GERMAN AND EUROPEAN PATENT ATTORNEYS COMPUTER SCIENCE

CONTACT US

Patenting Software in the Context of Embedded Systems

Speaker: Dr. Jochen Reich

Dr. Jochen Reich represents clients as German and European Patent Attorney focusing on information technology. He graduated at Technical University of Munich and holds a Master´s Degree and Ph.d. both in computer science. He chairs the patent working group of Society for Computer Science representing the largest computer science community in the German speaking area. He operates his law firm in Munich in close proximity to the German and European Patent Office.

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Patenting software in the context of embedded systems

NOV 12 2020

Lecture > electronica Conferences > electronica Embedded Platforms Conference > Track 4: Software & Tools

15:20-15:50 h | Virtual

Software patenting in Europe is a complex task but is highly required to keep up with international competition and protection of innovation and intellectual assets. The audience will gain a first hand insight in European and German patent practice and will learn about software patenting in the context of embedded systems. The audience will experience the procedure towards protecting intellectual properties and the specific challenges of embedded systems. Detailed examples are discussed and solutions are demonstrated. The benefit will be a first insight in patenting software and an understanding of general guidelines how to proceed with inventive contributions towards patenting. Patenting software in the field of embedded systems is specific and requires appropriate handling. Patents are an appropriate and necessary means towards protecting intellectual property and fostering innovation.

Subjects: Embedded systems

Speaker: Dr. Jochen Reich (Reich-IP)
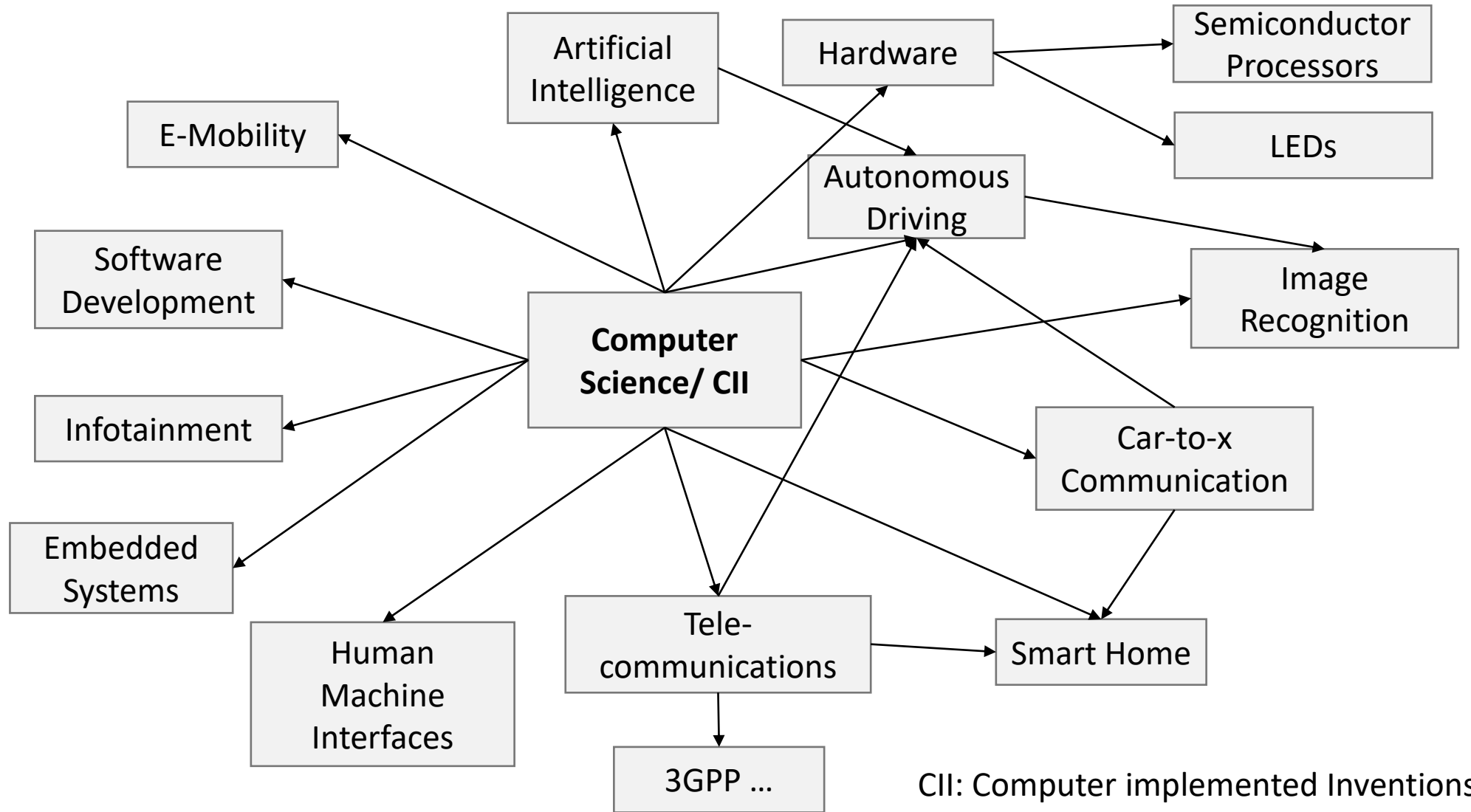
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Embedded Systems

Hardware
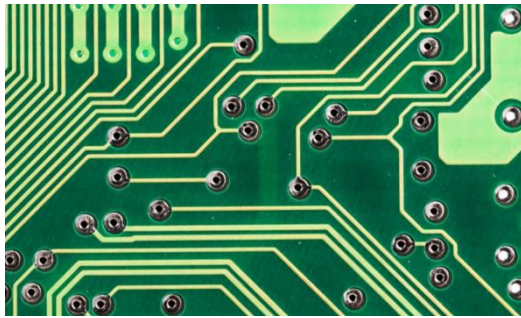
Software

§

Patents

Embedded Systems:
Patenting Hardware and/ or Software?
=> Strategies?

CII: Computer implemented Inventions

Guidelines for Examination in the European Patent Office:

(iv)   Examples of allowable claim types

—   Methods of operating a data-processing system comprising steps A, B, … – a data-processing apparatus/system comprising means for carrying out said method – a computer program [product] adapted to perform said method – a computer-readable storage medium/data carrier comprising said program;

3.9.1   Cases where all method steps can be fully implemented by generic data processing means

A common type of CII relates to subject-matter where all the method steps can fully be carried out by computer program instructions running on means which, in the context of the invention, provide generic data processing functions. Such means can, for example, be embedded in a personal computer, smartphone, printer etc. In such inventions, although different claim structures are possible, the set of claims usually starts with a method

claim. Further claims in other categories with subject-matter corresponding to that of the method may be included to obtain complete protection of the invention. If the invention concerns software which can be loaded into memory, transmitted over a network or distributed on a data carrier, a claim to a computer program [product] may also be present in addition to a computer-implemented method. The category of a computer program [product] claim is distinguished from that of a corresponding computer-implemented method (T 424/03 and G 3/08). The following non-exhaustive list comprises examples of acceptable claim formulations (T 410/96, T 1173/97 and T 2140/08) in such a set of claims:

4.13.1 Interpretation of expressions such as "Apparatus for ...", "Product for ... "

If a claim commences with such words as "Apparatus for carrying out the process ...", this must be construed as meaning merely apparatus suitable for carrying out the process. An apparatus which otherwise possesses all of the features specified in the claims but which is unsuitable for the stated purpose or requires modifications to enable it to be so used for said purpose, is normally not considered as anticipating the claim.
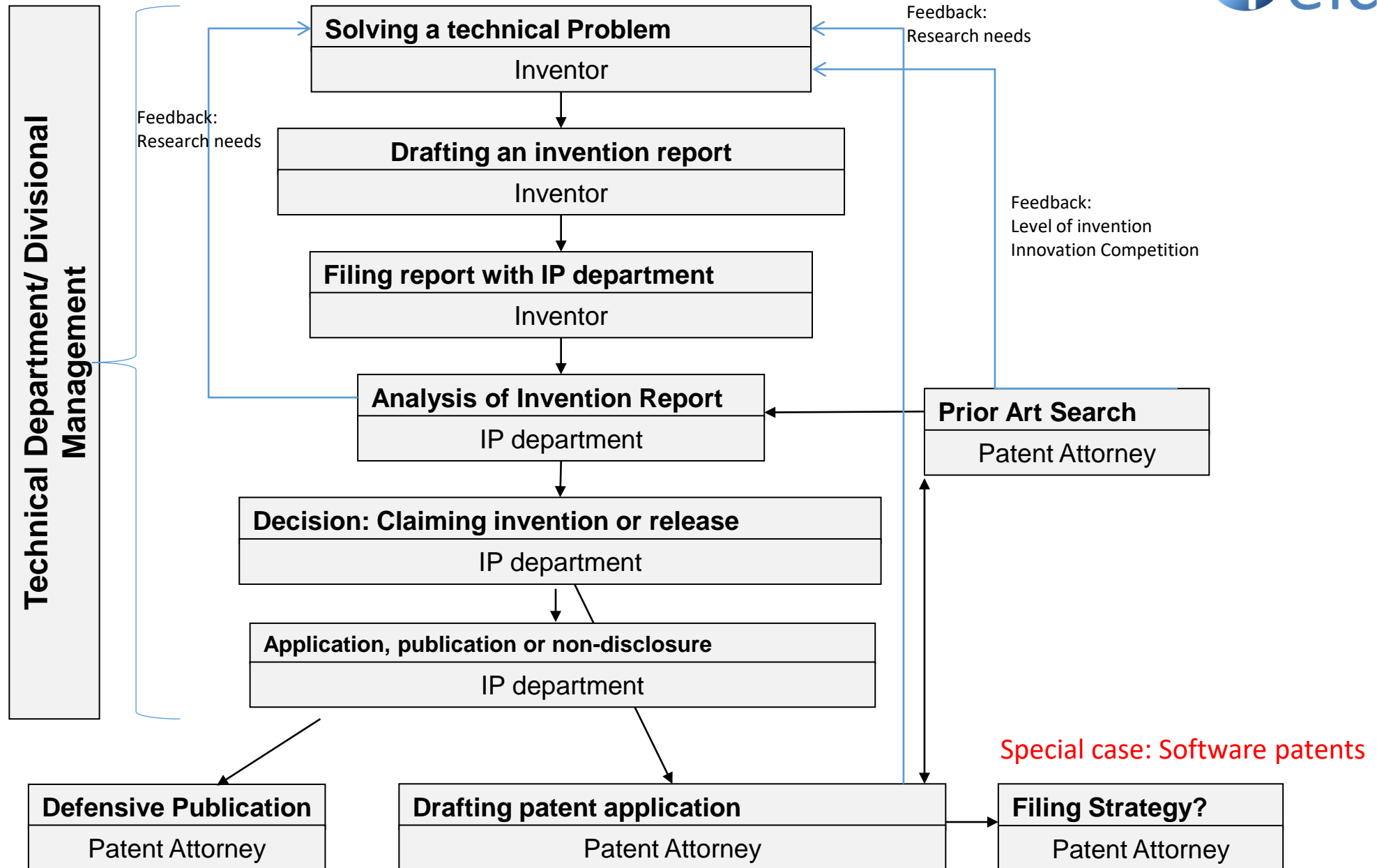
Memory **for** storing information:
ANY (!) memory

Claim types:
- (Computer implemented) method
- Apparatus/ System arrangement
- Computer Program Product

Way to protection:

Technical Department/ Divisional Management

Solving a technical Problem
Inventor

Drafting an invention report
Inventor

Filing report with IP department
Inventor

Analysis of Invention Report
IP department

Decision: Claiming invention or release
IP department

Application, publication or non-disclosure
IP department

Prior Art Search
Patent Attorney

Feedback:
Research needs

Feedback:
Research needs

Feedback:
Level of invention
Innovation Competition

Defensive Publication
Patent Attorney

Drafting patent application
Patent Attorney

Special case: Software patents

Filing Strategy?
Patent Attorney

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Disclosure of the invention?

- What is considered to form prior art?
- When is a technical teaching disclosed?
    - Code obfuscation techniques
    - Types of Reverse Engineering
    - Encryption of Code
    - Distributed/ heterogeneous data sources
- Burden of proof
- Advantages/ Disadvantages of Disclosure
- Perspectives: applicant/ opponent

European Patent Convention EPC

Article 52
Novelty

(1) An invention shall be considered to be new if it does not form part of the state of the art.
(2) The state of the art shall be held to comprise 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.

Defensive Publications:

www.def-pub.de
www.def-pub.com
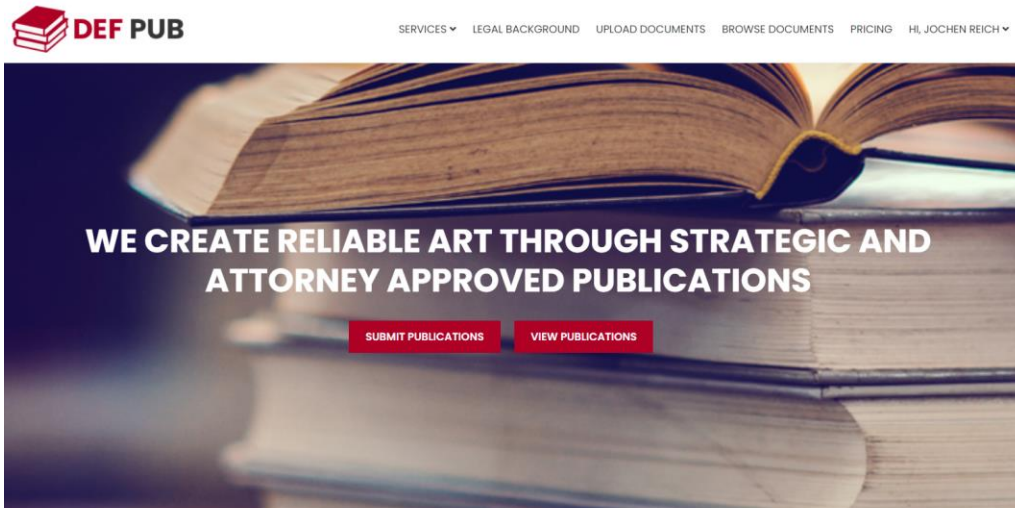
Filing an Invention:

www.erfindungsmeldung.de
www.invention-report.com
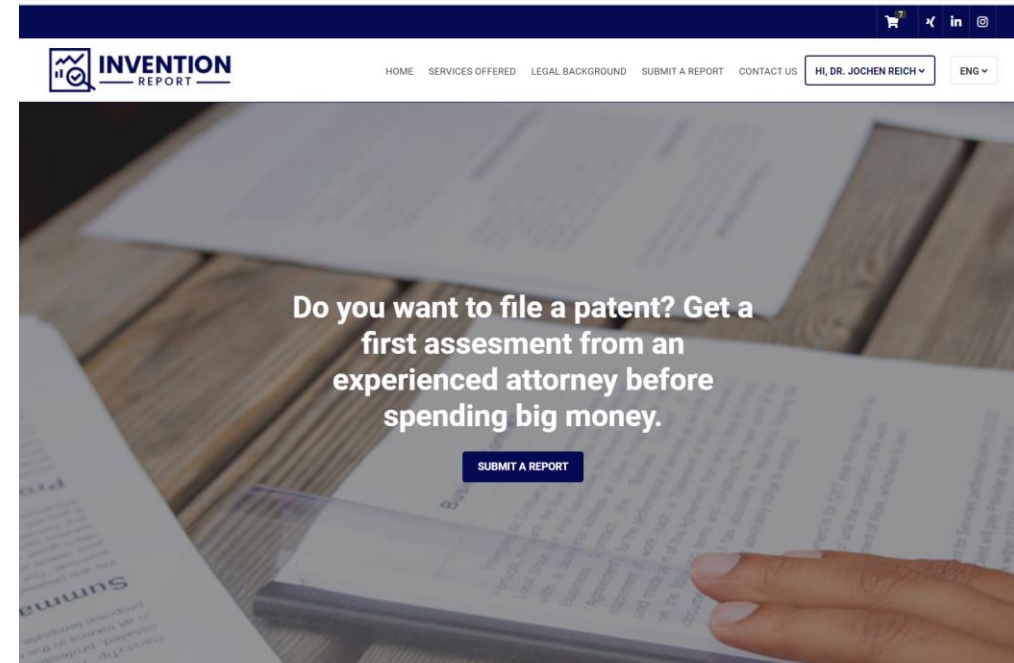
Lifecycle:

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Invention

Application

Grant

Validation?

Portfolio Management

Final written Warning

Request for legitimacy

Validity?

Opposition

Appeal

Revocation

Compensation?
Infringer's profit
…

Monetization
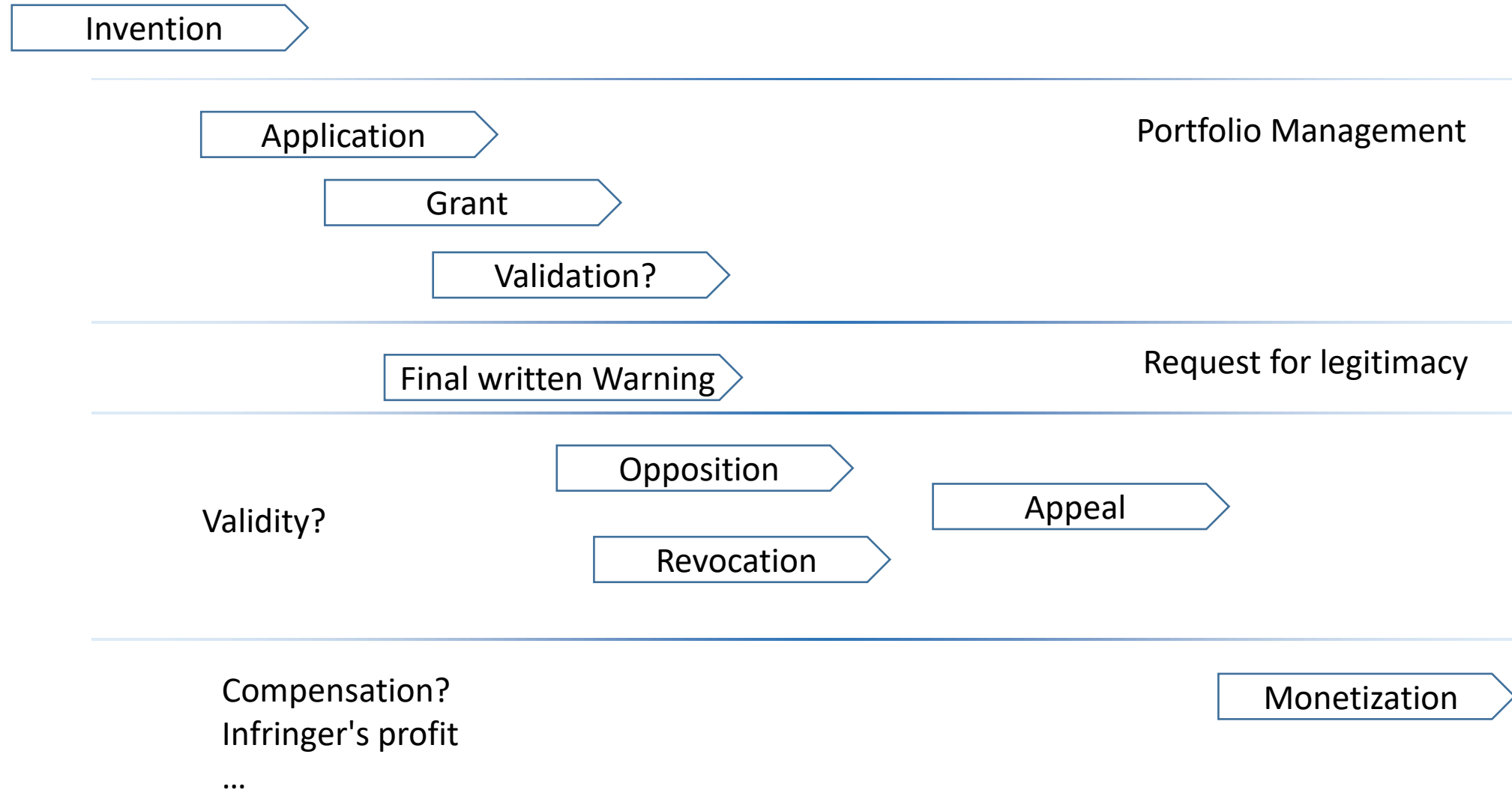
German Patent Act, Patentgesetz, PatG

§ 1

(1) <u>Patents shall be granted for any</u> **inventions**, <u>in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.</u>

(2) (…)

(3) The following in particular shall **not** <u>be regarded as inventions</u> within the meaning of subsection (1):
1. discoveries, scientific theories and <u>mathematical methods</u>;
2. aesthetic creations;
3. schemes, rules and methods for performing mental acts, playing games or doing business, and **programs for computers**;
4. <u>presentations of information</u>.

(4) Subsection (3) shall exclude patentability only to the extent to which protection is being sought for the subject-matter or activities referred to **as such**.

European Patent Convention EPC

Article 52
Patentable inventions

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

(2) The following in particular shall **not** <u>be regarded as inventions</u> within the meaning of paragraph 1:
(a) discoveries, scientific theories and <u>mathematical methods</u>;
(b) aesthetic creations;
(c) schemes, rules and methods for performing mental acts, playing games or doing business, and **programs for computers**;
(d) <u>presentations of information</u>.

(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities **as such**.

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The COMVIK decision (simplyfied)

Applying the Problem-solution approach
1. Determination of the closest prior art
2. Identifying Distinguishing Features
3. Formulation of technical effect
4. Formulation of the objective technical problem
5. Could-would approach

A method in a digital cellular phone system of the GSM type,

in which subscriber units (MS) are controlled by a subscriber identification module (SIM), **characterized in that**

the subscriber identification module (SIM) has at least two optionally usable identifiers (IMSI 1, IMSI 2), the data of which are stored in a location directory of the system, whereby

only one identifier (IMSI 1 or IMSI 2) can be activated at a time and the user can choose the desired one when using a subscriber unit (MS),

Embedded System: Software and/ or Hardware
=> Mixed type? Software as such?

the optional activation being used to split the charges between business and private calls or between different users.

Filing Strategies

Hardware Patents
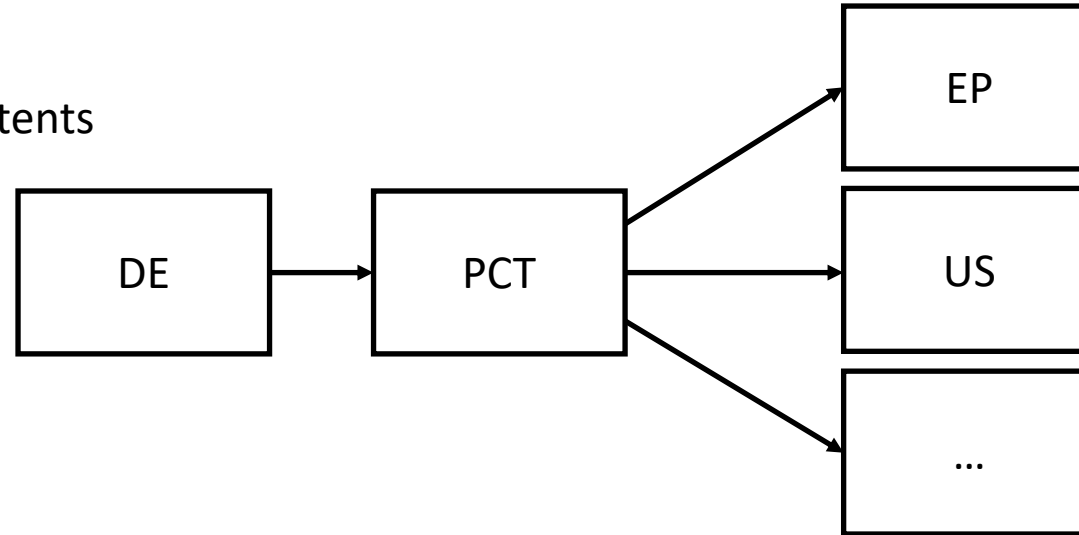
Software Patents
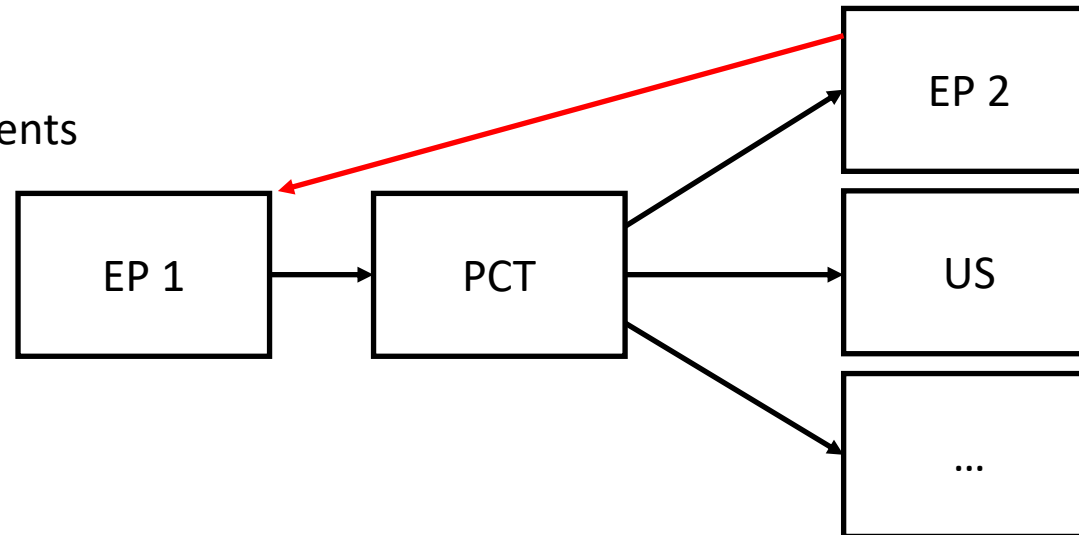
Aspects to be considered:

- specific patent practice in each jurisdiction
- enforcement on national level
- challenging patents on regional/ national level
- different ways to national protection
- specific drafting techniques

Thank you for the Attention

Dr. Jochen Reich
Patentanwalt, European Patent Attorney
Computer Scientist

Any questions? Let´s connect:

Further reading:

www.reich-ip.com

https://patente.gi.de/

www.softwarepatente.com

Anwalt.de