

PART I: NEW DOMESTIC LAW

PATENTABILITY

Section 1: Patentable inventions

1.01 The Patents Act 1977 sets out for the first time to codify what is meant by a patentable invention. Previous legislation up to and including the 1949 Act had merely repeated the stipulation, originally set out in the Statute of Monopolies of 1623, that a patent may be granted only for a manner of new manufacture.

1.02 [Deleted]

Section 1(1)

A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say -

- (a) the invention is new;*
- (b) it involves an inventive step;*
- (c) it is capable of industrial application;*
- (d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;*

and references in this Act to a patentable invention shall be construed accordingly.

1.03 This provision is an enabling one; it does not require that a patent be granted if the invention fulfils the stipulated conditions, but merely allows it, since there are also conditions to be complied with in respect both of the applicant and the application, these being set out in later sections.

s.125(1) 1.04 "Invention" in this context means that which is specified in a claim. Although the term has a meaning in ordinary speech, in *Biogen Inc v Medeva plc* [1997] RPC 1 Lord Hoffmann declined to attempt to define the term more closely, saying that judges "would be well advised to put on one side their intuitive sense of what constitutes an invention until they have considered the questions of novelty, inventiveness and so forth". It is possible for a specification to contain claims which relate to patentable inventions as well as claims which define inventions which are not patentable or matters which are not inventions. In such a case amendment is necessary, since a patent should be granted only when each claim defines a patentable invention. A claim will generally be held to be bad if anything falling within its scope is not patentable.

1.05 The term "a patentable invention" is defined by setting out four conditions, all of which must be satisfied in order for an invention to qualify for the grant of a patent. Since they are expressed as positive requirements the onus is upon an applicant to demonstrate compliance when faced with a reasonable challenge. The manner in which each of the conditions (a), (b) and (c) is to be assessed is set forth in ss.2, 3 & 4 respectively. The fourth condition involves certain things which, for purposes of the Act, are not to be regarded as inventions (see 1.07 to 1.32) and certain inventions for which a patent will not be granted (see 1.33-1.37).

s.130(7)-
s.91 1.06 The tests set out in s.1(1) and further elaborated in s.1(2)-(4) and ss.2-4 are so framed as to have, as nearly as practicable, the same effects in the UK as the corresponding provisions of the EPC; these are Articles 52-57. (More particularly, EPC aa.52(1) to (3) and 53 correspond to s.1(1) to (4)). Hence, although not binding on the

Office, decisions on patentability given by EPO Boards of Appeal are of persuasive value in interpreting ss.1-4 (see 0.07-09 and 130.30-33).

Section 1(2)

It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of -

- (a) *a discovery, scientific theory or mathematical method;*
- (b) *a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;*
- (c) *a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;*
- (d) *the presentation of information;*

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.

Scope of the exclusions

1.07 The Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd & Ors Rev 1* [2007] RPC 7 (*Aerotel/Macrossan*), made it clear that whether an invention covers patentable subject matter is a question of law which should be decided during prosecution of the patent application. It is not a question on which applicants are entitled to the benefit of the doubt. Consequently, the position will be assessed fully by patent examiners, and objections will not be dropped simply because the applicant asserts the invention relates to patentable subject matter. Giving benefit of reasonable doubt at the application stage may still be appropriate if debatable questions of pure fact, not law, arise. Such questions may include determining the date of a particular disclosure or the correct amount of common general knowledge to impute to the person skilled in the art. Hence this is more likely to occur when considering novelty or inventive step, not excluded matter.

1.08 The effect of subsection 1(2) is to derogate from the normal, broad meaning of "invention" for the purposes of the Act by the removal of specified categories. In the main, the exclusions are directed to mental, intellectual, aesthetic or abstract matters, though "a program for a computer" does not entirely fit into these characterisations. In *Aerotel/Macrossan* Jacob LJ stated that "there was a positive intention and policy to exclude the categories concerned from being regarded as patentable inventions". In paragraph 12 of this judgment, the Court said that Article 52(2) of the EPC is not a list of exceptions, but rather a list of positive categories of things which are not to be regarded as inventions. Accordingly, the general UK and European principle of statutory interpretation that exceptions should be construed narrowly does not apply to them.

1.08.1 The phrase "among other things" indicates that the list of excluded matter is not exhaustive, but to date the Courts have only given one example of matter which may also be excluded - see *Lux Traffic Controls Ltd v Pike Signals Ltd and Faronwise Ltd*, [1993] RPC 107 where Aldous J, while allowing claims to apparatus for controlling traffic flows on the basis that the particular apparatus concerned involved a contribution in a technical (i.e non-excluded) field, observed that:

"..... s.1(2) of the Act comprises a non-exhaustive catalogue of matters or things which are not patentable. Although not specifically mentioned, I believe a method of controlling traffic as such is not patentable, whether or not it can be said to be a scheme for doing business. The field expressly excluded by the section concerns mere ideas not normally thought to be the proper subject for patents which are

concerned with manufacturing."

Thus the exclusion may also apply to other matters which are essentially abstract or intellectual but which do not fall clearly into one of the specified categories specifically listed. In this respect however, it should be noted that, other than by the list of exclusions set out in s.1(2), the Act does not define or specify what constitutes an "invention". In *Aerotel/Macrossan*, Jacob LJ stated that "The provisions about what are not to be "regarded as inventions" are not easy. Over the years there has been and continues to be much debate about them and about decisions on them given by national courts and the Boards of Appeal or the EPO... it is our job to interpret [the categories] as they stand". Moreover the varying of the specific terms of s.1(2) is the prerogative of the Secretary of State (see 1.38).

General approach for the assessment of patentability

1.09 The Court of Appeal in *Aerotel/Macrossan* considered all authorities in its judgment. However, it did not directly follow EPO practice, considering this not to have stabilised sufficiently. Following the principles discussed in, for example, *Colchester Estates (Cardiff) v Carlton Industries* [1986] 1 Ch 80, [1984] 2 All ER 601 and [1984] 3 WLR 693, *Aerotel/Macrossan* is to be treated as a definitive statement of how the law on patentable subject matter is to be applied in the UK. It should therefore rarely be necessary to refer back to previous UK or EPO case law. The four step approach therefore encompasses all previous tests. In *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1, the Court of Appeal confirmed that the *Aerotel/Macrossan* test is intended to be equivalent to the prior case law test of "technical contribution".

1.10 After consideration of the underlying principles of patentability exclusions (see 1.07), the emphasis placed on decisions of the EPO Boards of Appeal, and the precedent set in *Merrill Lynch's Appn* (1989) [1989] RPC 561, *Gale's Appn* [1991] RPC 91 and *Fujitsu Limited's Appn* [1997] RPC 608, Jacob LJ in *Aerotel/Macrossan* held that the requirements for patentability set out in section 1(1) should be considered using a "four step approach", set out in paragraph 40 as follows:

- (1) Properly construe the claim;
- (2) identify the actual contribution;
- (3) ask whether it falls solely within the excluded subject matter;
- (4) check whether the actual or alleged contribution is actually technical in nature.

The Court held that this "four step approach" was consistent with previous decisions, and was a re-formulation in a different order of the Fujitsu and Merrill Lynch tests.

1.10.1 The fourth step is intended to be a check, to be used only when an application has passed the three previous steps. This was exemplified by the Hearing Officer in *John Lahiri Khan's Application* (BL O/356/06), who said:

"A previous examiner, using the approach of earlier case law (see paragraph 47 of *Aerotel/Macrossan*) which gave primacy to the finding of a technical contribution, had been prepared to allow a claim to a package of the device together with a set of introduction cards (currently mentioned in present claim 3 as an optional feature of the invention) which could help to determine the compatibility of two people once they had been introduced. From this, Mr Khan argued that there had to be something tangible that was intrinsic to the operation of the method for there to be a technical effect, and that since the device (as I understand it, without the presence of the cards) did provide something tangible the invention was therefore patentable.

I do not think this argument is of any relevance. Even if Mr Khan was correct to equate technical effect with tangibility, paragraphs 46 - 47 of *Aerotel/Macrossan* make clear that the "technical" test may not be necessary because the third step

should already have covered the point. The presence or otherwise of a technical effect is therefore a subsidiary factor which will fall to be considered only where an invention passes the first three *Aerotel/Macrossan* steps. However, in my view the contribution made by the present invention does indeed fail the third step. I therefore agree with the examiner that it is not necessary for me to consider whether the contribution is of a technical nature.”

1.10.2 While as a matter of practice examiners will formulate objections using the *Aerotel/Macrossan* test, this should give the same result as applying the “technical contribution” approach. For example, Pumfrey J applied the fourth step to both applications in *Bloomberg LLP and Cappellini’s Applications* [2007] EWHC 476 (Pat), [2007] FSR 26, despite finding them in the third step to relate solely to a computer program and a business method respectively. In both cases, he confirmed that there was no technical effect.

1.10.3 [deleted]

Substance over form

1.11 If the substance of an invention falls within one of the excluded categories, then no form of claim will be possible to circumvent excluded matter objections. The reverse is, however, not the case. It may be that the substance of the invention disclosed in the specification relates to a patentable invention, but the claims in the form they are drafted must still satisfy the various requirements of the Act and Rules, and must be constructed using the principles of normal claim construction. If the contribution identified in step two of the “four step approach” of the invention as claimed lies solely in an excluded field, the claimed invention fails at step three of the “four step approach” and is not a patentable invention. In the judgment in *Aerotel/Macrossan*, Jacob LJ elaborated on step two, saying “What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form- which is surely what the legislator intended”. He went on to say “If an inventor claims a computer when programmed with his new program, it will not assist him if he alleges wrongly that he has invented the computer itself, even if he specifies all the detailed elements of a computer in his claim. In the end the test must be what contribution has actually been made, not what the inventor says he has made”. When assessing this contribution, examiners should not consider prior art falling in the section 2(3) field.

1.12 It is not the nature of an embodiment of an invention which is important when determining patentability, but the nature of the central idea or invention which is embodied. To determine this, the invention claimed should be assessed and construed as a whole to see whether it comprises an advance that lies in a non excluded field. In the case of a computer program this is necessary to prevent a patent being granted merely by claiming it stored on a carrier such as a compact disc (claims of this time are sometimes referred to in the US as Beauregard claims).

1.13 In *Macrossan’s Patent Application* [2006] EWHC 705 (Ch), Mann J (at paragraph 42) rejected submissions by the applicant that adding a product step onto an otherwise unpatentable claim was enough to render it patentable. This was upheld by the Court of Appeal, where application of the second step in the four step approach identified the inventor’s contribution as an interactive computer system involving no new hardware, and application of the third step put this invention solely into an excluded category. Similarly, in *Bloomberg LLP and Cappellini’s Applications* [2007] EWHC 476 (Pat), [2007] FSR 26, Pumfrey J stated that “a claim to a programmed computer as a matter of substance is just a claim to the program on a kind of carrier. A program on a kind of carrier, which, if run, performs a business method adds nothing to the art that does not lie in excluded subject matter”. In *Peter Williams’ Application* (BL O/038/07), although the claims related to a method of providing personalised transactional benefits over a network using a code symbol reader, the substance of the claims was determined to be the practice of shielding a consumer’s identity from a retail establishment. This was held to be no more than a business advantage, and as such the invention was excluded under S.1(2)(c).

Discoveries, scientific theories or mathematical methods

1.14 The fact that a known material or article is found to have a hitherto unknown property is a discovery and not an invention. But if the discovery leads to the conclusion that the material can be used for making a particular article or in a particular process, then the article or process could be patentable. For example finding out that a particular known material is able to withstand mechanical shock is a discovery and therefore unpatentable, but a claim to a railway sleeper made of the material would not fall foul of this exclusion, and would be allowable if it passed the tests for novelty and inventive step. On the other hand, a claimed invention which is in fact no more than the explanation of the underlying mechanism behind a known process will not be patentable (*Tate & Lyle Technology v Roquette Frères* [2010] FSR 1 – see 2.14.1).

1.15 This follows the reasoning of the Court of Appeal in *Genentech Inc's Patent* [1989] RPC 147 who held in a majority judgment that a patent which claimed the practical application of a discovery did not relate to the discovery as such and patentability was not excluded by s.1(2), even if the practical application might be obvious once the discovery had been made. The House of Lords in *Kirin-Amgen v Hoechst Marion Roussel* [2005] RPC 9 endorsed this statement, which the Court of Appeal had arrived at following the principle laid down in *Hickton's Patent Syndicate v Patents & Machine Improvements Co Ltd*, (1909) 26 RPC 339 in which Fletcher Moulton and Buckley L JJ rejected as fallacious the view that an idea may be new and original and very meritorious but, unless there is some invention necessary for putting the idea into practice, it is not patentable. Instead, Fletcher Moulton LJ said:

"In my opinion invention may lie in the idea and it may lie in the way in which it is carried out, and it may lie in the combination of the two; but if there is invention in the idea plus the way of carrying it out, then it is good subject matter for letters patent."

1.16 Similarly, the finding of a new substance or micro-organism occurring freely in nature is a discovery and not an invention e.g. in *Kirin-Amgen v Hoechst Marion Roussel* [2005] RPC 9, the House of Lords held that a DNA sequence of a gene was not the invention as standing alone, it was a "discovery, ... as such". But if (as will generally be the case) it were necessary to isolate and extract it then a process developed for this purpose, and also the material when obtained by this process, could both be patentable. Furthermore if the material had no previously recognised existence, and can be adequately identified without reference to the process by which it is obtained, then it may be patentable per se. In its decision in the case of *Genentech*, the Court of Appeal held that the discovery of the amino acid sequence for the substance tPA when incorporated into a process for the commercial manufacture of tPA using conventional techniques led to a valid claim. Likewise, in its decision in *Howard Florey Institute of Experimental Physiology* [1995] 6 OJEP 388 (V 08/94) the EPO Opposition Division ruled that because the protein human H2-relaxin had no previously recognised existence, and the proprietor had found a use for the protein, it meant that both the protein and the DNA encoding it were patentable (see also 76A.06).

1.17 These general principles have also been applied to scientific theories which are statements about the natural world, reasoned or otherwise, and to mathematical methods. Thus, scientific theories are themselves not patentable, no matter how radical or revolutionary the insights they provide may be, but if they lead to practical applications, these may well be patentable. Similarly, mathematical methods are not patentable but their application may well be patentable. For example, in *Vicom/Computer-related invention* [1987] 1 OJEP 14 (T208/84) the invention concerned a mathematical method for manipulating data representing an image, leading to an enhanced digital image. The EPO Technical Board of Appeal defined a mathematical method as one which is carried out on numbers and provides a result in numerical form (the mathematical method or algorithm therefore being merely an abstract concept prescribing how to operate on the numbers). Thus the Technical Board of Appeal rejected claims to a method of digitally filtering data

performed on a conventional general purpose computer, since those claims were held to define an abstract concept not distinguished from a mathematical method. However, they allowed claims to a method of image processing which used the mathematical method to operate on numbers representing an image. The reasoning was that the image processing performed was a technical (ie non-excluded) process which related to the technical quality of the image and that even if the idea underlying an invention may be considered to reside in a mathematical method, a claim directed to a technical process in which the method is used does not seek protection for the mathematical method as such. Therefore the allowable claims went beyond a mathematical method as such because they specified the physical entity the data represented and the technical process in which it was used.

1.17.1 Although cases based on a method of manipulating data, processes for storage or transmission of data (see *Heinz T107/87* unreported) and methods of manipulating signals have been found to be patentable, the presence of real data taken from a physical entity in a claim for a mathematical method will not necessarily imply that the invention will avoid exclusion where there is no actual manipulation of the physical entity. In *Institut Français du Pétrole & ELF EP's Application* (BL O/201/03), a mathematical method for building a statistical representation of the permeability of an underground oil-bearing zone by comparing predictive data from a stochastic model with real test data from the zone, and then displaying the representation as an image, was held by the hearing officer to be a mathematical method as such and was therefore excluded from patentability.

1.17.2 In *Waters Investments Limited's Application* (BL O/146/07), the Hearing Officer construed the claim in accordance with step one of the four-step approach as relating to a method of analyzing samples which were subject to chromatographic and spectrometric analysis techniques such that a multi-variant statistical analysis technique was employed to make it easier to identify time locations where the characteristics of samples were different. The contribution was identified as per step two of the four step approach as being "A method for comparing two samples by an analytical technique which uses chromatography and then spectrometry, followed by a particular sequence of data analysis techniques, to give results which enable the retention time at which the samples differ to be identified". Applying the third step of the four step approach, the Hearing Officer stated that while the claims included some steps that could be said to fall within one of the categories of excluded matter, the contribution as a whole did not. Applying the fourth step of the four step approach, the Hearing Officer stated that as the contribution lay in the technical field of sample analysis using chromatography and spectrometric techniques, the fourth step was passed.

Aesthetic creations

1.18 This exclusion applies not only to the subjective or mental aspect of aesthetic creation but also to its physical expression eg in words, painting, sculpture or recorded sound. It is necessary to disregard the form of presentation in a claim and concentrate upon its content in order to identify the novel contribution to the known art and to determine whether the essential character of this contribution is aesthetic or not. If an article is distinguished from known articles solely by its design, ornamentation or colour, then it will not be patentable if this has a purely aesthetic function, but if the distinction has a practical effect then this could save it from the exclusion. For example, if a serving tray were characterised solely by the provision of a particular embossed pattern on its surface, then it would fall within the exclusion, but if it were found that this particular pattern had non-slip attributes unexpectedly superior to those normally associated with embossment, this latter characteristic could provide a patentable feature.

1.19 Evidence may be necessary where the advantage conferred by the apparently aesthetic distinction is not apparent in the disclosure. In *I T S Rubber Ltd's Application*, [1979] RPC 318, a claim to a squash ball characterised by its blue colour was allowed (under the 1949 Act) because evidence showed that it had surprisingly enhanced visibility during play.

1.20 The means of obtaining a purely aesthetic effect may be patentable if it is characterised by non-excluded features, such as the structure of an article or the steps in a

process. For example, a fabric may be provided with an attractive appearance by means of a layered structure not previously used for this purpose, in which case a fabric incorporating such structure might be patentable.

Schemes, rules or methods for performing a mental act, playing a game or doing business

Mental acts

1.21 Section 1(2)(c) excludes a scheme, rule or method only when it is for performing a mental act, playing a game or doing business. Therefore, things such as a method of learning a language, of playing chess or teaching reading would be excluded as methods for performing a mental act. Design methods also fall within this exclusion; for example, in *Halliburton Energy Services Inc v Smith International (North Sea) Ltd* [2006] RPC 2 the Patents Court held that a method for creating a design of rock drilling bit to amount to a mental act. Moreover, objection will not necessarily be avoided if the invention is claimed as an apparatus; if in substance what is claimed amounts to no more than an excluded method, it could be excluded as such. In addition, it is also clear that when considering whether an invention is a method for performing a mental act, it is not relevant whether the act in question is to be performed mentally or in some other way, for example by a computer programmed to follow steps which the human brain would not ordinarily follow. The fact that a method is formulated, and claimed, as a series of steps suitable for use by a computer or some other piece of equipment and not by the human brain is therefore not of itself sufficient to avoid objection.

1.21.1 In *Aerotel/Macrossan*, the Court of Appeal said it was doubtful as to whether interpretation of the reference in Art 52(2) to a scheme, rule of method for performing a mental act extended to electronic means of doing what could otherwise have been done mentally, but in the earlier case of *Fujitsu Ltd's Application* [1997] RPC 608 the Court expressed a different view. In *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1 ("*Symbian*") the Court of Appeal indicated that one effect of the computer program exclusion is to prevent other excluded material becoming patentable merely by use of a computer in its implementation. Thus a mental act implemented on a conventional computer system or network would be excluded as both a mental act and a computer program as such. However, these comments were all obiter so the correct interpretation will remain uncertain until the point is decided by the courts. In the meantime, the view expressed in *Symbian* should be favoured on the grounds that it is probably a better reflection of current judicial thinking.

Playing a game

1.22 The patentability of games was considered by the Patents Court in *Shopalotto.com Ltd's Application* [2006] RPC 7, which related to a computer lottery game played over the internet. This judgment dismissed the long established practice of following Official Ruling 1926(A)(1926) 43 RPC Appendix page i to determine patentability of games. Instead, the patentability of games should be assessed following the general approach to examining for patentability (see 1.09). For further details see [Practice Notice "Patents Act 1977: Patentability of games"](#), reported as [2006] RPC 8 and amended as a result of the judgment in *Aerotel/Macrossan*. *IGT's Applications* [2007] EWHC 1341 (Ch) concerned four applications relating to gaming apparatus of the sort where success in a main game leads to the chance to play a bonus game. In each case, Warren J held that the claims once construed related to known apparatus upon which a game was played. The contribution in each case therefore lay in the rules or methods used to play the game, and fell solely within the excluded category of "schemes, rules or methods of... playing a game...".

1.22.1 In *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1 the Court of Appeal indicated that one effect of the computer program exclusion is to prevent other excluded material becoming patentable merely by use of a computer in its implementation. Thus a game implemented on a conventional computer system or network would be excluded as both a scheme, rule, or method for playing a game and a computer

program as such. However, these comments were all obiter so the correct interpretation will remain uncertain until the point is decided by the courts.

Methods of doing business

1.23 The decision of Mann J in *Macrossan's Patent Application* [2006] EWHC 705 was overturned by the Court of Appeal in *Aerotel/Macrossan*. Mann J had held that a method of doing business should be a way of conducting an entire business, rather than a tool to facilitate business transactions or procedural steps having administrative or financial character. The Court of Appeal rejected this reasoning and instead took a wider view of what constitutes a business method. It took the view that there was no reason to limit the exclusion to abstract matters or completed transactions, and confirmed this thinking by looking at the French and German translations of EPC Article 52(2), which are not limited to methods of conducting entire businesses. The French translation refers to "economic activities" while the German translation refers to "business activities". Double entry bookkeeping was cited by the Court of Appeal as an example of a good idea that does not involve conducting an entire business or a completed transaction but nevertheless is clearly a method of doing business.

1.24 *Aerotel/Macrossan* considered two inventions. Aerotel's patent related to a telephone call handling system that used known types of apparatus to create a new system. In *Aerotel Ltd v Telco Holdings Ltd* [2006] EWHC 997 Lewison J held that as the system used known apparatus the invention must lie in the method of its use, and this must be a business method. The Court of Appeal in *Aerotel/Macrossan*, however, held that although the components were known, the system as a whole was new. Therefore the contribution assessed in the second step of the "four step approach" was a new system, and therefore did not fall solely within an excluded category. Macrossan's application related to an automated method of acquiring the documents necessary to incorporate a company. In *Macrossan's Patent Application* [2006] EWHC 705 Mann J held that although the method could be used in business situations it was not a method of actually carrying out business. The Court of Appeal came to a different conclusion, namely that the contribution was the interactive system, and this was used in the process of doing business rendering it a method of doing business. The Court said that "whether as an abstract or generalised activity of as a very specific activity, if it is a method of doing business as such it is excluded".

1.25 Schemes or methods of bookkeeping or carrying out other commercial procedures are excluded as being "for doing business". A scheme for codemarking bank cheques or deposit slips, the marked code then being entered into the computer record of a customer's account and processed to provide a statement of account sub-totalled under separate categories, was refused in *Good News Pty Ltd's Application* (BL O/124/84) as being a scheme or method for doing business because the automatic reading of the codemarks was technically conventional so the contribution was solely in the field of accounting. In *Peter Williams' Application* (BL O/038/07), the practice of shielding a consumer's identity from a retail establishment was held to be a method of doing business. Although step four of the "four step approach" was not considered necessary, the Hearing Office commented that "there was no technical reason for shielding" the consumer's identity. It was purely a business advantage.

1.26 The expression "doing business" is not restricted to the activities of financial institutions or service industries but embraces the purely organisational and managerial activities of manufacturing industry. In *Melia's Application* (BL O/153/92) the Hearing Officer refused a scheme under which prisoners could exchange all or part of a prison sentence for corporal punishment as a scheme, rule or method for doing business, the business in question being the business of administering punishment (the invention was also held to lack industrial application). Also rejected in Office proceedings was an application relating to a system for administering salary linked mortgages. Applications were rejected on these grounds in *Wills' Application* (BL O/89/99) relating to the provision of cards to be held by the parents or grand- parents and school so as to provide an immediate source of accurate, up-to-date information in the event that a child goes missing and in *Spedding's Application* (BL O/96/99) relating to a method of tax collection involving a delayed

inheritance system. In *John Lahiri Khan's Appn* (BL O/356/06) a method of effecting introductions between people wearing a designated device, such as a ring, was found to be a method of doing business. This was despite the applicant's claims that the devices could be used by private individuals without the need for commercial interests. The Hearing Officer referred to *Aerotel/Macrossan* as follows:

"In the light of *Aerotel/Macrossan* the business method test has to be approached by looking at the contribution made by the invention and whether that contribution is, as a matter of substance, a method for doing business. In *Aerotel/Macrossan*, the patent application was for an automated interactive method of acquiring the documents necessary to incorporate a company. The method did the job which otherwise would have been done by a solicitor or company formation agent (see paragraph 63 of the Court of Appeal's judgment). In reaching its judgment the court specifically rejected the judgment of the Patents Court that the method had to relate to the underlying abstraction of business method and had to involve a completed transaction before the exclusion could apply. It held at paragraph 71 that the method was for something more than a tool for use in business and was "for the very business itself, the business of advising on and creating appropriate company formation documents."

The Hearing Officer considered that this reasoning was relevant and found the application to fail the third step of the "four step approach" as the contribution identified in the second step fell solely within the excluded category of business methods. The contribution was found to be the use of a device for effecting introductions in a way which need not be limited to predetermined encounters but also allows introductions to be effected following random encounters.

1.27 Many cases where business arrangements are implemented over the internet have been refused by the comptroller. For example, the following applications were refused: a method for offering personalised financial products (credit cards or mortgages) over the internet (*Accucard's Application* (BL O/145/03)), a method of creating and distributing advertising material (*Adgistics Ltd's Application* (BL O/297/04)), a system to allow a client to monitor progress made on a building site via the internet (*Ashizawa's Application* (BL O/201/03)), and a system for ordering food over the internet (*Fujitsu's Application* (BL O/121/04)). It should be remembered, however, that each case must be considered on its own merits. Previously examined cases may be of assistance, but each patent application must be measured against the requirements of the law on the basis of its own facts (see also 18.09.1).

1.27.1 In *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1 the Court of Appeal indicated that one effect of the computer program exclusion is to prevent other excluded material becoming patentable merely by use of a computer in its implementation. Thus a business method implemented on a conventional computer system or network would be excluded as both a method of doing business and a computer program as such. However, these comments were all obiter so the correct interpretation will remain uncertain until the point is decided by the courts.

Computer Programs

1.28 In a case where claims to a method performed by running a suitably programmed computer or to a computer programmed to carry out the method are allowable then, in principle, a claim to the program itself should also be allowable. However, the program claim must be drawn to reflect the features of the invention which would ensure the patentability of the method which the program is intended to carry out when it is run. So Kitchin J. held in his judgment in *Astron Clinica and other's Applications* [2008] EWHC 85 (Pat). In arriving at this conclusion he said in paragraph 49 of the judgment:

"Thus, in the case of a computer related invention which produces a substantive technical contribution, the application of step ii) [of the "four step approach" of *Aerotel/Macrossan*] will identify that contribution and the application of step iii) will

lead to the answer that it does not fall wholly within excluded matter. Any computer related invention which passes step iii) but does not involve a substantive technical contribution will fail step iv). The answer to these questions will be the same irrespective of whether the invention is claimed in the form of a programmed computer, a method involving the use of that programmed computer or the program itself. *Aerotel/Macrossan* requires the analysis to be carried out as a matter of substance not form, just as did *Genentech*, *Merrill Lynch*, *Gale* and *Fujitsu*. True it is that the first step requires the scope of the monopoly to be determined and, in the case of a program, that will necessarily be limited. However the contribution of that monopoly must still be assessed by reference to the process it will cause a computer to perform."

1.29 As a general rule, any invention which may be considered as computerising a system or process that might conventionally be performed manually is likely to be regarded as involving only an advance in an excluded field.

1.29.1 In *Aerotel/Macrossan*, *Macrossan's* application was found to fall within the computer program exclusion. The second step of the "four step approach" identified the contribution as being the provision of a computer program, probably in the form of an interactive website, which can be used to carry out the method of the invention. There was no contribution from hardware, with standard components being used. As the contribution lay solely in the provision of the computer program, the third step determined that the contribution fell within the computer programs exclusion. The fourth step was applied as a check, and found that the contribution was not technical.

1.29.2 In *Rockwell FirstPoint Contact's Appn* (BL O/355/06), the contribution identified under step 2 of the "four step approach" lay in the features of a simulator wrapper that processed characteristics of an analysed signal. This contribution was wholly implemented by a computer and thus failed the third step. *Next Page Inc's Application* (BL O/030/07), *Kabushiki Kaisha Toshiba's Application* (BL O/031/07) and *Fisher-Rosemount Systems' Application* (BL O/026/07) each involved an automated process that the applicants argued went above and beyond a mere computer program. However, in each case the Hearing Officers held that the invention lay solely in the excluded category of computer programs, and the applications were refused.

1.29.3 In *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1 ("*Symbian*"), the Court of Appeal held that the contribution made by the invention was not a computer program "as such" because "it has the knock-on effect of the computer working better as a matter of practical reality". This judgment (especially paragraphs 54-56) provides an insight into what can be considered to constitute a "technical contribution" (a test which dates back to the EPO Board of Appeal decision in *Vicom/Computer-related invention* [1987] 1 OJEP 14 (T208/84)); in other words a contribution which is more than solely a computer program. An important factor is what the program does as a matter of practical reality. An invention which either solves a technical problem external to the computer or solves a technical problem within the computer does not fall under the computer program exclusion. *Symbian* shows that improving the operation of a computer by solving a problem arising from the way the computer was programmed (in that case a tendency to crash due to conflicting library program calls) can be regarded as solving a technical problem within the computer if it leads to a more reliable computer. Thus, a program that results in a computer running faster or more reliably may be considered to provide a technical contribution even if the invention solely addresses a problem in the programming. The Court of Appeal considered that such a technical contribution rendered the claim patentable.

1.29.4 It remains the case that whilst an invention involving a computer is undoubtedly "technical", in law the mere presence of conventional computing hardware does not of itself mean an invention makes a technical contribution and so avoids the computer program exclusion. This is in contrast to the practice of the European Patent Office, which the Court of Appeal rejected in *Symbian*.

1.29.5 Further guidance as to what constitutes a “technical contribution” can be found in the decision of Lewison J in *AT&T Knowledge Ventures’ Application and CVON Innovations Ltd’s Application* [2009] FSR 19 . In his decision the Judge considered the previous case law on the subject of computer programs and set out five signposts that he considered indicated that a program made a relevant technical contribution that would overcome an excluded matter objection. The five signposts are:-

- i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;
- ii) whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;
- iii) whether the claimed technical effect results in the computer being made to operate in a new way;
- iv) whether there is an increase in the speed or reliability of the computer;
- v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

1.29.6 The President of the EPO referred four questions on the patentability of computer programs to the Enlarged Board of Appeal in October 2008 (G3/08). The Enlarged Board subsequently found the referral to be inadmissible and as a consequence declined to answer the questions. The comments of the Board are thus concerned only with their findings on the admissibility of the referral and cannot be read any wider. The Board in refusing the referral decided that the decisions of the Technical Boards were “a legitimate development of the law” in this area. They also noted that they saw a convergence of practice across a number of jurisdictions, including the UK, but accepted that this had not yet reached an authoritative conclusion or statement of fact as to what was and was not patentable in the area of computer programs.

1.29.7 In *Merrell Dow Pharmaceuticals v N H Norton* [1996] RPC 76 and more recently in *Actavis UK Ltd v Merck & Co Inc.* [2008] RPC 26 the courts set out a presumption that where the case-law of the EPO Boards of Appeal is settled then the UK courts should follow unless (in the words of Jacob LJ in *Actavis*) “we are convinced that the commodore is steering the convoy towards the rocks [in which case] we can steer our ship away”. In the absence of such settled EPO practice or case-law, and bearing in mind the views of the Court of Appeal expressed in both *Symbian* and *Aerotel*, the Office is not bound to follow the EPO practice. In any event, the Office remains bound by the precedents set by the UK Courts. Consequently, the assessment of whether an invention is no more than a computer program as such is set out in the Court of Appeal’s decisions in *Aerotel* and *Symbian*. This approach is illustrated by the decision of the hearing officer in *Dell Products LP’s Application* BL 0/321/10.

The presentation of information

1.30 Any manner, means or method of expressing information which is characterised solely by the content of the information is clearly excluded, no matter whether this be visual, audible or tangible and by words, codes, signals, symbols, diagrams or any other mode of representation. The mere fact that physical apparatus may be involved in the presentation will not suffice to avoid the exclusion. In *Townsend’s Application* (BL O/266/03), an application for an invention relating to an advent calendar with an additional indicium (such as a word, picture, colour etc.) on each door was refused by the Hearing Officer as relating to the presentation of information which served no technical purpose and included no technical advance. This decision was upheld on appeal to the Patents Court [2004] EWHC 482 (Pat). Laddie J held that the term “presentation of information” encompasses the provision of information, rejecting arguments that presentation only included the expression of information (i.e. how the information is provided). A claim to a tape cassette of conventional construction but with differentially coloured poles has been held to be excluded on this ground because it encompassed such a cassette where the

poles were differentially coloured subsequent to assembly and thus did not serve any function in its assembly or use (*TDK Electronics Co Ltd's Application*, BL O/97/83). A gaming machine in which logos or brand or product names were substituted for the conventional symbols normally depicted on the reels of a fruit machine was also found to fall squarely within the exclusion of s.1(2)(d) (*Ebrahim Shahin's Application* BL O/149/95). In *Autonomy Corp Ltd v Comptroller General of Patents, Trade Marks & Designs* [2008] EWHC 146 (Pat), it was held that choosing where and how to display information is still the presentation of information, as it is part of the decision as to how to present the information.

1.31 However, the exclusion will not take effect if the invention makes an advance in a non excluded field. Examples decided under previous legislation and which would apparently not be excluded under s.1(2)(d) are *Cooper's Application*, 19 RPC 53, which related to a newspaper layout designed so that folding the paper did not hinder reading, *Fishburn's Application*, 57 RPC 245 in which an arrangement of printing upon a ticket served a mechanical purpose in that information was not lost when the ticket was torn, and *American Optical Co's Application*, [1958] RPC 40 in which the image produced upon a photographic film was deliberately distorted in a predetermined manner in order to obtain a desired effect when subsequently projected and viewed by means of appropriately modified equipment; in all these cases the invention could be defined in terms of technical features independently of the nature of the information. However, in *Dixon's Application* [1978] RPC 687, speech instruction means intended to improve speech by conditioning the diaphragm of the speaker and comprising a word drill to be recited by him, the word drill being included in a printed text where horizontal underlining indicated stress and vertical separating lines divided the words into rhythmic groups, were held by the PAT to be not patentable.

1.31.1 When considering whether claims to signals, encryption or data compression are excluded, the usual *Aerotel/Macrossan* test and considerations set out in *Symbian* apply. In *BBC/Colour Television Signal* [1990] EPOR 599 (T163/85), the EPO Technical Board of Appeal held that a colour television signal defined in terms of the technical features of the television system in which the signal occurs was not excluded as the presentation of information under EPC Article 52(2)(d). However, the Board distinguished this from a television system defined solely by the information per se (e.g. moving pictures) modulated upon a standard television signal and held that this latter system may fall under the exclusion of Article 52(2)(d) and (3) EPC.

1.32 A claim to a conventional package containing a known product and characterised solely by the instructions on the package will not generally be allowed, since the contribution to the art resides solely in the presentation of information. Several such cases were rejected under the 1949 Act as not being manners of new manufacture, (see *Dow Corning Corporation (Bennett's) Application*, [1974] RPC 235, and *Ciba-Geigy AG (Durr's) Application*, [1977] RPC 83).

1.32.1 In *John Lahiri Khan's Application* (BL O/356/06), the Hearing Officer considered whether the method of providing symbols to participants in a scheme to meet other people constituted the presentation of information. Mr Khan argued that the fact that the symbols had to be carried rendered them more than merely the presentation of information, but the Hearing Officer held that "the supposedly physical feature of transport" could not circumvent the objection. This was because "all information (even that contained on a sheet of paper) has to be transported to the point where an intended user can access it". Therefore, the invention was excluded, and this would be the case even if the invention lay in the device rather than the method of using it.

1.32.2 In *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1 the Court of Appeal indicated that one effect of the computer program exclusion is to prevent other excluded material becoming patentable merely by use of a computer in its implementation. Thus an application relating to the presentation of information implemented on a conventional computer system or network would be excluded under both the presentation of information exclusion and as a computer program as such. However, these comments were all obiter so the correct interpretation will remain uncertain until the point is

decided by the courts.

1.32.3 More recent guidance on what is considered to be presentation of information can be found in *Gemstar–TV Guide International Inc v Virgin Media Limited* [2009] EWHC 3068 (Ch), [2010] RPC 10. The court considered the validity of three European patents (UK) concerning Electronic Program Guides. Mann J made it clear that the rearrangement of information is nothing more than a presentation of information. To be patentable there must be some technical effect beyond the information being presented. The court also made it clear that if the contribution is defined only in terms of the information to be presented then that is a presentation of information. The presence of a display does not change this. In particular, it was made clear that providing a better (or new) user interface is not a relevant technical effect – a different display is not enough.

Section 1(3)

A patent shall not be granted for an invention the commercial exploitation of which would be contrary to public policy or morality.

Section 1(4)

For the purposes of subsection (3) above exploitation shall not be regarded as contrary to public policy or morality only because it is prohibited by any law in force in the United Kingdom or any part of it.

Exploitation contrary to public policy or morality

1.33 Sections 1(3) and 1(4) were amended by the Patents Regulations 2000 (SI 2000 No.2037) so that the wording would more closely reflect the wording of article 27(2) of the TRIPS agreement. Section 1(3)(a) had previously stated that a patent would not be granted for an invention whose “publication or exploitation” would “be generally expected to encourage offensive, immoral or antisocial behaviour”. In practical terms, the effect of s.1(3) remains the same, which is to prevent the grant of patent rights for inventions which the general public would regard as abhorrent or from which the public need protection. It provides a reasonably objective test which has to be applied to each invention and its particular set of facts and circumstances. Clearly what is to be regarded as contrary to public policy or morality will vary according to changes in social attitudes and on no account ought examiners to allow their own personal and individual beliefs to colour their judgment on this matter. The decision of Aldous J in the case of *Masterman's Design* [1991] RPC 89 under a similar provision of the Registered Designs Act 1949 deals with issues broadly corresponding with those which may arise under s.1(3). The Patents Act 1977 (Isle of Man) Order 2003 (SI 2003 No. 1249) amended sections 1(3) and 1(4) for the Isle of Man.

[Only in the clearest cases should examiners invoke this subsection and then only following consultation with their Deputy Director. Any genuine doubt should be exercised in favour of the applicant with an appropriate minute being created.]

1.34 Unlike under the previous s.1(3)(a), the exclusion from patentability is not activated if mere publication of the invention, as distinct from its exploitation, would be contrary to morality. If, however, the specification includes matter the publication or exploitation of which would generally be expected to encourage offensive, immoral or antisocial behaviour, then (irrespective of whether the invention itself is open to objection under s.1(3)) the situation can be dealt with by excision of the offending matter under s.16(2) - see 16.34-16.37.

a.53(a)
EPC

1.35 The corresponding provision of the EPC (see 1.06) refers to “inventions the publication or exploitation of which would be contrary to ‘ordre public’ or morality”. In the *Harvard “oncomouse” case* T 315/03 ([2006] 1 OJEP 15, [2005] EPOR 31) (see also 76A.02.1 and 76A.05), the Board of Appeal endorsed the definitions of “ordre public” and morality provided in *Plant Genetic Systems* T 356/93 [1995] 8 OJEP 393 and held that the assessment of these concepts should be made as of the filing or priority date of the

application. The concept of “ordre public” was accepted as covering the protection of public security and the physical integrity of individuals as part of society, and encompassed the protection of the environment. In relation to morality, the Board in T 356/93 held that the culture inherent in European society and civilisation should be the basis for determining what behaviour is right and acceptable, and what behaviour is wrong. However, the Board in oncomouse added that in making an assessment of morality, no single definition of morality based on e.g. economic or religious principles represents an accepted standard in European culture, and opinion poll evidence was of little value. For animal manipulation cases, the Board of Appeal in T 315/03 endorsed the guidance provided in its earlier consideration of the Harvard “oncomouse” application (case T 19/90 [1990] 12 OJEP 476). This case held that the possible detrimental effects and risks had to be weighed and balanced against the merits and advantages aimed at. In particular, the basic interest of mankind to remedy disease had to be set against the protection of the environment of uncontrolled dissemination of unwanted genes and the avoidance of suffering to animals, including the possibility of using non-animal alternatives. In balancing these factors, the Board in T 315/03 allowed claims covering transgenic “mice”, refusing broader claims encompassing rodents (see 76A.02.1).

1.35.1 For biotechnology inventions, in addition to the general exclusion of s.1(3), Schedule A2 of the Patents Act specifies that certain categories of invention are not patentable inventions; these are discussed in 76A.02-76A.06 and the [Examination Guidelines for Patent Applications relating to Biotechnological Inventions in the Intellectual Property Office](#).

1.36 Section 1(4) is a rider to section 1(3) to make it clear that an act or action prohibited by a law is not to be considered as necessarily the same thing as contrary to public policy or morality. (One reason for this is that a product which could not lawfully be used in the UK may be manufactured lawfully in the UK for export to countries where its use is not illegal). However the existence of a law or regulation may be a material fact to be taken into consideration in determining whether to refuse an application under s.1(3). The nature and probable uses of the invention will need to be considered as well as the exact terms of the prohibition. Thus if the prohibition is directed unconditionally to the very act which the inventor proposes very careful deliberation must be given as to whether to invoke s.1(3). In such cases a useful test is to consider why the prohibition exists. For example it is considered that the Landmines Act 1998 (implementing the Ottawa Convention) and the Cluster Munitions (Prohibitions) Act 2010 (implementing the Convention on Cluster Munitions) were passed because the public in the UK generally now consider the development, manufacture and use of anti-personnel mines and cluster munitions to be immoral. In addition, UK is a signatory to other weapons conventions which prohibit categories of weapon, including the Chemical Weapons Convention and the Biological and Toxin Weapons Conventions; these have been implemented in UK law by the Chemical Weapons Act 1996 and the Biological Weapons Act 1974 respectively. Again, the signing of the conventions and the passage of the legislation indicate that the general feeling of the public in the UK is that the production and use of these weapons is immoral. However, it should be noted that both these Acts recognise that agents capable of use as a chemical or biological weapon may have legitimate purposes. In cases in which an invention can be exploited legally albeit in accordance with stringent regulations, it would be very difficult to argue that s.1(3) applies and the application for a patent refused.

[Any concerns about patent applications which may relate to weapons which are considered contrary to public policy or morality should be raised with Security Section]

Plant and animal varieties, and “essentially biological processes”

1.37 Prior to the Patents Regulations 2000, s.1(3)(b) set out that a patent would not be granted for “any variety of animal or plant or any essentially biological process for the production of animals or plants, not being a micro-biological process or the product of

such a process". These exclusions remain in place, and are now found, along with others which relate to biotechnological inventions, in Schedule A2 to the Act, introduced by the Patents Regulations 2000 and made under section 76A of the Act, which was also introduced by those Regulations (see 76A.01-06 and the [Examination Guidelines for Patent Applications relating to Biotechnological Inventions in the Intellectual Property Office](#)).

Section 1(5)

The Secretary of State may by order vary the provisions of subsection (2) above for the purpose of maintaining them in conformity with developments in science and technology; and no such order shall be made unless a draft of the order has been laid before, and approved by resolution of, each House of Parliament.

1.38 The white paper "Patent Law Reform" (Cmnd 6000) noted that the patent system "must evolve in response to changing conditions". This was done under previous legislation by continually re-interpreting the centuries-old definition of invention as "any manner of new manufacture". The present Act controls what is to be regarded as an invention for which a patent monopoly may be granted by means of the definitions set out in the foregoing subsections. The present subsection gives the necessary measure of flexibility to this control, whilst reserving to Parliament the authority to approve it. This would be at the instigation of the Secretary of State, who would normally take such action following the established consultative processes.