraft item

Computer programs

- Designs enhance the attractiveness and value of products
  - but this is not a legal requirement for protection
- Without protection, others can benefit from the company/designer's investment
- Differences over other IP rights:
  - trade marks
  - patents



Two possibilities:

with registration: registered design rights

- without registration: unregistered design rights

Copyright can co-exist with design protection

#### The Community design system

#### **Unregistered Community designs**

- No application procedure
- No cost
- Protection against copying
- Protection for 3 years
- No grace period
- No priority

Registered Community designs

- Application with OHIM
- Fees payable to OHIM
- Full protection
- Min. 5 years, max. 25 years
- 12-month grace period
- 6-month priority period

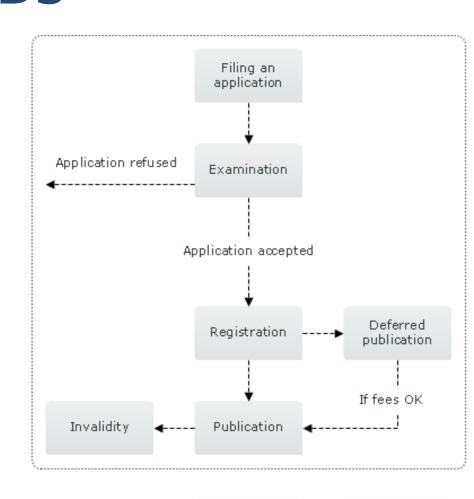
# The registration programme range at unded by the Erasmus+ Programme national, international and the European Union level

- National level
- International level
  - direct application through WIPO
  - for countries designated at the time of filing
- EU level
  - with the OHIM
  - for the whole of the EU

## The registration pro

Co-funded by the European Union

- Fast procedure
- Examination of:
  - formalities
  - grounds for refusal
    - not a design
    - against public policy or morality
- No opposition
  - only invalidity procedure



Appeal Mediation

 Protection only if the following requirements are fulfilled:

novelty

individual character

May still be excluded from protection

- No identical design has been made available to the public
  - includes designs that differ in immaterial details only
- No disclosure of own design
  - however, 12-month grace period
- Relevant date to assess novelty
  - registered designs: date of filing
  - unregistered designs: date of first disclosure

- Considered to have been made available to the public after:
  - exhibition
  - use in trade
  - publication
  - disclosure in any other way

- Not considered disclosed if:
  - not known in specialised circles
  - disclosed only under condition of confidentiality

- Overall impression on the informed user must differ from that made by any other design made available to the public earlier
- Overall impression: global comparison
- Informed user: intermediate character
  - not a designer or a technical expert
  - not an average consumer
  - some awareness of prior existing designs
  - relatively high degree of attention

## Exclusion from protection Erasmus+ Programme Co-funded by the Erasmus+ Programme Exclusion from protection Erropean Union

- Contrary to public policy and morality
- Design exclusively dictated by its technical function
- Component parts of complex products not visible during normal use
- Designs of interconnection
  - "must-fit" exemption

### What happens after registration to the Eulopean Union

- Lifespan of a registered design right:
  - five years
  - renewable
  - maximum 25 years
- Use not obligatory
- Territory of protection
  - national design rights in national territory
  - Community design rights in the whole of the EU



Invalidity claims can arise because:

- the design fails to meet the definition of a design
- the requirements for protection are not fulfilled
- the design is excluded from protection
- the holder is not entitled to the design
- the design is in conflict with a prior right
- the design uses certain emblems

## What rights does the the the three t

Full protection for registered design rights

Exclusive right: protects the design from unauthorised use

- protection covers the design itself
- not the product

Prevents others from using the design

- Design rights offer protection against any design which:
  - is identical
  - differs in immaterial details
  - does not make a different overall impression on the informed user
- Account must be taken of:
  - individual character
  - degree of freedom of the designer
  - constraints

## Infringement and allowed the Erasmus+ Programme

- An infringement is any act of use of the design by a third party without the authorisation of the designer
- Allowed uses:
  - private acts for non-commercial purposes
  - acts for experimental purposes
  - academic citations
  - must-match exemption
  - exhaustion of rights in the EU internal market

#### Overlap with other 1833



- Relationship to other forms of protection
  - protection by other IP rights possible
  - at national and EU level

- Relationship to copyright
  - protection under national copyright law
  - conditions determined by national law



#### Design case study

Rappers/pogs

Promotional gadgets

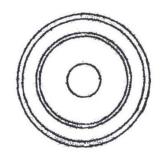
Used in the food industry

Made to appeal to young children

# The two registered Continued by the Co-funded by the Co-f

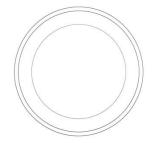
PepsiCo's contested design







• Grupo Promer's earlier design





- 2005: Invalidity Division decision (ICD 172)
  - same overall impression
  - invalidity of PepsiCo design
- 2006: Third Board of Appeal (R 1001/2005-3)
  - different overall impression, no invalidity
- 2010: General Court (T-9/07)
  - same overall impression, invalidity
- 2011: Court of Justice (C-281/10 P)
  - invalidity



 Grupo Promer invoked lack of novelty and individual character.

This implies disclosure to the public of the prior design.

 Had the Grupo Promer design been made available to the public?

### Timeline for disclosure design



21/02/2003: Grupo Promer confidential letter 08/07/2003: Grupo Promer files

Promer files Spanish design 17/07/2003:

Grupo Promer files RCD 01/11/2003:

Grupo Promer

Spanish

publication



23/07/2003: PepsiCo files Spanish design 09/09/2003: PepsiCo

files RCD

16/11/2003: PepsiCo Spanish

publication

No disclosure



 Grupo Promer claims bad faith on the part of PepsiCo

Acting in bad faith is irrelevant

Grounds for invalidity are exhaustive and do not include bad faith



Article 25(1)(d) Community Design Regulation

- Interpretation by the General Court:
  - scope of protection of design

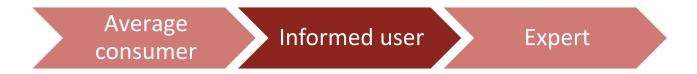
 Conflict when designs create the same overall impression on the informed user, taking into consideration the degree of freedom of the designer

## Who is the informed use in the European Union case?

- Invalidity Division
  - familiar with promotional items for games
- Board of Appeal
  - child or marketing manager
- General Court
  - not a manufacturer or a seller
  - particularly observant, aware of existing designs in the sector (= the state of the art)

## Co-funded by the Court of Justice: the in the Editor of Union as an intermediate notion

Intermediate notion:



Level of attention also intermediate

Definition of "informed"

Will not always make a direct comparison



- Invalidity Division
  - all kinds of promotional items

- Board of Appeal
  - a particular type of promotional item

- General Court
  - a particular category of promotional items

#### Degree of freedom of the designer

#### **Invalidity Division**



#### **Board of Appeal**

- Large degree of freedom
- Few limitations
- Same overall impression

- Severely constricted freedom
- Market constraints
- Small differences suffice to create a different overall impression

# General Court decision of the designer

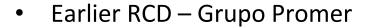
- Freedom is constrained by:
  - technical function
  - statutory requirements

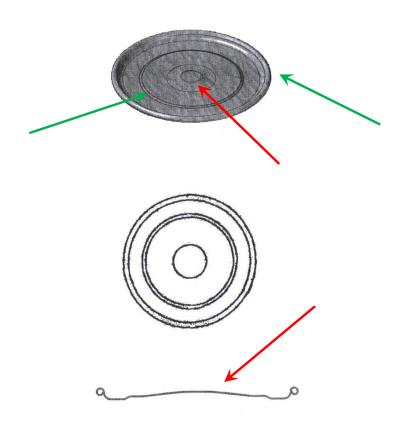
Result: standardisation of certain features

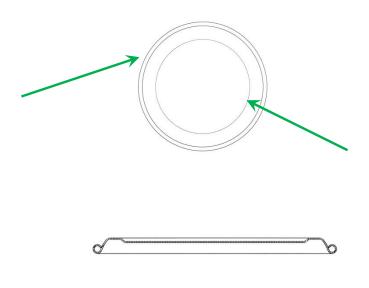
Confirmed Board of Appeal's finding

### Same overall impression European Union

Contested RCD – PepsiCo







## Board of Appeal: differ of the European Union impression

 The informed user will concentrate on arbitrary features.

 He will disregard common features dictated by (market) constraints.

The difference in the designs' profiles will not go unnoticed.

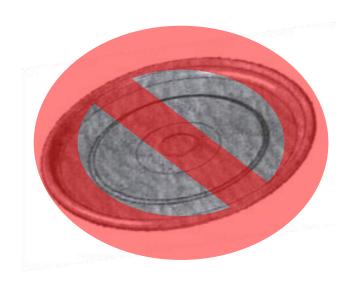
# General Court: same of the European Union impression

Many similarities

- Difference in curvature:
  - not enough to produce different overall impression
  - enough freedom in developing design, e.g.:









### Design exercise

• Designs must:

- comply with definition
- not be contrary to public policy or morality

Applications must:

comply with formalities requirements

- Good quality
- Neutral background
- Maximum of seven views, of the same product
- No explanatory text
- No detailed views

Lack of novelty

Lack of individual character

- Condition:
  - disclosure of the design





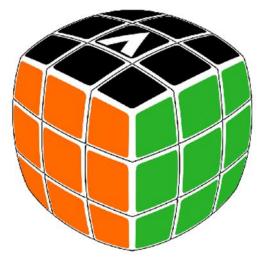
## Neutral background (It Juropean Union

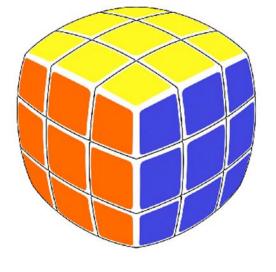




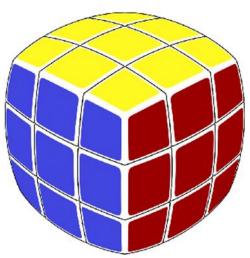
## Co-funded by the Erasmus+ Programme of the European Union

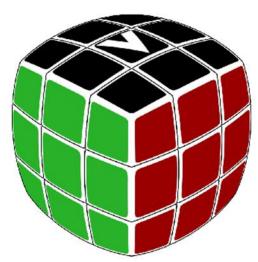
### Same product? Th



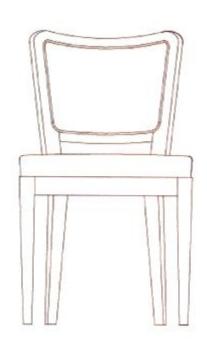


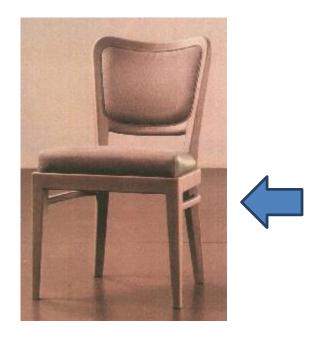






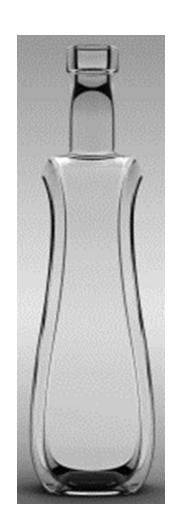
## Same product? (III) Co-funded by the Erasmus+ Programme of the European Union















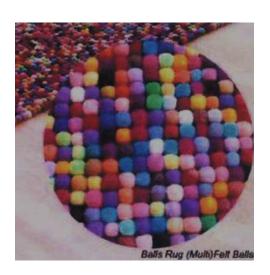


Different colour



Different design

- Small business designs and makes rugs
- Top seller: rug made of multi-coloured balls
- Invoices
- Featured in catalogue







Exhibited in Germany



## Other design: RCD No Programme 9 1 1 2 1 2 1 2 1 2 1 2 2 1 3

Filing date: 1 November 2007



 Could the registered Community design affect the business of the designer and his company?

If so: what can they do?

- Legal grounds?
- Outcome?

- Scope of protection of registered Community designs
- Invalidity of the design?
  - lack of novelty
  - lack of individual character
- Condition:
  - Disclosure

### • Evidence presented:

- photograph from catalogue
- photograph from exhibition stall
- invoice dated 24 July 2007

Sufficient proof of disclosure of prior design

invoice dated 5 November 2007

Lack of novelty

Identical design or only immaterial differences

Lack of individual character?

- Who is the informed user?
- What is the designer's degree of freedom?

# The informed user the European Union designer's degree of freedom

Informed user

- not a technical expert
- not a designer

Degree of freedom of designer

almost unlimited

• Similarities?

• Differences?



- different arrangement
- results in minor impact on overall impression



### Thank you for your attention!

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