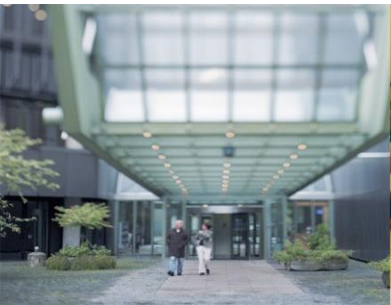


Patenting Your Invention

Marina Moraiti
Patent Examiner, Cluster Computers, EPO

Athens , 27 November 2013
Heraklion, 28 November 2013



Contents

- **Part I**
 - What is a patent?
 - Why patent?
 - Intellectual property at a glance
 - About us
 - Patentability
 - Describing your invention
 - The claims



- **Part II**
 - The grant procedure
 - Filing a patent
 - The search phase
 - Substantive examination
 - Post grant procedures
 - The unitary patent
 - Searching for prior art



Part I

- **What is a patent?**
- Why patent?
- Intellectual property at a glance
- About us
- Patentability
- Describing your invention
- The claims

What is a patent?

(19)   (11) EP 1 741 472 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication: 10.01.2007 Bulletin 2007/02 (51) Int Cl.: A62B 17/00 (2006.01) A41D 13/00 (2006.01)

(21) Application number: 06122328.5

(22) Date of filing: 15.02.2001

(84) Designated Contracting States: DE FR GB IT

(30) Priority: 03.03.2000 US 517919

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC: 01912744.8 / 1 259 294

(71) Applicant: LION APPAREL, INC. Dayton, OH 45413-0576 (US)

(72) Inventors: Aldridge, Donald New Carlise, OH 45344 (US)

(74) Representative: Asquith, Julian Peter Marks & Clerk, 4220 Nash Court, Oxford Business Park South Oxford OX4 2RU (GB)

Remarks: This application was filed on 16 - 10 - 2006 as a divisional application to the application mentioned under INID code 62.

(54) Firefighting garment

(57) A protective garment comprises an outer shell of an abrasion, flame and heat resistant material a thermal barrier/moisture barrier composite positioned between the outer shell and a wearer of the garment, the thermal barrier/moisture barrier composite including a substantially liquid-impermeable membrane bonded to one surface of a heat and flame resistant fabric substrate, and a first layer of heat and flame resistant insulating material attached to an opposite surface of the fabric substrate; a face cloth positioned between the thermal barrier/moisture barrier composite and a wearer of the garment; and a second layer of heat and flame resistant insulating material attached to the face cloth and positioned between the thermal barrier/moisture barrier composite and face cloth.

EP 1 741 472 A2

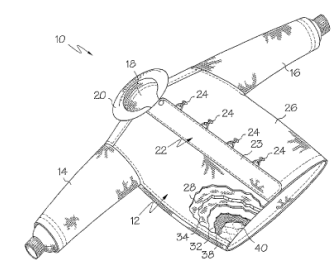


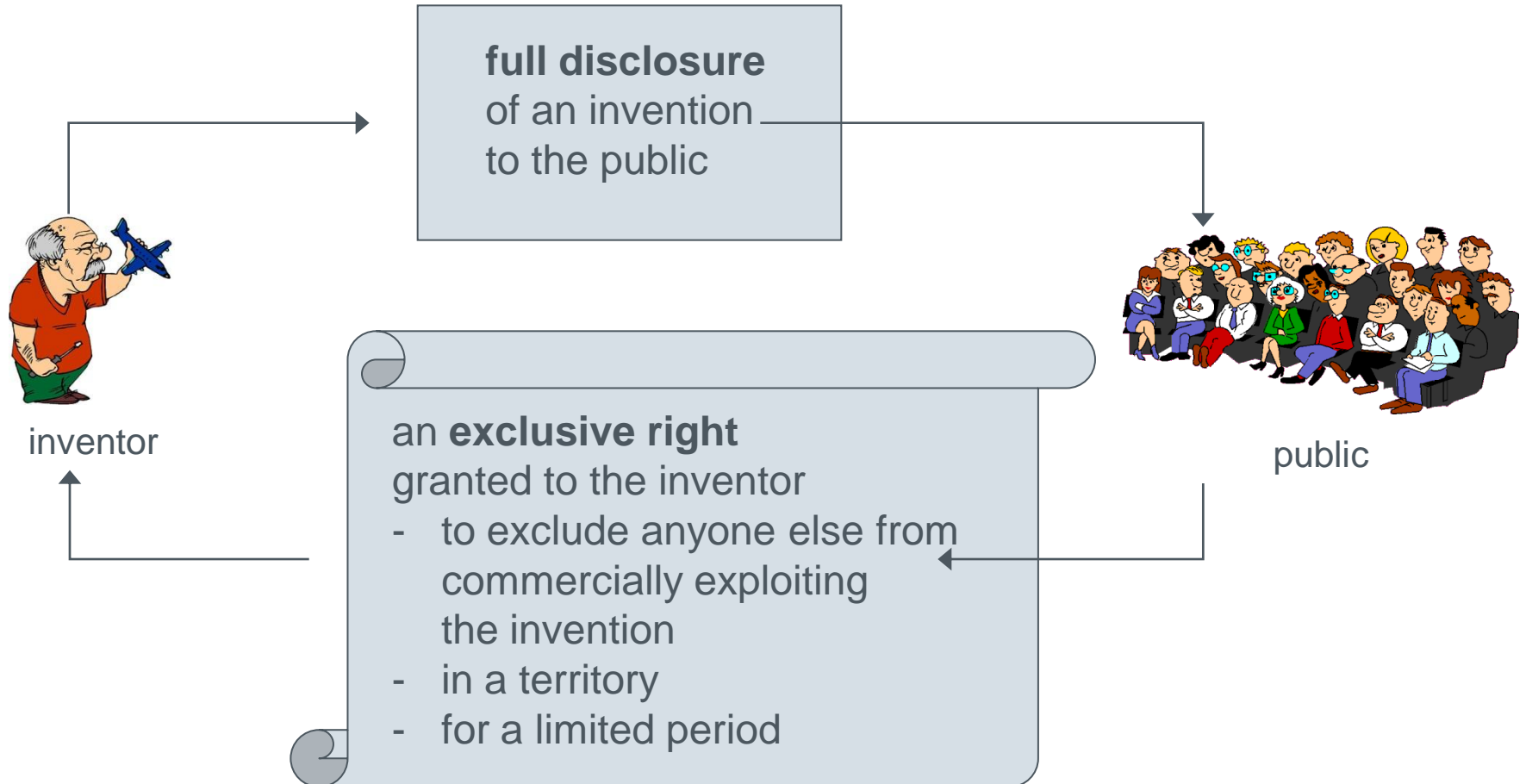
FIG. 1

Printed by Jouve, 75001 PARIS (FR)

- A patent is a **legal title** granting its holder the right to **prevent third parties from exploiting an invention for commercial purposes without authorisation**
- In return for this protection, the holder has to **disclose the invention** to the public
- Protection is granted:
 - for a limited period, generally 20 years
 - for a specific geographic area

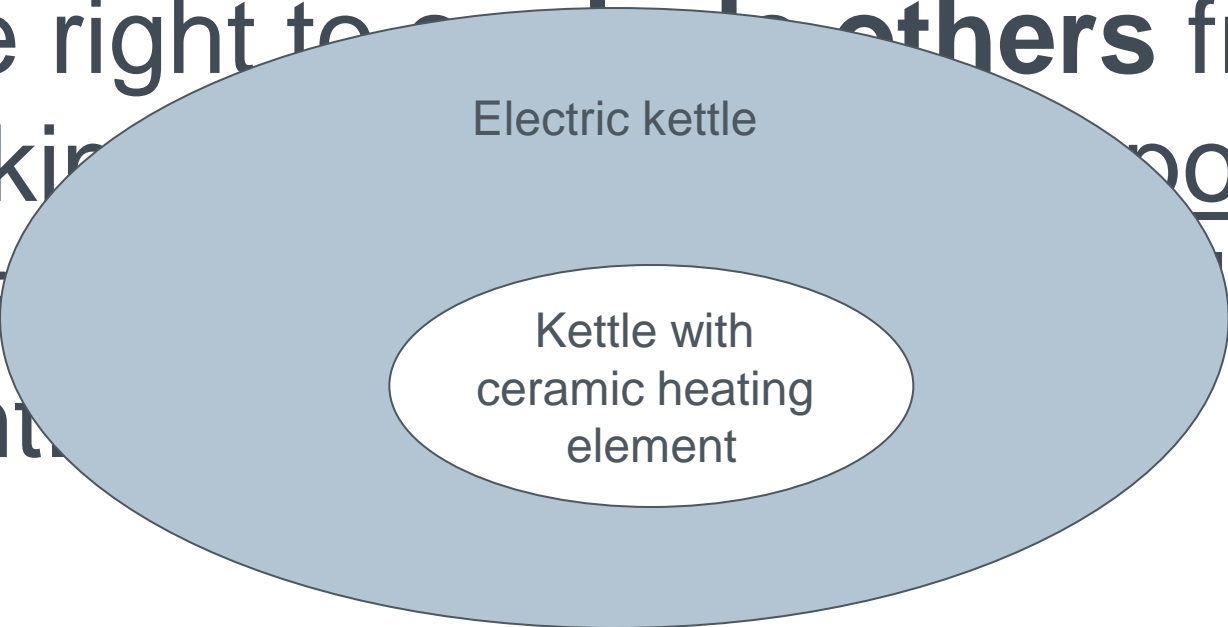
Legal Aspects of Patent Protection

The Fundamental Deal of Patent Law - a Social Contract

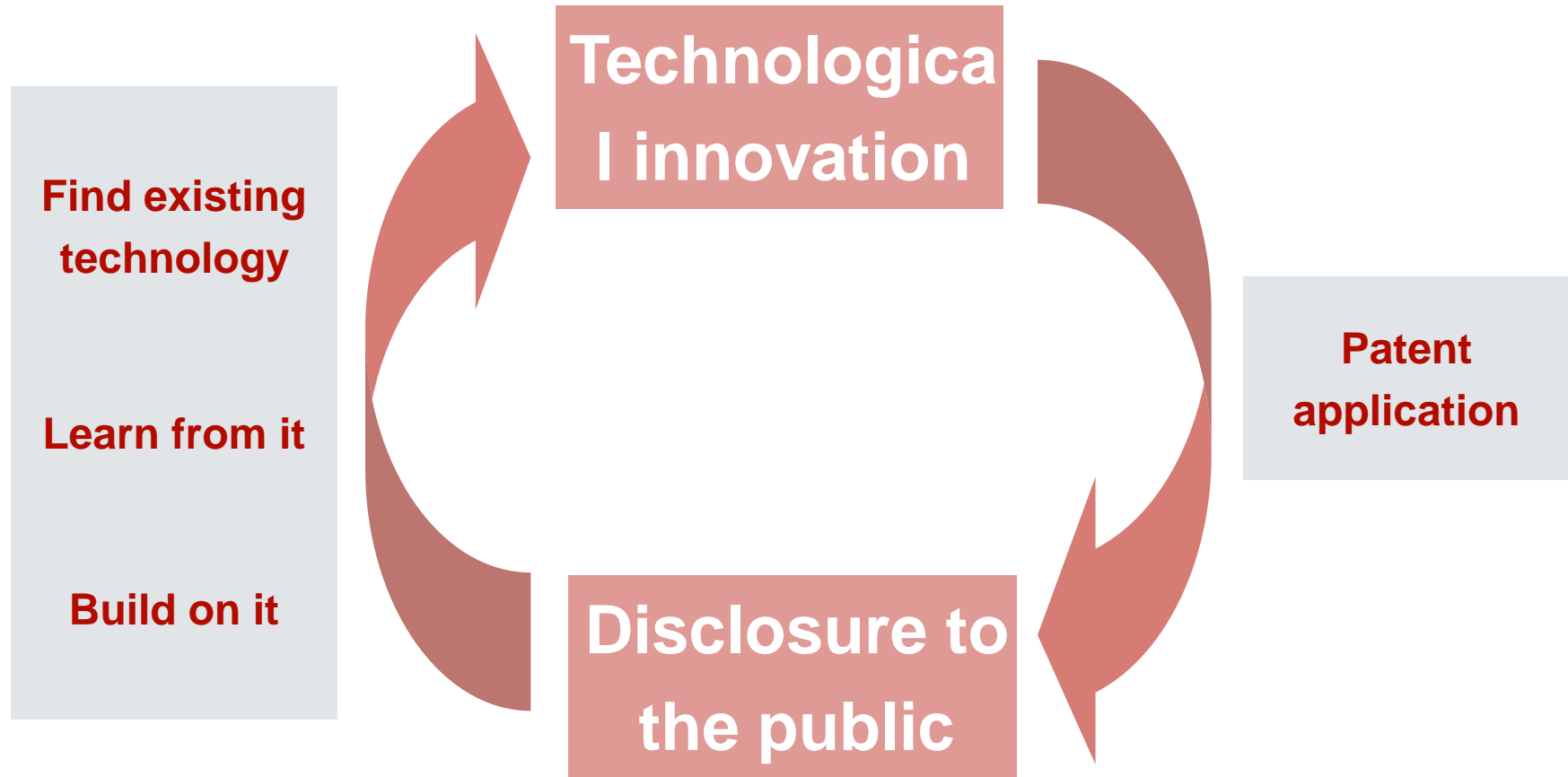


IP rights: what is a patent?

- A patent is the right to exploit an invention **NO!**

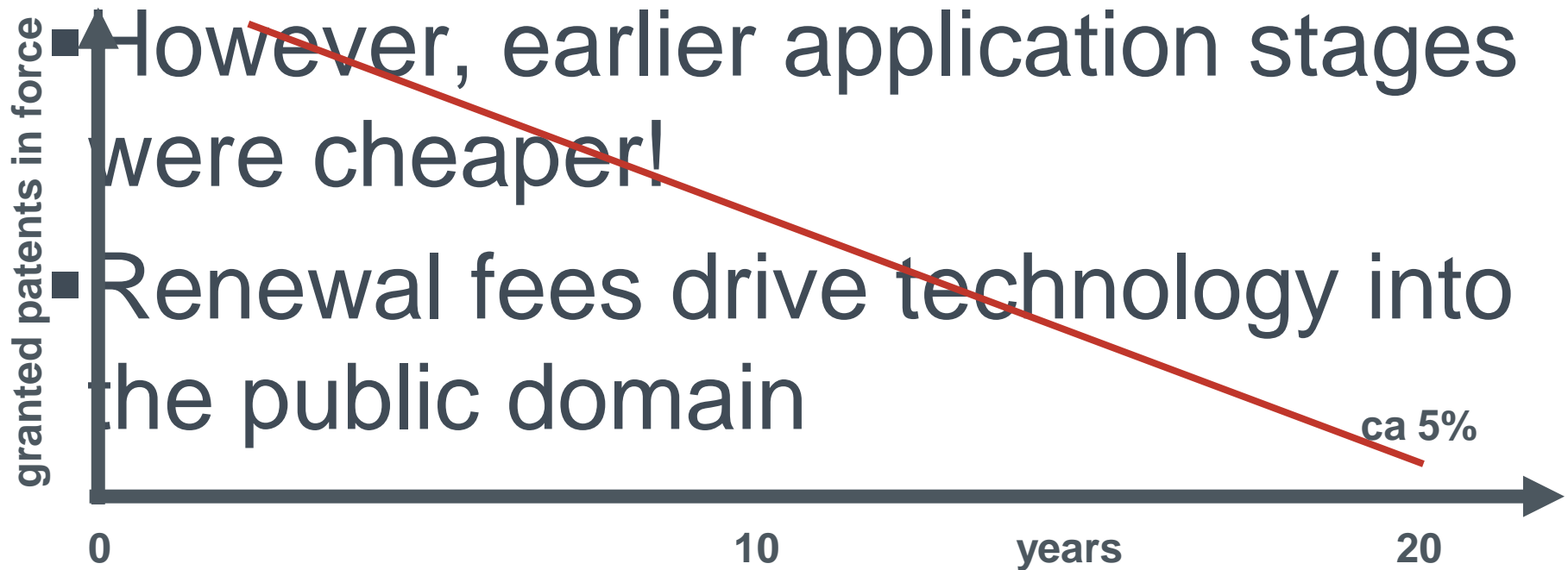
- The right to **prevent others** from making, using, or importing an invention without the **right** holder's consent
- 
- The diagram consists of two nested ovals. The outer oval is light blue and contains the text 'Electric kettle'. The inner oval is white and contains the text 'Kettle with ceramic heating element'. This visualizes the concept of a patent covering a specific invention within a broader category.

A fair system driving knowledge transfer and innovation



Annual renewal fees: “a tax on innovation” ?

- Applicants pay renewal fees every year in every country to maintain their rights – expensive!



Advantages and disadvantages of patenting

Advantages

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

Disadvantages

- Reveals invention to competitors (after 18 months)
- Can be expensive
- Patent enforceable only after grant (this can take 4-5 years)

Alternatives to patenting

Information disclosure (publishing)

- | | |
|---|---|
| <ul style="list-style-type: none">• Cheap• Prevents others from patenting the same invention | <ul style="list-style-type: none">• Does not offer exclusivity• Reveals the invention to competitors |
|---|---|

Secrecy (creating a trade secret)

- | | |
|--|---|
| <ul style="list-style-type: none">• Cheap (but there is the cost of maintaining secrecy)• Does not reveal the invention | <ul style="list-style-type: none">• No protection against reverse-engineering/duplication of invention• Difficult to enforce• "Secrets" often leak quite fast |
|--|---|

Do nothing

- | | |
|--|---|
| <ul style="list-style-type: none">• No effort required | <ul style="list-style-type: none">• Does not offer exclusivity• Competitors will often learn details |
|--|---|



Can trade secrets be an alternative to patents?

- If the invention is a process (e.g. a process of manufacturing) "trade secrets" may be a viable alternative
- But trade secrets can leak out and, if they do, there is no protection
- Once the invention has been disclosed, it cannot be patented
- In other cases it may be preferable to keep inventing without patenting – simply keeping ahead of competitors by bringing new products onto the market faster than they do

What not to do when considering filing a patent application



- **No publication** prior to filing
e.g. no article, press release, conference presentation/poster/proceedings or blog entry



- **No sale** of products incorporating the invention prior to filing



- **No lecture or presentation** prior to filing
except under a **non-disclosure agreement (NDA)**



- Seek **professional advice** soon!
- **File before others do!**



Part I

- What is a patent?
- Why patent?
- **Intellectual property at a glance**
- About us
- Patentability
- Describing your invention
- The claims

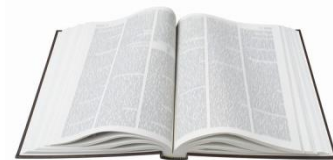
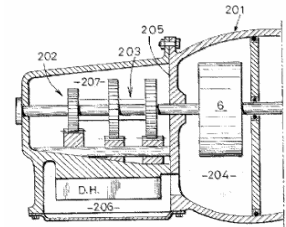
Overview of intellectual property

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



Some IP found in a mobile phone

Trade marks:

- Made by "Nokia"
- Product "N95"
- Software "Symbian", "Java"

Patents:

- Data-processing methods
- Semiconductor circuits
- Chemical compounds
- ...

Copyrights:

- Software code
- Instruction manual
- Ringtone
- ...



Trade secrets:

?

Designs (some of them registered):

- Form of overall phone
- Arrangement of buttons in oval shape
- Three-dimensional wave form of buttons
- ...

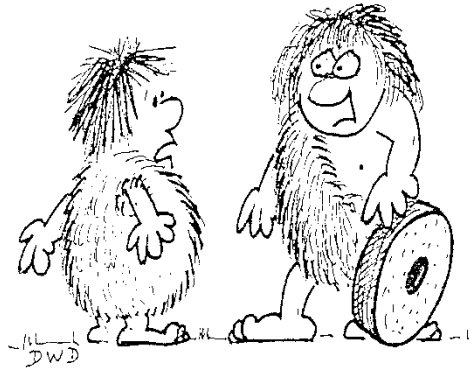


Part I

- What is a patent?
- Why patent?
- Intellectual property at a glance
- **About us**
- Patentability
- Describing your invention
- The claims



Patent office



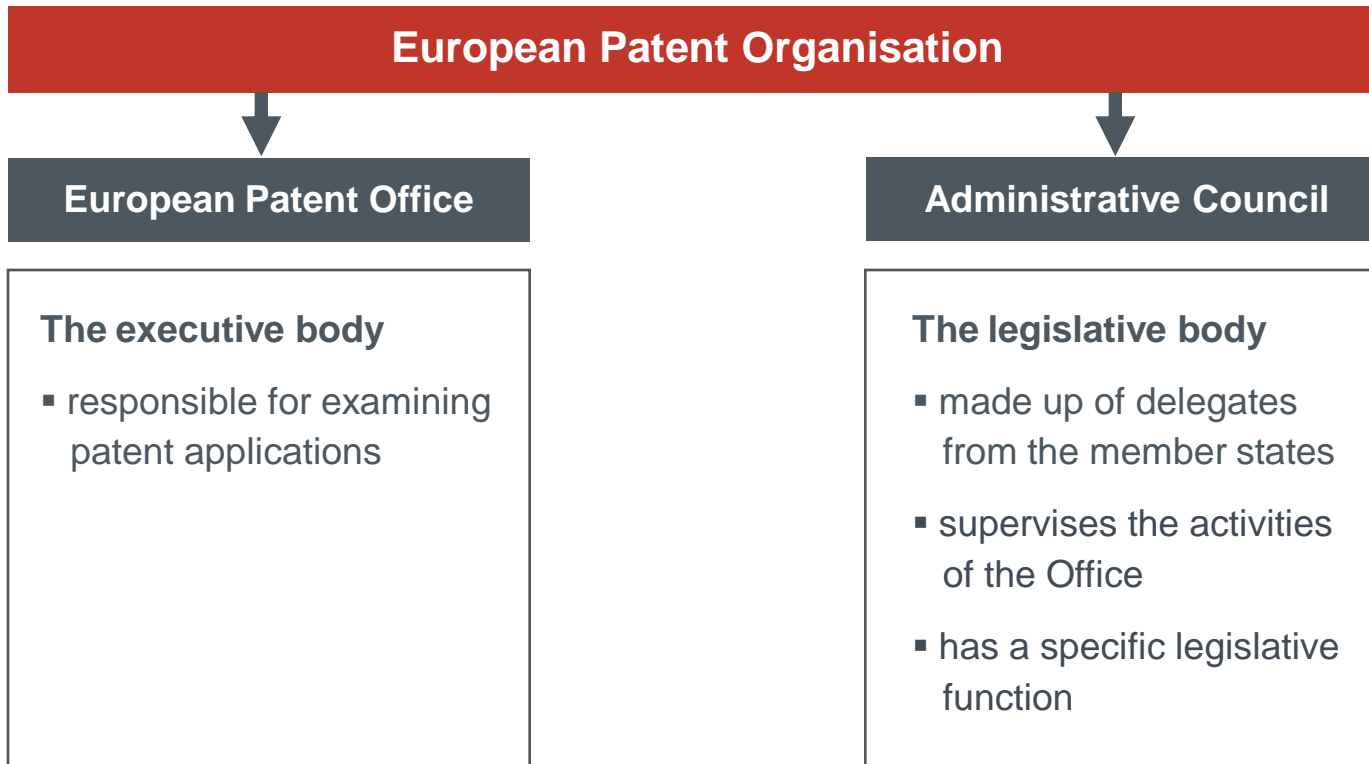
PATENT OFFICE ?

IT HASN'T BEEN

INVENTED

YET !

Structure of the European Patent Organisation



Our mission



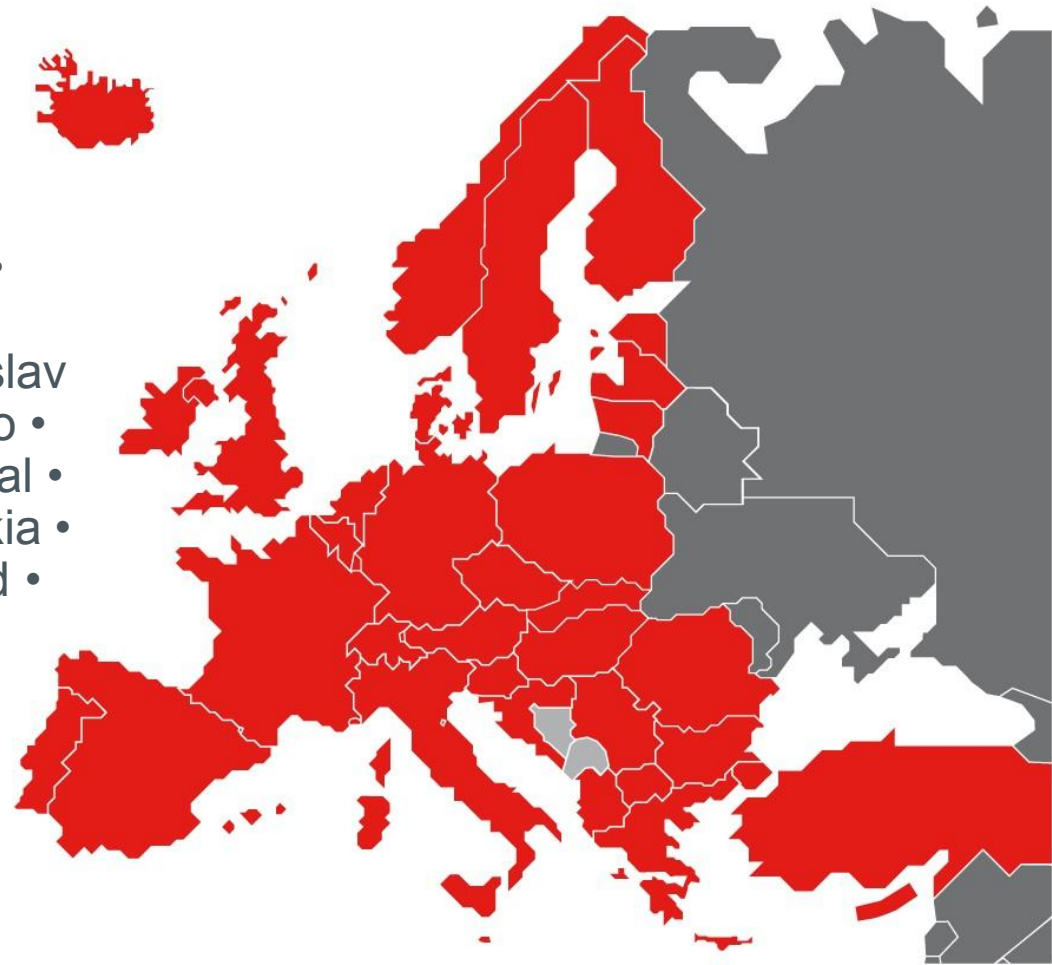
As the patent office for Europe, we support **innovation, competitiveness and economic growth** across Europe through a **commitment to high quality and efficient services** delivered under the European Patent Convention.

38 member states

Albania • Austria • Belgium • Bulgaria • Croatia • Cyprus • Czech Republic • Denmark • Estonia • Finland • France • Germany • Greece • Hungary • Iceland • Ireland • Italy • Latvia • Liechtenstein • Lithuania • Luxembourg • Former Yugoslav Republic of Macedonia • Malta • Monaco • Netherlands • Norway • Poland • Portugal • Romania • San Marino • Serbia • Slovakia • Slovenia • Spain • Sweden • Switzerland • Turkey • United Kingdom

European patent applications and patents can also be extended at the applicant's request to the following states:

Bosnia-Herzegovina • Montenegro



Our role in the European patent system

- We provide patent protection in up to 40 European countries based on a single application in one of the three official languages (German, English, French)
European patent applications can be filed:
 - direct with the EPO
 - via the national patent offices of the contracting states
 - based on an international (PCT) application
- We are also responsible for
 - limitation and revocation proceedings by patentees
 - opposition proceedings by third parties
 - appeal proceedings before the Boards of Appeal
- We will also be in charge of granting and administering the future Unitary Patent of the EU



Highly skilled examiners

- **Top-level engineers and scientists**
 - high degree of technical expertise
 - knowledge of the EPO's three official languages
- **Training during first two years**
 - extensive legal and procedural training
 - individual coaching by experienced examiners
- **Continuing professional development throughout career**



Number of staff in 2012

Munich	3 703
The Hague	2 617
Berlin	277
Vienna	107
Brussels	6
Total	6 710

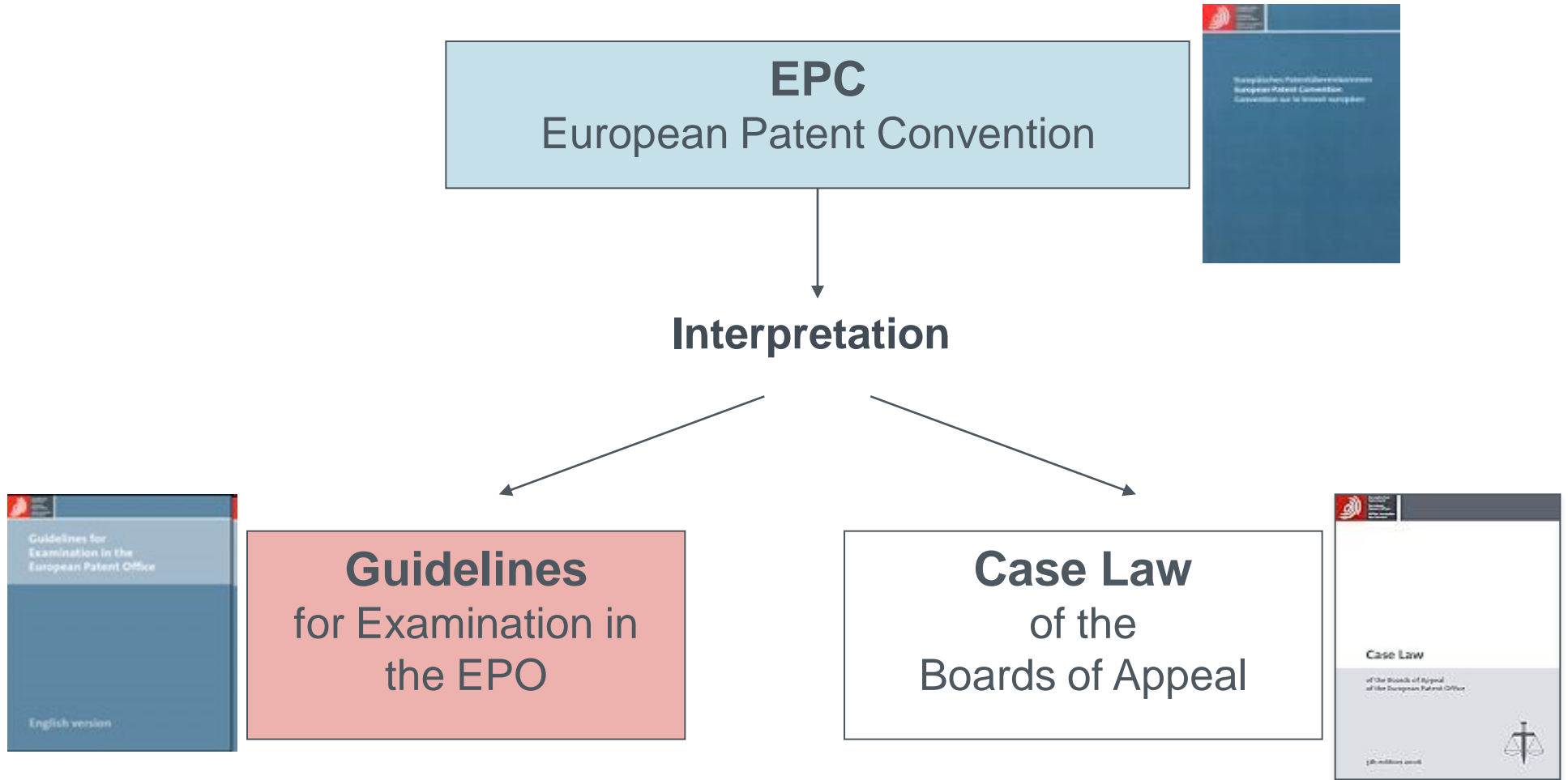




Part I

- What is a patent?
- Why patent?
- Intellectual property at a glance
- About us
- **Patentability**
- Describing your invention
- The claims

What is an invention ?



Basic Requirements

European Patent Convention (EPC)

European patents shall be granted for
- any inventions, in all fields of technology,
provided that they

→ A.52(2)(3)

- are new

→ A.54

- involve an inventive step and

→ A.56

- are susceptible of industrial application

→ A.57

A.52(1)

What is an invention ?



What is an invention ?

No positive definition of an invention

EPC defines non-inventions :

The following, in particular,
shall not be regarded as inventions:

- a) discoveries, scientific theories, mathematical methods;
- b) aesthetic creations;
- c) schemes, rules and methods for performing mental acts, playing games or doing **business**, and **programs for computers**;
- d) presentations of information;

A.52(2)

...only to the extent to which a European patent application relates to such subject matter or activities **as such**.

A.52(3)

Exceptions to patentability as defined by the EPC ¹⁾

- **Plant or animal varieties**
- **Methods for treatment of the human or animal body by surgery or therapy and diagnostic methods**



¹⁾ See Article 53 and Rule 28 EPC.

Exceptions to patentability as defined by the EPC ²⁾

- Inventions whose commercial exploitation would be **contrary to "ordre public" or morality** (e.g. processes for cloning of human beings)



What must an invention have?

An invention has **technical character**

- **implicitly contained in the EPC**



the invention must be of **"technical character"** to the extent that it

- must belong to a field of technology → article 52(1) EPC
- must relate to a **technical** field → Rule 42(1)(a) EPC
- must concern a **technical** problem → Rule 42(1)(c) EPC
- must have **technical** features in terms of which the matter for which protection is sought can be defined in the claim → Rule 43(1) EPC

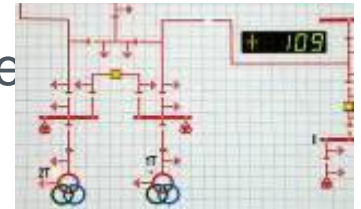
- what is considered "technical" ?
- interpret the EPC with Board of



decisions

What is technical character ?

- processing **physical data** parameters or control value an industrial process



- processing which **affects the way a computer operates**
 - ✓ saving memory, increasing speed
 - ✓ security of a process, rate of data transfer etc.



- the **physical features of an entity**
 - ✓ memory, processor etc.



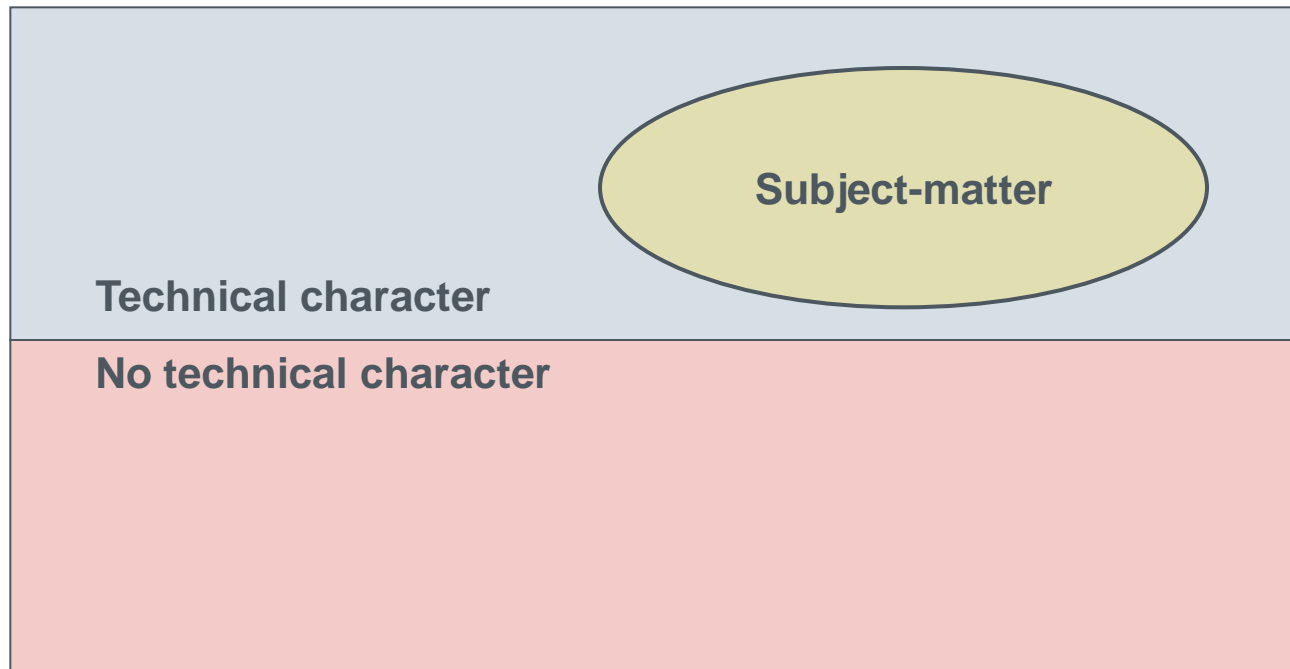
What is technical character ?

further technical effect
control of a brake in a car
faster communication between mobile phones
secure data transmission (encryption of data)
resource allocation in an operating system

no further technical effect
aesthetical effects of music or a video
new rules for an auction scheme
selling and booking sailing cruise packages
calculation of a pension contributions

So what is an invention ?

- ✓ Subject-matter *is not* excluded from patentability
- × **Subject-matter *is* excluded from patentability**



At least one feature has technical character
=> subject-matter has technical character.



Programs for computers

- Program for a computer **"as such"** is excluded from patentability (Article 52(2)(c) EPC), but...
- Not excluded from patentability if, when running on a computer, it causes a further **"technical effect"** going beyond the "normal" physical interaction between the program (software) and the computer (hardware)
- Programs for computers are therefore not automatically excluded from patentability



What happens next?

... This does not imply that all methods involving the use of technical means are patentable !

They still have to be

- new,
- represent a non-obvious technical solution to a technical problem,
- be susceptible of industrial application.



Part I

- What is a patent?
- Why patent?
- Intellectual property at a glance
- About us
- Patentability
- **Describing your invention**
- The claims



Europäisches Patentamt
European Patent Office
Office européen des brevets



Publication number: **0 201 184 B1**

12

EUROPEAN PATENT SPECIFICATION

- 45 Date of publication of patent specification: **16.12.92** 51 Int. Cl.⁵: **C12P 19/34, C12N 15/10, //C12Q1/68,C07H21/00**
- 21 Application number: **86302299.2**
- 22 Date of filing: **27.03.86**

Divisional application 92201226.5 filed on
27/03/86.

54 **Process for amplifying nucleic acid sequences.**

30 Priority: **28.03.85 US 716975**
25.10.85 US 791308

43 Date of publication of application:
17.12.86 Bulletin 86/46

45 Publication of the grant of the patent:
16.12.92 Bulletin 92/51

73 Proprietor: **F. HOFFMANN-LA ROCHE AG**
Postfach 3255
CH-4002 Basel(CH)

72 Inventor: **Mullis, Kary Banks**
447 Beloit Avenue
Kensington California 94708(US)

What does a patent look like?

- **Bibliographic information**
 - Inventor, proprietor, date of filing, technology class, etc.
- **Abstract**
 - Around 150 words as a search aid for other patent applications
- **Description**
 - Summary of prior art (i.e. the technology known to exist)
 - The problem that the invention is supposed to solve
 - An explanation and at least one way of carrying out the invention
- **Claims**
 - Define the extent of patent protection
- **Drawings**
 - Illustrate the claims and description

What must be disclosed in a patent application?

- A detailed description of at least one way of carrying out the invention must be given
- The information disclosed **must be sufficiently** clear to a person "skilled in the art" (Article 83 EPC) – this is called "sufficiency"
- The information disclosed is published in the patent document so that everyone can benefit from it
- The disclosure of the invention in exchange for patent protection is also known as the "patent bargain"

Describing the invention



Computer Programs

- **program listings** in programming languages cannot be relied on as the sole disclosure of the invention
- **description:**
 - to be written substantially in **normal language**, possibly by flow diagrams
 - to be understood by a skilled person having general programming skills
- **short excerpts from programs** written in commonly used programming languages can be accepted if they serve to illustrate an embodiment of the invention



```
Inverse-Simulation (realData)
start
  set parameters and rules of each society to random
  for each society in the world
    Create-Society (parameters, rules)
  end for
  while generation < maxGeneration
    for each society in the world
      Simulate-Society (parameters, rules)
      fitness <- fitness-function(realData)
    end for
    SelectRecombine-Society (fitness)
  end while
  optimumParameters-and-rules <-
    parameters and rules of society[maxFitness]
  return optimumParameters-and-rules
End
```


Disclosure of the invention: Article 83 EPC



A typical correspondence

examining division

The claimed matter is obvious to the person skilled in the art.
(objection under Article 56 EPC)

But then, the application does not sufficiently disclose the invention to enable the person skilled in the art to carry it out.
(objection under Article 83 EPC)

No. This adds subject-matter.
(objection under Article 123(2) EPC)

inventor

No, it isn't.
The person skilled in the art is not aware of this.
(argument)

Then I'll amend the application and put it in.
(amendment)

refusal of the application



Contents

- Introduction
- Intellectual property at a glance
- Why patent?
- What is an invention
- Describing your invention
- **The claims**

Categories of claims

Claim Categories

There are only two basic kinds of claim:

entity:
product, apparatus,
device



activity:
process, method, use



Claim Categories

For many inventions, however, claims in more than one category are needed for full protection.

systems consisting of apparatuses and devices



data structures

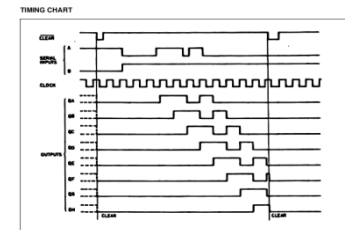


storage media with computer program



computer programs

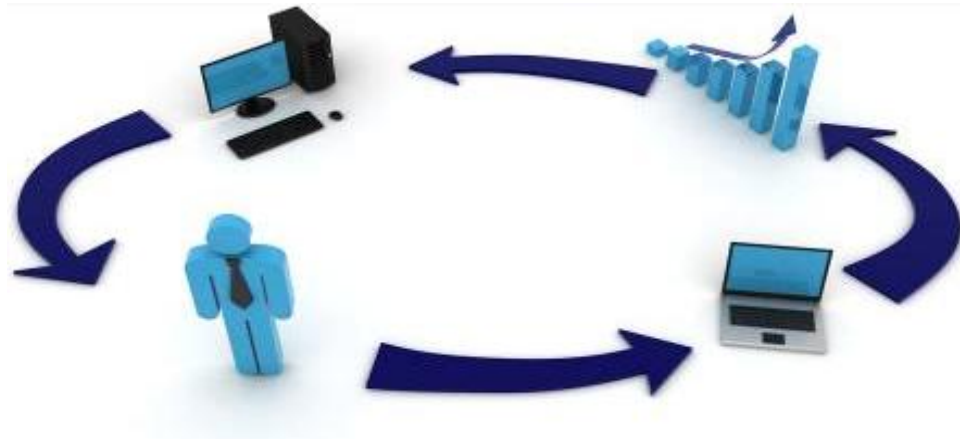
signals



Drafting of Claims - Method Claim

1.

A **method** of operating a data processing system comprising steps A, B

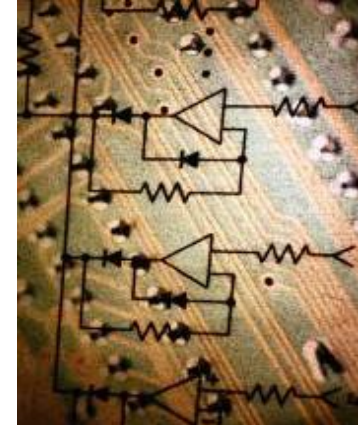


Method claims **involving technical means** are not excluded under Art. 52(2) and (3) (*T258/03*)

Drafting of Claims - Apparatus Claim

2. a) A data processing **apparatus**/ system comprising means for carrying out the method of claim 1.

b) A data processing **apparatus**/ system comprising means for carrying out steps A, means for carrying out step B



Apparatus/system claims are not excluded under Article 52(2) and (3) (T931/95)

Drafting of Claims - Computer Program Product

- 3. a) A **computer program [product]** adapted to perform the method of claim 1.
- b) A **computer program** comprising software code adapted to perform steps A, B...
- 4. a) A computer readable **storage medium** comprising the program of claim 3.
- b) A computer readable **storage medium** comprising instructions to cause a data processing apparatus to carry out steps A, B

Types 3 and 4 are of the same nature, both are a consequence of T1173/97. Independent claims of these two types may exist together without infringing Rule 43(2)



Drafting of Claims

1. A **method** of operating a data processing system comprising steps A, B
2. a) A data processing **apparatus**/ system comprising means for carrying out the method of claim 1.
b) A data processing **apparatus**/ system comprising means for carrying out steps A, means for carrying out step B
3. a) A **computer program [product]** adapted to perform the method of claim 1.
b) A **computer program [product]** comprising software code adapted to perform steps A, B...
4. a) A computer readable **storage medium** comprising the program of claim 3.
b) A computer readable **storage medium** comprising instructions to cause a data processing apparatus to carry out steps A, B

These formulations can be allowed as additional independent claims if the method claim (type 1) is allowable (*T1173/97*)



To bear in mind ...

...on automation

- ❑ A **mere automation** of constraints imposed by the **purely non technical aspects**, such automation using conventional hardware and programming methods is considered to be **obvious** to a skilled person.

(T172/03; RICOH)



To bear in mind ...

...on automation

- ❑ It is the normal aim of the skilled person **to attempt to automate** a manual task as best as possible.

(T845/05; Minerva)



To bear in mind ...

...on information

- ❑ Use of data processing means for processing or providing information of **purely administrative, actuarial and/or financial character is not inventive.**

(T931/95; PBS)



To bear in mind ...

...on the presentation of information

- ❑ The task of designing diagrams is **non-technical**. This is so, even if the diagrams arguably convey information in a way which a viewer may intuitively regard as particularly **appealing, lucid or logical**.

(T125/04; CVA)

To bear in mind ...

...on the presentation of information

- ❑ A specific manner of representation does not contribute to inventive step if conceived exclusively
 - with regard to a human being's mental capabilities,
 - with a view to aiding a user to visually analyse data and make decisions on the basis of this analysis;and it does not relate to any technical format or structure of the information processed, nor is it linked to the internal functioning of the system.

(T125/04; CVA)

Asynchronous resynchronization of a commit procedure

1. A **method** for resource recovery in a computer system, said method, running an application (56 A), said application (56 A) requesting a work operation involving a resource, said method comprising the steps of:

attempting to implement a commit procedure for said work request, whereby the commit procedure is not completed due to a failure at some time after said commit procedure fails;

notifying said application (56 A) that it can continue to run, whereby said application (56 A) need not wait for resynchronization; and

while said application (56 A) continues to run, resynchronizing said incomplete commit procedure for said resource asynchronously relative to said application (56 A).

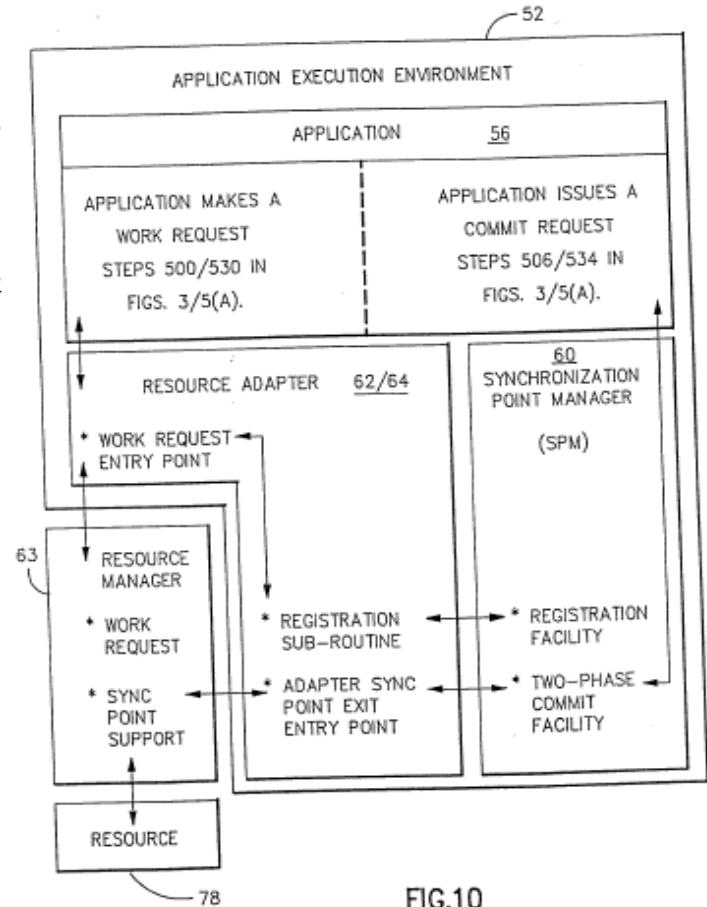


FIG.10

Druckexemplar: IBM 1173/97

20. **A computer program** comprising program code means for performing all the steps of any one of the claims 1 to 13 when said program is run on a computer.
21. **A computer program product** comprising program code means stored on a computer readable medium for performing the method of any one of the claims 1 to 13 when said program product is run on a computer.



- Any questions?