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## Patents: Proposed Guidelines to Examination of Programs

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PATENTS: PROPOSED GUIDELINES TO EXAMINATION OF  
PROGRAMS

In the past, needless confusion has existed in the preparation and examination of patent applications involving computer programs.<sup>1</sup> In an attempt to correct this, the Patent Office recently proposed a set of Guidelines to Examination of Programs.<sup>2</sup> The Guidelines, if adopted, would provide a standard method by which applications involving computer programs can be evaluated to determine whether the invention is patentable. The Guidelines would create the first procedural rules in this specialized area, and their adoption is of utmost importance to everyone concerned with inventions involving computer programs. Patent applications concerning computer programs encompass virtually every field of endeavor, and are constantly increasing in number. Therefore, to assure accurate and correct evaluation, it is important that examiners who do not primarily handle computer program applications have a positive guideline by which such patent applications can be evaluated. Also, to assure correct preparation of the patent application, it is important for the patent attorney to have a definite rule on which he can rely to best protect his client's interest.

Actually, the guidelines do not create new rules of law; they do, however, represent a correct method of analysis by which the established rules applicable to method and apparatus inventions are applied to the new and specialized field of inventions which include computer programs.

To better understand the significance of the guidelines, one must understand the meaning of the word "program" as used in the Guidelines. In general, a program is a sequence of operations which, when followed, produce a desired result.<sup>3</sup> Essentially, a program may be defined and analyzed the same as a method, which may be described in terms of the steps actually followed.

<sup>1</sup> Richards, *Recent Developments in Patent Law*, in PATENT PROCURE-  
MENT AND EXPLOITATION 97 (1963), at 116.

<sup>2</sup> 829 O. G. 1 (1966).

<sup>3</sup> See *Cochrane v. Deener*, 94 U.S. 780 (1876); *Kelly v. Coe*, 99 F.2d 435 (D.C. Cir. 1938).

Alternatively, a method may be described in terms of an apparatus by using "means" steps without describing the actual structure to accomplish the result.<sup>4</sup> Both methods and apparatus are patentable if they fall within the requirements of 35 U.S.C. 101 which provides that an invention must be a "... new and useful process, machine, manufacture, or any new composition of matter, or any new and useful improvement thereof . . ." For example, in *Hotel Security Co. v. Lorraine Co.*,<sup>5</sup> a method of doing business in which a bookkeeping method was described whereby the efficiency of the waiters in a hotel restaurant was increased. This, in essence, is a program, a sequence of operations which, if followed, will produce a successful business. An invention also must be an unanticipated and unobvious advance over the prior art;<sup>6</sup> however, it may not be patented if it merely describes the function of a machine.<sup>7</sup>

The term "program" can connote either a tangible or intangible embodiment. For example, a tangible embodiment of a program can be used to effect a desired result in a device which is responsive to the program.<sup>8</sup> A familiar example of such device is the player piano which plays musical arrangements in response to a program punched on a roll of paper which passes by a detector.

An intangible embodiment of a program, for instance, may refer to an intellectual concept such as a series of mathematical operations by which a particular mathematical problem is solved. Such a concept is called an algorithm and is exemplified by the mathematical operations involved in finding the roots of the

<sup>4</sup> 35 U.S.C.A. § 112 (1954).

<sup>5</sup> *Hotel Security Co. v. Lorraine Co.*, 160 F. 467 (2nd Cir. 1908).

<sup>6</sup> *Dorr Co. v. Yabuccoa Sugar Co.*, 119 F.2d 521 (1st Cir. 1941); *In re Herthel*, 104 F.2d 824 (1939); *Novocol Chemical Mfg. Co. v. Powers and Anderson Dental Co.*, 37 F.Supp. 594 (D.C.N.Y. 1941).

<sup>7</sup> *Halliburton v. Walker*, 329 U.S. 1 (1946); *General Electric Co. v. Appliance Co.*, 304 U.S. 364 (1937); *Holland Furniture Co. v. Perkins Glue Co.*, 277 U.S. 245 (1927); *Carburetor Co. v. Chrysler Corp.*, 130 F.2d 391 (6th Cir. 1942).

<sup>8</sup> For discussion of various embodiments of programs in the computer sense see *Seminar A: Patent Procurement Session One*, in 1966 PATENT LAW ANNUAL 185 (1966), at 187.

biomial equation  $ax^2+bx+c$ . Regardless of the labels, an algorithm is only a method of obtaining an answer, and a program is only a method of getting the job done. Both are treated in the same manner in accordance with 35 U.S.C. 101 to determine whether they are patentable.

There are several special classes of non-patentable material which should be considered: ideas<sup>9</sup> and mental processes;<sup>10</sup> processes naturally occurring in nature,<sup>11</sup> such as the electrical process involved in lightning; and mathematical formulae<sup>12</sup> all of which are non-patentable concepts. Computer programs are protectable in a limited sense by copyright, but that method is generally ineffective and difficult to protect from infringement.<sup>14</sup>

Although the non-patentability of programs seems well settled, a problem arises if an element of an invention is a general purpose computer with an associated program. This problem is especially acute if the computer program is in terms of algorithms, mental processes, mathematical formulae, or the related mental steps. For example, a general purpose computer with a certain program may calculate the position of an airplane in accordance with signals from a position detecting device. The computer would then direct the airplane to change course to a pre-determined direction. The program itself would be made-up almost entirely of mathematical or algorithm steps. The mere inclusion of a program and computer to perform an otherwise mental step should not render the entire invention non-patentable.<sup>15</sup>

<sup>9</sup> *Fowler v. N.Y.*, 121 F. 747 (2d Cir. 1903).

<sup>10</sup> Application of Shao Wen Yuan, 38 C.C.P.A. (Patents) 967, 188 F.2d 377 (1951); *In re Heritage*, 32 C.C.P.A. (Patents) 1170, 150 F.2d 554 (1945).

<sup>11</sup> Telephone Cases, 126 U.S. 1 (1887); *O'Reilly v. Morse* 56 U.S. (15 How.) 62 (1853).

<sup>12</sup> Application of Shao Wen Yuan, *supra* note 10.

<sup>13</sup> Jacobs, *Patent Protection of Computer Programs*, 14 J. PAT. OFF. SOC'Y 6 (1965); Rackman, *The Patentability of Computer Programs*, 38 N.Y.L. REV. 891 (1963); *Seminar A: Patent Procurement Session Two*, in 1966 PATENT LAW ANNUAL 201 (1966).

<sup>14</sup> *Seminar A: Patent Procurement Session Two*, *Supra* note 13.

<sup>15</sup> *Richards*, *supra* note 1 at 117; *cf. Ex parte Egan*, 129 U.S.P.Q. 23 (Bd. App. 1960).

Because of these conflicting results, it has been the practice of the Patent Office to allow claims in which mental steps are described in terms of an apparatus to accomplish the mental steps<sup>16</sup> but not to allow claims in which no apparatus is specified.<sup>17</sup> Therefore, a patent is granted or not depending on how the invention is disclosed and described.

In *In re Abrams*,<sup>18</sup> the rule was advanced that a method claim having steps purely mental in character is non-patentable. A method claim having some mental and some physical steps with the advance over the prior art in the physical steps is patentable. However, a method claim with some mental and some physical steps with the advance in the mental steps is non-patentable. This rule is essentially adopted by the Guidelines with the program considered as a mental step.

The Guidelines first point out the non-patentability of the mathematical, electrical, and mental processes. They then distinguish between the non-patentable algorithm process which encompasses mental and mathematical processes, and the patentable utility process<sup>19</sup> which encompasses tangible things and substances. Because of the difficulty in distinguishing between algorithm and utility processes, the Guidelines raise the distinction between the result of a method operation and the function of a method operation. For instance, in the above example of an invention to control the course of an airplane, the evaluation of the data from the position detecting device would be an algorithm process since all that is done is obtaining a result from mathematical transformation of data. This process would be non-patentable. However, when the computer changes the course of the airplane, the computer changes the state in some mechanical device and thus is functioning purely of its own components. This is a patentable process.

In essence, this reiterates the *Abrams* test: If a method has both utility and algorithm steps it is patentable if the advance

<sup>16</sup> See *Ex parte White*, 131 U.S.P.Q. 233 (Bd. App. 1960).

<sup>17</sup> Cf. *Ex parte Mills and Zemanek*, 131 U.S.P.Q. 331 (Bd. App. 1961).

<sup>18</sup> *In re Abrams*, 188 F.2d 165 (1951).

<sup>19</sup> For discussion of utility requirement see note, 53 GEO. L.J. 154 (1964).

over the prior art is in the utility steps, and is non-patentable if the advance is in the algorithm steps.

Applications involving "means" or apparatus claims are analyzed in much the same way: If only an algorithm process is claimed by "means" for carrying out the operation, the invention cannot be patented. Also treated is the procedure for handling the examination of a patent application which involves a program device. As before, the device is patentable if it functions to give a useful result, regardless of whether a program of purely algorithm steps is used.

Because of the importance of assuring that a patent will be granted to protect significant inventions involving computer programs, it is essential that the Guidelines be adopted. The Guidelines will thus inform the inventors whether their inventions are patentable and whether they should pursue the obtaining of a patent, insure that the patent attorney properly discloses the invention to make certain it is within the rules set forth, and aid the examiner in determining the patentability of highly complex inventions involving computer programs.

*Richard A. Bachand*