

Is the patentability of computer programs (software) and computer-related inventions in European jurisdictions signatory of the European Patent Convention materially different from the US?

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Q: Is the patentability of computer programs (software) and computer-related inventions in European jurisdictions signatory of the EPC materially different from the US?

- Law Subject: Intellectual Property Law (UL LLB - LA3026)**
 - Specialty Area: Substantive Patent Law (EPC and US Jurisdictions)**
 - Sub-Specialty Area: Patentable Subject Matter Eligibility**
 - Legal Issue: Patentability of Computer Programs (Software)**
 - ▶ Patentability of technically excluded subject matter pursuant to EPC Art 52(2)
 - ▶ Potential divergence between the statutory law requirements regarding the “Patentability of Computer Programs (Software)” and the actual practice
 - ▶ Comparative patent law between EPC/EPO and US 35 USC/USPTO with regards to computer programs/methods (software)
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- Introduction
- Sources of Law
- Statutory Law: Patentability Requirements (US & EPC)
- Statutory Law: Subject Matter Eligibility (US & EPC)
- Case Law: Patentability of Computer Programs (US & EPC)
- Examination Policy & Guidelines: USPTO & EPO
- Concluding Remarks
- References

- **The status of computer programs (software) as patentable subject matter is one of the most controversial legal, policy, and socio-economy debates of the 21st century.**
 - **While there is clarity with regards to patent eligibility of Industrial Age (e.g., machine, article of manufacture, composition of matter) technology, there is uncertainty with regards to Information Age (e.g., smart embedded systems using programmed processors) technology that rely on software.**
 - **Given the complexity of the legal, policy, and economic issues involved, the US, European Courts, and EPO Technical Board of Appeal have struggled to formulate a clear test for determining whether and under what circumstances computer-related inventions (software) should be patent-eligible subject matter or be excluded.**
 - **It is commonly believed (by inventors, business, and patent professionals) that there are significant differences between the patent eligibility for computer programs among the US and European jurisdictions from EPC signatory countries. Is this true or perhaps just a myth?**
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- International Patent Treaties (EPO, UK, US)

- ▶ Paris Convention for Protection of Industrial Property (WIPO)
- ▶ Patent Cooperation Treaty - PCT (WIPO)

- Regional Patent Treaties (EPO, UK)

- ▶ European Patent Convention - EPC (EPO, Council of Europe) :: Art 52 & 53

- Statutory Law

- ▶ UK Patent Acts 1977 :: Section 1(2) - Exclusions from Patentability
- ▶ US 35 USC; 37 CFR :: 35 USC 101 - Inventions Patentable

- Recent Case Law Decisions & Jurisprudence

- ▶ Biski v. Kappos (US Supreme Court 2010); DUNS Licensing (EPO 349, 2007)

- Policy: Examination Procedure, Policy & Guidance

- ▶ USPTO Guidance for Determining Subject Matter Eligibility for Process Claims in View of Bilski v. Kappos (July 27, 2010) - Patent Examination Policy Memorandum & EPO Examination Guidance

Brief Overview of US Patent Law

Case Law (Court of Appeals for the Federal Circuit,
US Supreme Court)

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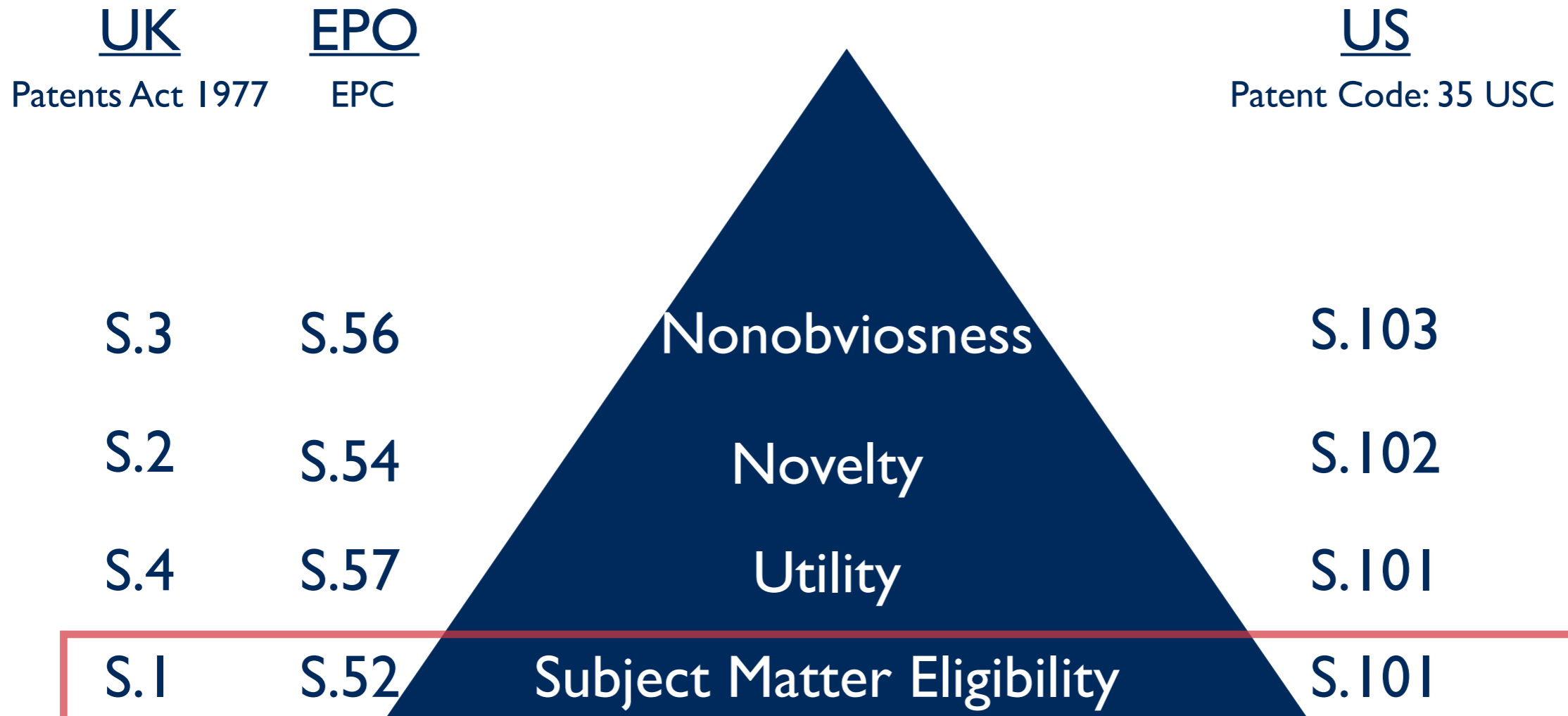
Manual of Patent Examining Procedure (MPEP)

Title 37 of the Code of Federal Regulations, 37 CFR

Title 35 of the United States Code, 35 USC

US Constitution

EU & US Patentability Requirements



– US Jurisdiction: US Patent Code - 35 USC 101 & Case Law

- ▶ Eligible Subject Matter: S101. Inventions Patentable: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”
- ▶ Subject Matter Exclusions: Judicially created exceptions (US Supreme Court): abstract ideas, laws of nature, and natural phenomena (LeRoy v. Taham, O’Reilly v. Morse, Diamond v Diehr).

– European Jurisdictions (EPO): EPC Art. 52(2)

- ▶ Article 52. Patentable inventions: (1) European patents shall be granted for any inventions, in all fields of technology, which are susceptible of industrial application, which are new and which involve an inventive step. (2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1: (a) discoveries, scientific theories and mathematical methods; (b) aesthetic creations; (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

– UK National Jurisdiction: Patents Act 1977 S.1

- ▶ A patent may be granted [...] if (a) the invention is new, (b) it involves and inventive step, (c) it is capable of industrial application, (d) it is not excluded. — Exclusions in Section 1(2)(c) — Identical to EPC 52(c)

- US Jurisdiction: **Bilski v. Kappos (US Supreme Court, 2010)**

- ▶ Computer programs inventions may or may not be patent-eligible: process v. an abstract idea.
- ▶ The machine-or-transformation test remains an useful investigative tool to determine eligibility.
- ▶ Factors beyond the machine-or-transformation test (a claimed process is patent-eligible under S101 if 1) it is tied to a particular machine or 2) it transforms a particular article into a different state or thing) may weight for or against a finding that a claimed invention is patentable.

- European Jurisdictions (EPO): **DUNS Licensing Associates, 2008 EPOR**

- ▶ Vicom/Computer Related Invention (Case T-208/84 OJEPO Bd. Appeal 1987): “an invention which would be patentable according to conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. Decisive is what technical contribution [after DUNS changed to technical character] as defined in the claim when considered as a whole make to the known art.” Conclusion: Programs for computer which have “technical character” (are inventions) are not considered to be a “program for computer” “as such” and therefore are not excluded.
- ▶ DUNS: technical character (e.g. physical entry or physical change) [e.g., a computer program claim would not excluded if explicitly included hardware).

USPTO Current Examination Guidelines

– USPTO Guidance for Determining Subject Matter Eligibility for Process Claims in view of *Bilski v Kappos*, Patent Examination Policy (July 27, 2010)

– Factors Weighting Toward Eligibility

- ▶ **“Recitation of a machine or transformation (either express or inherent).** Evidence: a) Machine or transformation is particular, b) Machine or transformation meaningfully limits the execution of the steps, c) Machine implements the claimed steps, d) The article being transformed is particular, e) The article undergoes a change in state or thing (e.g., objectively different function or use), e) The article being transformed is an object or substance.”
- ▶ **“The claim is more than a mere statement of a concept.** Evidence: a) The claim describes a particular solution to a problem to be solved, b) The claim implements a concept in some tangible way, d) The performance of the steps is observable and verifiable.”

– Factor Weighting Against Eligibility

- ▶ **“No recitation of a machine or transformation (either express or inherent).”**
- ▶ **“Insufficient recitation of a machine or transformation.** Evidence: Involvement of machine, or transformation, with the steps is merely nominally, insignificantly, or tangentially related to the performance of the steps, e.g., data gathering, or merely recites a field in which the method is intended to be applied, b) Machine is generically recited such that it covers any machine capable of performing the claimed step(s), c) Machine is merely an object on which the method operates. Transformation involves only a change in position or location of article, d) Article is merely a general concept.”

USPTO Current Examination Guidelines

- Examples of general concepts (excluded) include, but are not limited, to:**
 - ▶ **Basic economic practices or theories (e.g., hedging, insurance, financial transactions, marketing);**
 - ▶ **Basic legal theories (e.g., contracts, dispute resolution, rules of law);**
 - ▶ **Mathematical concepts (e.g., algorithms, spatial relationships, geometry);**
 - ▶ **Mental activity (e.g., forming a judgment, observation, evaluation, or opinion);**
 - ▶ **Interpersonal interactions or relationships (e.g., conversing, dating);**
 - ▶ **Teaching concepts (e.g., memorization, repetition);**
 - ▶ **Human behavior (e.g., exercising, wearing clothing, following rules or instructions);**
 - ▶ **Instructing “how business should be conducted.”**
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EPO Current Examination Guidelines

- EPO Guidelines for Examination - Part G - 3.6 Programs for Computers

- ▶ **“The basic patentability considerations in respect of claims for computer programs are in principle the same as for other subject-matter. While "programs for computers" are included among the items listed in Art. 52(2), if the claimed subject-matter has a technical character it is not excluded from patentability by the provisions of Art. 52(2) and (3).”**
- ▶ **“A computer program claimed by itself is not excluded from patentability if it is capable of bringing about, when running on or loaded into a computer, a further technical effect going beyond the "normal" physical interactions between the program (software) and the computer (hardware) on which it is run (T 1173/97 and G 3/08). The normal physical effects of the execution of a program, e.g. electrical currents, are not in themselves sufficient to lend a computer program technical character, and a further technical effect is needed. The further technical effect may be known in the prior art.”**
- ▶ **A further technical effect which lends technical character to a computer program may be found e.g. in the control of an industrial process or in the internal functioning of the computer itself or its interfaces under the influence of the program and could, for example, affect the efficiency or security of a process, the management of computer resources required or the rate of data transfer in a communication link. The processing of data which represents physical entities (such as an image stored as an electric signal), resulting in a change in those entities (T 208/84), also denotes a further technical effect.**

- US and EPC (and domestic law for countries signatory of the EPC including all EU countries) take different approaches to the issue of patentable subject matter eligibility.

- US Jurisdiction

- ▶ US statutory law defines patentable inventions positively (i.e., any new and useful process, machine, manufacture, or composition of matter) and leaves exclusions to judicial interpretation (US Supreme Court).

- European Jurisdiction (EPC Signatory Countries)

- ▶ EPC (while setting out the general requirements for novelty, inventive step, and industrial applicability) defines invention negatively, according to what is excluded from being patentable.
- ▶ EPC Art 52 presents a non-exclusive list of what are NOT considered inventions. The list explicitly includes programs for computers.

- European National Jurisdictions (e.g. UK, Germany, France, Spain, Italy)

- ▶ National patent laws in EPC signatory countries (e.g., UK, German) follow closely the EPC (e.g., UK Patents Act 1977) and EPO case law. UK Current Law: *Astron Clinica v Controller* [2008] RPC 339
- ▶ Small differences in language. Courts “should” follow the EPO jurisprudence (highly persuasive in UK)

- US Jurisdiction

- ▶ Statutory Law: Computer Programs are not excluded (35 USC 101)
- ▶ Current Case Law: Bilski v. Kappos (Machine-or-Transformation Test + Other Factors; Exclude Abstract Ideas)
- ▶ Examination Guidelines: Factors Weighting for (e.g. MT) or against (e.g., abstract) Eligibility

- European Jurisdiction (EPC Signatory Countries)

- ▶ Statutory Law: Computer Programs are explicitly excluded (Art 52: programs for computers, as such)
- ▶ Current Case Law: DUNS Licensing (Technical Character, Further Technical Character, Hardware)
- ▶ Examination Guidelines: “A computer program claimed by itself is not excluded from patentability if it is capable of bringing about, when running on or loaded into a computer, a further technical effect.” Examples of Technical Effect.

Concluding Remarks - Part III

- In the US jurisdiction, “abstract ideas” are not patentable -which in the case of computer programs effectively means “computer related inventions which do not have technical character and achieve a further technical effect” (this is actually the law regarding patent-eligibility of computer-related inventions in European jurisdictions signatory of the EPC).
 - The approach taken in the US seems more logical since the case law does not have to “contradict” the statutory law as is the case in European jurisdictions that explicitly exclude “programs for computers” in the EPC and national legislation (statutory law) but then award a significant number of patents for computer programs by relying on case law to support a conclusion that “this particular computer program IS NOT a computer program for the purposes for EPC 52”).
 - EPO Enlarged Board of Appeal noted in 2010 “internationally increasingly convergent decisions, which included *Duns Licensing*, the 2008 English Court of Appeal Decision *Symbian Ltd v. Comptroller-General for Patents*, and the CAFC case *In re Bilski*.”
 - *In conclusion:* The differences in “actual practice” of patent examination policy are very minor and EPO/USPTO are very likely to produce the same result for a given invention (they are not materially different, especially when claim drafting is adapted to the respective practices of the USPTO and EPO).
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– Statutory & Primary Treaty Sources

- ▶ US: 35 USC (Patent Code)
- ▶ UK: Patent Act 1977
- ▶ EPC: European Patent Convention (15th Edition, 2013)

– Case Law Authorities

- ▶ US: LeRoy v Taham (55 US at 175-76, 1852); Gottschalk v Benson (188 F.2d 165, 166 CCPA 1972); Parker v Flook (437 US 584, 585 1977); Diamond v Chakrabarty (447 US 303 1980), Diamond v. Diehr (450 US 175, 177-78 1981), State Street Bank v. Signatory Financial Group (149 F.3d 1368, 1373 Fed. Cir. 1998); Bilski v Kappos (130 S. Ct. 3218 2010).
- ▶ EPC: Viacom/Computer Related Invention (Case T-208/84 OJEPO Tech. Bd. Appeal 1986); Koch & Sterzel (Case T-26/86 OJEPO Tech. Bd. Appeal 1988); IBM/Computer Program Product (Case T1173/97 OJEPO Tech. Bd. Appeal 1998); PBS Partnership (Case T-931/95 OJEPO 2001); Hitachi/Auction Method (Case T-258/03 OJEPO 575 Tech. Bd. Appeal 2004); Microsoft/Clipboard Formats (Case T-424/03 EPOR Tech. Bd. Appeal 2006); DUNS Licensing (Dunc Licensing OJEPO 62, 2008).
- ▶ UK: Merrill Lynch (1989 RPC 561); Fujitsu (1997 RPC 618); Aerotel (2007 1 All ER 228-30); Symbian (2009 RPC 1 AC at 7); Astron Clinica;

– Summary of Academic References

- ▶ P Virtanen, "Latest Software Patent Law Developments in the US and EU", (2010) 7:3 SCRIPTed 562 Journal of Law, Technology & Society; S Marsnik, "Drawing a Line in the Patent Subject-Matter Sand" B.C. Int'l & Comp. L. Rev. 227 (2011)