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## Copyright Protection of Computer Software in the European Community: Current Protection and the Effect of the Adopted Directive

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## COMMENT

PAUL G. HIDALGO\*

# Copyright Protection of Computer Software in the European Community: Current Protection and the Effect of the Adopted Directive

The verdict has been reached. After almost three years of deliberation within the European Community (EC), the European Community Council of Ministers finally adopted the Directive on the Legal Protection of Computer Programs (Council Directive) aimed at harmonizing the legal protection of computer programs in the EC.<sup>1</sup> The Council Directive establishes that computer programs shall be protected as literary works within the meaning of the Berne Convention for the Protection of Literary and Artistic Works.<sup>2</sup> Each Member State was required to promulgate the laws necessary to implement the Council Directive before January 1, 1993.<sup>3</sup>

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1. Council Directive 91/250 on the Legal Protection of Computer Programs, 1991 O.J. (L 122) 42 [hereinafter Council Directive]. A Council Directive is binding on each Member State. Kynthia D. Colyvas, *European Economic Community: Approaching Complete Formation*, 5 SANTA CLARA COMPUTER & HIGH TECH. L.J. 498, 507 (1989).

2. Council Directive, *supra* note 1, art. 1(1), at 44. See *infra* part II for discussion of the Berne Convention for the Protection of Literary and Artistic Works.

3. Council Directive, *supra* note 1, art. 10(1), at 46. The twelve Member States of the EC are Belgium, Denmark, the Federal Republic of Germany, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom. See generally Alfred P. Meijboom, *Software Protection in "Europe 1992,"* 16 RUTGERS COMPUTER & TECH. L.J. 407 (1990).

Since this article went to press before the January 1, 1993, deadline, discussion of any Member State's laws implementing the Council Directive is beyond its scope.

Uniform protection of computer programs<sup>4</sup> is important to the harmonization of the EC. In conjunction with the rest of the world, computer sales have expanded rapidly in the EC.<sup>5</sup> Overall, software demand is currently stronger in Europe than in the United States, which has motivated U.S. firms to focus much of their attention on sales in western Europe.<sup>6</sup> In fact, the dominant suppliers in western Europe currently are from the United States.<sup>7</sup>

To maintain its competitiveness, the EC must have a dynamic software industry. Appropriate legal protection for computer programs is particularly important so that the EC can provide an environment favorable to investment and innovation by EC firms. Such legal protection is necessary to provide incentives for development activity within the EC. This protection entails harmonization of EC software protection laws to minimize trade barriers and to protect against software piracy.<sup>8</sup>

Only if laws adequately protect computer software will EC firms have the incentive to develop software programs. Given the high cost of software development, inadequate protection against piracy would be a disincentive to software development firms. A pirate can copy the software, alter it slightly, and sell the software for much less than the originator, thus undercutting the originator's market.<sup>9</sup>

Software protection in the EC is uncertain. Those Member States that provide software protection favor the application of copyright laws.<sup>10</sup> However, such protection varies as to duration, degree of originality, and the extent to which reverse engineering is allowable.<sup>11</sup> Other Member States have not clearly recognized, either by statute or case law, that software programs are protectable by copyright.<sup>12</sup>

The need to clarify protection for computer programs in Member States was first discussed in the Green Paper on Copyright and the Challenge of Technology (Green Paper), which invited comments from interested parties prior to the Euro-

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4. The Council Directive defines "computer program" to "include programs in any form, including those which are incorporated into hardware . . . [and also] preparatory design work leading to the development of a computer program. . . ." Council Directive, *supra* note 1, pmbl. cl. 11, at 42. For purposes of this article, computer software will be used interchangeably with computer program.

5. In 1985 the western European software market was valued at \$9.5 billion, 54% of which was derived from sales of packaged software. Green Paper on Copyright and the Challenge of Technology Copyright Issues Requiring Immediate Action, COM(88)172 final at 171-72 [hereinafter Green Paper]. Commercial software sales worldwide ranged between \$30 and \$39 billion in 1985. *Id.*

6. *Id.*

7. Combined, U.S. firms supplied 65% to 85% of system software to the western European market in 1985 and about 55% of the market for application software. *Id.* at 172. The U.S. share of the entire software market was approximately 70% in 1985. *Id.* at 171.

8. *See id.* at 174-80.

9. *See* Keith A. Styracula, *The Adequacy of Copyright Protection for Computer Software in the European Community 1992: A Critical Analysis of the EC's Draft Directive*, 31 JURIMETRICS J. 329, 330 (1991).

10. *See infra* part II.

11. *Id.*

12. *Id.*

pean Economic Community Commission's submission of a proposal for the protection of computer programs.<sup>13</sup> The Commission subsequently published the Proposal for a Council Directive on Protection for Software,<sup>14</sup> the discussion of which culminated in the adoption of the Council Directive on May 14, 1991.<sup>15</sup>

This Comment first examines the general attributes of copyright as a framework for protection of computer programs and thereafter reviews the relevant law of each EC Member State. Finally, the merits and potential deficiencies of the Council Directive are critically examined, and significant Member State changes necessary to implement the Council Directive are identified.

## I. Copyright Protection for Computer Software

The market for software products is increasingly global in nature. Although patent law offers possibilities for software protection, it would be useful for only a few computer programs; the requirements of inventiveness and novelty<sup>16</sup> (not mere originality,<sup>17</sup> as required by copyright) are a serious hindrance for most software programs. Following the lead of the United States, a significant number of countries adapted their copyright laws to specifically include computer software as copyrightable material.<sup>18</sup> Other countries have recognized the copyrightability of computer software through case law.<sup>19</sup> The U.S. share of the software market amounts to at least 70 percent<sup>20</sup> of the world market, which has enabled the United States to resolve many of the problems in applying copyright protection to computer software. Thus, this article briefly examines the primary attributes of copyright law in terms of U.S. copyright law.

Copyrightable intellectual property must be an original work of authorship, fixed in a tangible medium, from which it can be "perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."<sup>21</sup>

13. See Green Paper, *supra* note 5.

14. Commission Proposal for a Council Directive on the Legal Protection of Computer Programs, 1989 O.J. (C 91) 4 [hereinafter Proposed Directive].

15. Council Directive, *supra* note 1.

16. See 35 U.S.C. § 103 (1991) (Historical and Statutory Notes). "[R]efusal of patents by the Patent Office, and the holding of patents invalid by the courts, on the ground of lack of invention or lack of patentable novelty has been followed since at least as early as 1850." *Id.*

17. 17 U.S.C. § 102(a) (1988) is "intended to incorporate without change the standard of originality established by the courts under the present copyright statute. This standard does not include requirements of novelty, ingenuity, or esthetic merit and there is no intention to enlarge the standard of copyright protection to require them." H.R. REP. NO. 94-1476, 94th Cong., 2d Sess. 51-51 (1976).

18. Michael S. Keplinger, *International Protection for Computer Programs*, reprinted in 1 COMPUTER SOFTWARE 1989: PROTECTION AND MARKETING 383 (Morton D. Goldberg ed., 1989); David R. Syrowik, *International Software Protection*, 70 MICH. B.J. 656, 658-59 (1991) (provides a chart of major industrialized countries that provide copyright protection for computer programs).

19. Syrowik, *supra* note 18.

20. Green Paper, *supra* note 5, at 171.

21. 17 U.S.C. § 102(a) (1988).

The degree of originality is minimal, requiring neither novelty nor ingenuity.<sup>22</sup> Simply stated, once the creator transfers an idea to a tangible medium, a copyright is born providing protection from the moment of transfer.<sup>23</sup> The copyright then endures for the life of the author plus fifty years.<sup>24</sup> Generally, fifty years far exceeds the exploitable life of computer programs.<sup>25</sup>

Copyright law does not protect the copyright owner from having others take the ideas used in the copyrighted work.<sup>26</sup> Copyright law protects only the expression of the idea, not the idea itself.<sup>27</sup> Underlying the grant of copyrights is the belief that encouragement of individual effort by personal gain best encourages authors to make their works available to the public, thus advancing public welfare.<sup>28</sup> Copyright protection of the underlying ideas as well as the work would inhibit rather than advance this philosophy by permitting one author to withdraw the use of an idea from other authors.<sup>29</sup> Thus, copyright laws must balance protection of the author's interest against keeping ideas available for others to use.<sup>30</sup> This idea/expression dichotomy is the essence of copyright law, and it has proved problematic for the courts seeking to protect computer programs.

In practice, determining precisely which elements of a computer program are expression and which are ideas is often difficult. Courts have recognized that

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22. In *Atari Games Corp. v. Oman*, 888 F.2d 878, 883 (D.C. Cir. 1989), the court stated that "[t]he level of creativity necessary and sufficient for copyrightability has been described as 'very slight,' 'minimal,' 'modest.' " See also *supra* note 17 (the judicial standard of originality has been codified in 17 U.S.C. § 102(a) (1988)).

23. A tangible medium for computer software includes disks, magnetic tape, punch cards, or other devices on which programs can be stored. Preparatory materials such as flowcharts may also be considered tangible mediums.

24. 17 U.S.C. § 302(a) (1988). The duration of a copyright for joint works prepared by two or more authors who did not work for hire, lasts for the life of the last surviving author plus fifty years after the death of such last surviving author. *Id.* § 302(b). In the case of an anonymous work or a work made for hire, the copyright lasts for a term of seventy-five years from the year of publication or 100 years from its creation, whichever expires first. *Id.* § 302(c).

25. *Green Paper*, *supra* note 5, at 194. Fifty years has been used as the duration of copyright protection for computer programs to conform to protection for other copyrightable material such as literary works.

26. 17 U.S.C. § 102(b) (1988).

27. *Id.* "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." *Id.* Prior to codification, the idea/expression axiom of copyright law was recognized by the courts. *E.g.*, *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930), *cert. denied*, 282 U.S. 902 (1931). The legislative history indicates that the codification of the idea/expression dichotomy "in no way enlarges or contracts the scope of copyright protection under the present law. Its purpose is to restate, in the context of the new single Federal system of copyright, that the basic dichotomy between expression and idea remains unchanged." H.R. REP. NO. 1476, 94th Cong., 2d Sess. 54, 57 (1976).

28. *Mazer v. Stein*, 347 U.S. 201, 219 (1954); *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971); see U.S. CONST. art. I, § 8, cl. 8 (copyright clause).

29. *Id.*

30. *Sid & Mary Krofft Television Productions, Inc. v. McDonald's Corp.* 562 F.2d 1157, 1163 (9th Cir. 1977); see J. Dianne Brinson, *Copylefted Software: Separating the Protected Expression from Unprotected Ideas, A Starting Point*, 29 B.C. L. REV. 803, 811 (1988).

separating elements of the computer program into protected expression and unprotected idea must be undertaken "ad hoc."<sup>31</sup> "[N]o principle can be stated as to when an imitator has gone beyond copying the 'idea,' and has borrowed its 'expression.'"<sup>32</sup>

One exception allows a second author to copy another author's expression as well as the idea without infringement. When the idea and expression in a computer program are inseparable, merger occurs and copying of the expression is permitted.<sup>33</sup> A computer program is protectable only if alternative ways to write the program exist.<sup>34</sup> This exception furthers the underlying rationale of copyright protection by preventing a monopoly on the ideas underlying the expression of those ideas.<sup>35</sup>

The leading, and much debated, decision on the idea/expression dichotomy for computer software is *Whelan Associates v. Jaslow Dental Laboratory, Inc.*<sup>36</sup> In *Whelan*, the Third Circuit found copyright infringement when the developer of a business application program brought a copyright infringement action against a dental laboratory, for whose benefit the program was developed.<sup>37</sup> The dental laboratory had developed a similarly structured program for distribution, but in a different computer language.<sup>38</sup> The court rejected the dental laboratory's contention that the structure of a computer program is, by definition, the idea and not the expression of the idea.<sup>39</sup> The Third Circuit formulated a rule for distinguishing idea from expression in computer programs:

[T]he line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question. In other words, *the purpose or function of a utilitarian work would be the work's idea, and everything that is not necessary to that purpose or function would be part of the expression of the idea.* Where there are various means of achieving the desired purpose, then the particular means chosen is not necessary to the purpose; hence, there is expression, not idea.<sup>40</sup>

The court found that the idea of the application program was the "efficient management of a dental laboratory."<sup>41</sup> Because the idea could be accomplished with a number of different structures, the structure of the application program was part of the program's expression, not its idea.<sup>42</sup> Thus, the Third Circuit

31. *E.g.*, *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*, 274 F.2d 487, 489 (2d Cir. 1960).

32. *Id.*

33. 3 MELVILLE B. NIMMER, NIMMER ON COPYRIGHT § 13.03[B][3] (1991) [hereinafter NIMMER ON COPYRIGHT].

34. *Id.*

35. See *supra* note 27 and accompanying text.

36. 797 F.2d 1222 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987).

37. *Id.*

38. *Id.*

39. *Id.* at 1235.

40. *Id.* at 1236 (emphasis in original; citations omitted). The court noted that the enunciated rule was most applicable to the analysis of utilitarian or "functional" works for which the purpose is easily stated and identified. *Id.* at 1237.

41. *Id.* at 1236 n.28.

42. *Id.*

found that "copyright protection of computer programs may extend beyond the programs' literal code<sup>43</sup> to [its] structure, sequence, and organization."<sup>44</sup>

The Third Circuit decision has been the subject of heated discussion in both the courts and the academic community regarding the proper scope of copyright protection. One critic of the *Whelan* rule described it as "too blunt an instrument,"<sup>45</sup> stating that by limiting the unprotected ideas to the program's overall function, *Whelan* overprotects the copyright owner by giving copyright protection to the internal program ideas.<sup>46</sup> A recent Second Circuit opinion, *Computer Assoc. International, Inc. v. Altai, Inc.*, has criticized *Whelan*'s general formulation, that is, only one idea underlies a computer program, as descriptively inadequate.<sup>47</sup> Additionally, the Second Circuit stated that "*Whelan*'s approach to separating idea from expression in computer programs relies too heavily on metaphysical distinctions and does not place enough emphasis on practical considerations."<sup>48</sup> Rather, the Second Circuit has proposed a three-step procedure, abstraction-filtration-comparison, to separate idea from expression.<sup>49</sup>

On the other hand, supporters of the decision, while admitting that "at first blush" *Whelan* appears to apply the idea/expression dichotomy only at the macro level, note that the court did go further and apply the merger principle.<sup>50</sup> Subsequent cases, applying *Whelan*, have purportedly made it clear that copyright protection of structure, sequence, and organization does not confer a patent-like monopoly over the ideas, processes, or functions expressed in a particular computer program.<sup>51</sup> Clearly, the idea/expression dichotomy applied to computer programs is still the subject of debate and further development.

## II. Current European Software Copyright Protection

All the EC Member States are members of the two major copyright conventions, the Berne Convention for the Protection of Literary and Artistic Works (Berne

43. In simplistic terms, literal code is comprised of the source code and the object code. A programmer first writes a program in source code which includes such languages as COBOL, FORTRAN, EDL, or BASIC. Source code is then translated into object code which is based on a binary system of "0"s and "1"s. The computer program in object code directs the computer to perform specific functions. See *Whelan*, 797 F.2d at 1230.

44. *Id.* at 1248.

45. Brinson, *supra* note 30, at 851.

46. *Id.* at 831.

47. Nos. 91-7893, 91-7935, 1992 WL 139,364 (2d Cir. June 22, 1992).

48. *Id.* at 12.

49. *Id.* Discussion of this three-part procedure is beyond the scope of this article.

50. E.g., Morton D. Goldberg & John F. Burleigh, *Copyright Protection for Computer Programs: Is the Sky Falling?*, 17 AIPLA QUARTERLY JOURNAL 294, (1989), reprinted in *COMPUTER SOFTWARE 1990: PROTECTION AND MARKETING* 153 (Morton D. Goldberg ed., 1990).

51. See, e.g., *Johnson Controls, Inc. v. Phoenix Control Systems, Inc.*, 886 F.2d 1173 (9th Cir. 1989) (nonliteral components of computer software, including the structure, sequence, and organization and user interface may be protected by copyright where they constitute expression); *Healthcare Affiliated Serv., Inc. v. Lippany*, 701 F. Supp. 1142 (W.D. Pa. 1988) (the result of creative decisions at merely a "gross level" of generality did not constitute protectable structure, sequence and organization within the meaning of *Whelan*).

Convention) and the Universal Copyright Convention (UCC).<sup>52</sup> The Berne Convention is self-executing in most of the EC Member States;<sup>53</sup> a work is protected outside of its country of origin in all other Berne Convention countries without regard to any formalities which the country of origin might impose pursuant to its own domestic legislation as preconditions for copyright protection.<sup>54</sup> Membership in the Berne Convention provides foreign protection for creative works by the nationals of participating nations to the same degree the foreign member country protects similar works by its own citizens.<sup>55</sup>

The UCC also provides for reciprocal national copyright treatment.<sup>56</sup> Unlike the Berne Convention, the protection afforded by the UCC is not self-executing.<sup>57</sup> While the list of examples of protected literary and scientific works in both conventions omits computer programs,<sup>58</sup> the language of both conventions is broad enough to include such programs.<sup>59</sup> The protection afforded computer programs and the means by which this protection is implemented vary among the Member States. Following is a survey of the copyright protection (including the means of implementation) afforded computer programs by the individual Member States.<sup>60</sup>

#### A. BELGIUM

The Law on Copyright of March 22, 1886, as amended through March 11, 1958, governs copyright protection for literary and artistic works in Belgium.<sup>61</sup> The Belgian copyright laws do not specifically mention computer programs, and

52. Both the Berne Convention and the UCC are a series of separate acts, rather than a single instrument. The version of the Berne Convention in force in most Member States is the Paris Act of 1971. See Berne Convention for the Protection of Literary and Artistic Works (Paris Act, 1971), reprinted in 5 NIMMER ON COPYRIGHT, *supra* note 33, app. 27 [hereinafter Berne Convention]. Belgium and Ireland, however, have acceded to the Brussels Act of 1948, 331 U.N.T.S. 217, for the bulk of its provisions, and to the Stockholm Act of 1967, 828 U.N.T.S. 221, for articles 22 to 38. See 1 MELVILLE B. NIMMER & PAUL E. GELLER, INTERNATIONAL COPYRIGHT LAW AND PRACTICE, INT.-218 to -220 (1991) [hereinafter INTERNATIONAL COPYRIGHT LAW AND PRACTICE]. Articles 22 to 38 provide governing and administrative rules for the Convention. *Id.* Member State accession to the UCC is split between the original Geneva Act of 1952, 216 U.N.T.S. 132, and the revised Paris Act of 1971, 943 U.N.T.S. 178. *Id.* at INT-224 to -225.

53. INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at INT-63. The United Kingdom, for example, deems its treaties not to be self-executing and domestic law is enacted to implement treaties. *Id.* at INT-62 n.284.

54. Berne Convention, *supra* note 52, art. 5(2).

55. See *infra* note 238.

56. Universal Copyright Convention (Paris Act of 1971, art. II, 943 U.N.T.S. 178, 195) [hereinafter UCC].

57. *Id.* art. III.

58. Berne Convention, *supra* note 52, art. 2; UCC, *supra* note 56, art. I.

59. See *supra* note 58.

60. Certain of the Member States also provide trademark and patent protection for software, but any discussion of such matters is beyond the scope of this article.

61. John P. Sumner & Dianne Plunkett, *Copyright, Patent and Trade Secret Protection for Computer Software in Western Europe*, 8 COMPUTER L.J. 327, 342 (1988).

no Belgian court has extended copyright protection to computer programs.<sup>62</sup> However, the Belgian Government has announced that it will favor copyright law as the primary form of computer software protection.<sup>63</sup>

Under article 2 of the Belgian law, copyright protection begins at the time of creation and extends for fifty years after the death of the author.<sup>64</sup> No particular formalities need to be met to qualify for copyright protection.<sup>65</sup> However, copyright protection applies only to original works with some expression of personality; novelty is not necessary.<sup>66</sup>

"Under Belgium law, copyright can originally vest only in the author, a natural person, because copyright arises from the creative act which can be accomplished by that individual alone."<sup>67</sup> Notably, an author/employee remains the owner of the original copyright, but the author/employee can transfer it to the employer.<sup>68</sup> The author has three basic exclusive rights of ownership: reproduction, distribution, and adaptation.<sup>69</sup>

## B. DENMARK

Denmark protects copyrights under Law No. 158 on Copyright in Literary and Artistic works of May 31, 1961.<sup>70</sup> As amended by Law No. 378, June 7, 1989, copyright protection extends to computer software.<sup>71</sup> The amendment requires originality and provides a term of protection covering the author's life plus fifty years.<sup>72</sup> The amendment does not require formalities such as registration.<sup>73</sup> Programs created by employees in the course of employment belong to the employer.<sup>74</sup> Once a copy is distributed, it may be resold or given away.<sup>75</sup>

## C. FEDERAL REPUBLIC OF GERMANY

The Federal Republic of Germany (Germany) chose copyright as the main method for protecting computer programs. The legislature included computer

62. INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at BEL-14.

63. Green Paper, *supra* note 5, at 178.

64. INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 59, at BEL-14. With regard to group projects under Article 5 of the Copyright Act, post mortem protection begins on the death of the last surviving author of the group. *Id.* The fifty-year protection period begins on the date of first publication for anonymous or pseudonymous works. *Id.* at BEL-15.

65. *Id.* at BEL-10.

66. *Id.* at BEL-11.

67. *Id.* at BEL-16. A corporation cannot be an author under Belgium law. *Id.*

68. *Id.* at BEL-18.

69. *Id.* at BEL-28. Note, however, that the right to control the distribution of a copy is exhausted once the copy is put into circulation in any Member State. *Id.*

70. Sumner & Plunkett, *supra* note 61, at 344.

71. 1 DAVID BENDER, COMPUTER LAW: SOFTWARE PROTECTION § 3B.04[9A] (1991).

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.*

programs in the Copyright Act of 1965 as amended on July 1, 1985 (the Law).<sup>76</sup> In article 2 of the Law protected works are defined as including "literary works . . . and programs for data processing."<sup>77</sup> Article 64 makes copyright protection available for seventy years after the death of the author<sup>78</sup> beginning at the moment of creation.<sup>79</sup> No registration or other formalities are required.<sup>80</sup>

The Law requires originality for a work to receive copyright protection.<sup>81</sup> This aspect of the Law, as developed by case law, is the most significant feature of Germany's copyright protection for computer software.<sup>82</sup> According to article 2(2) of the Law, writings are protected by copyright only if they meet the originality requirement of "personal intellectual creation."<sup>83</sup> In principle, the source code and object code are eligible for copyright protection if they meet this standard of originality.<sup>84</sup>

The Federal Supreme Court of Germany has imposed a high standard of originality for assessing whether a computer program is a personal intellectual creation, to be determined on a case-by-case basis.<sup>85</sup> In *Inkasso-Programm* (debt-collection program), the leading decision of the Federal Supreme Court, the Court held that a program is eligible for protection only when it represents an original, individual creative effort when compared to existing programs.<sup>86</sup> This decision seems to mean that protection will only be available for programs that are "clearly above average."<sup>87</sup> The Court rendered the *Inkasso-Programm* decision before the July 1, 1985, amendment to the Copyright Act that recognized copyright protection for software. However, since the Supreme Court also recognized that software could be protected by copyright, it remains valid precedent.<sup>88</sup>

The Federal Supreme Court reaffirmed its position on the standard for originality in the *Betriebssystem* (operating system) decision rendered October 4, 1990.<sup>89</sup> In its opinion, the Supreme Court stated that:

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76. *Act Dealing with Copyright and Related Rights § 2 in GERMAN INDUSTRIAL PROPERTY, COPYRIGHT AND ANTITRUST LAWS* 149 (Friedrich-Karl Beier et al. eds., 2d ed. 1989) [hereinafter German Copyright Act].

77. *Id.*

78. Sumner & Plunkett, *supra* note 61, at 351.

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.*

83. Jurgen Betten, *New Decision of the German Federal Supreme Court Concerning Copyright Protection of Computer Programs*, *SOFTWARE PROTECTION*, Nov.-Dec. 1990, at 10.

84. Antje Mattfeld, *Protection of Software Against Third Parties in the Federal Republic of Germany*, 1 *SOFTWARE L.J.* 341, 347 (1986).

85. See discussion of *Inkasso-Programm*, BGH 1985 GRUR 1041 (1985), in Mattfeld, *supra* note 84, at 345-47.

86. *Id.*

87. Michael S. Keplinger, *International Protection for Computer Programs*, 4 *SOFTWARE L.J.* 15, 29 (1990).

88. *Id.*

89. See discussion of *Betriebssystem*, BGH, 139 IZR89 (1990), in Betten, *supra* note 83.

The question of creative peculiarity is measured by a general comparison with already existing designs. If, according to this general comparison, creative peculiarities can be found, these must be contrasted with the average work required for writing a program. An inventive merit of the design that is sufficient for copyrightability is only reached when the everyday, average work of a programmer, which is based on a more or less routine, workmanlike, mechanical-technical sequencing and arrangement of the material, is distinctly exceeded.<sup>90</sup>

The Supreme Court indicated that the comparison should not be made against an average or "similarly good" designer.<sup>91</sup> Thus, the Federal Supreme Court still recognizes the originality standard provided in *Inkasso-Programm*.

Copyright in a work vests in its creator.<sup>92</sup> In the case of an employee who develops software in the course of employment, the employee is the creator and thus the author.<sup>93</sup> However, under German case law, a tacit conveyance of the right to use works that an employee creates in performance of his or her working duties is assumed.<sup>94</sup> This tacit conveyance also applies to commissioned works.<sup>95</sup>

Under article 15 of the Law the author has the exclusive right to exploit the work in material form.<sup>96</sup> This includes exclusive authority over reproduction, distribution, and adaptation.<sup>97</sup> A reproduction includes any recodation on another tangible medium.<sup>98</sup> Article 53(4) requires consent of the holder for any reproduction of a computer program or a part thereof, including any reproduction for personal use.<sup>99</sup> Under article 17 the right of distribution entails the right to offer to the public or to place in circulation the original work or copies thereof.<sup>100</sup> Infringement of these rights entitles the copyright owner to claim damages, recover profits derived by the infringer, or institute penal proceedings.<sup>101</sup>

#### D. FRANCE

France enacted Law No. 85-660 on July 3, 1985 (Law of 1985), which extended copyright protection under the French Copyright Act of March 1957 (1957 Act) to computer software.<sup>102</sup> The Law of 1985 treats computer software differently

90. *Id.* at 13.

91. *Id.* at 15.

92. Mattfeld, *supra* note 84.

93. *Id.*

94. Sumner & Plunkett, *supra* note 61, at 351.

95. *Id.*

96. Mattfeld, *supra* note 84, at 349.

97. *Id.*

98. *Id.*

99. Sumner & Plunkett, *supra* note 61, at 351.

100. Mattfeld, *supra* note 84, at 349. "Placing into circulation" means that the computer program or other work must be gifted away, sold, or otherwise disposed of to the public. *Id.*

101. *Id.*; Law, § 97(1), 106.

102. Andre R. Bertrand, *Copyright Protection for Computer Software in France Under the Law of July 3, 1985*, SOFTWARE PROTECTION, Aug. 1985, at 5, 7.

from other copyrightable works. Title V of the Law of 1985 expressly applies to software (*les logiciels*), and some of its terms contradict the provisions set forth by the 1957 Act.<sup>103</sup>

For example, article 45 of the Law of 1985 provides that software developed by employees in the course of employment belongs to the employer;<sup>104</sup> whereas, the 1957 Act provides that the rights vested in a work belong to its author, even if the author created the work pursuant to an employment or services contract.<sup>105</sup> Additionally, article 46 of the Law of 1985 provides that "the author cannot refuse to permit the adaptation of his software within the limits of the rights granted by him, nor make use of his right to revoke or to withhold"; whereas, articles 6, 19, and 32 of the 1957 Act give the author a moral right that allows him to oppose any adaptation of his work.<sup>106</sup> Article 47 of the Law of 1985 limits the licensee's right to make a "fair use" copy, as provided by article 41 of the 1957 Act, in favor of allowing only a backup copy to be made.<sup>107</sup> Article 51 of the Law of 1985 subjects foreign software to a condition of reciprocity in order to be protected by copyright in France.<sup>108</sup>

Article 48, which deals with the duration of protection, creates the most controversy. Article 48 limits the term of software protection to twenty-five years from the date of creation.<sup>109</sup> This limitation raises national and international issues. The Berne Convention provides for fifty years of protection.<sup>110</sup> At the same time, article 7(8) of the Berne Convention will limit France's protection to twenty-five years in Berne Convention member countries despite the longer protection period under the Convention.<sup>111</sup> This shorter protection period may prove detrimental to French software developers. Additionally, it remains unclear whether France will be able to limit the protection of foreign works to twenty-five years when such software is still protected in the country of origin.<sup>112</sup> Interestingly, software developed prior to January 1, 1986, will continue to be protected for fifty years under the 1957 Act.<sup>113</sup>

Despite the changes noted by the Law of 1985, French law still requires originality for computer programs to receive copyright protection.<sup>114</sup> Originality

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103. *Id.*

104. *Id.* at 7 (Law of 1985 translated in English).

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.* at 7, 8.

109. *Id.* at 6.

110. Berne Convention, *supra* note 52, app. 27, art. 7(1).

111. *Id.* art. 7(8).

112. Bertrand, *supra* note 102, at 8.

113. *Id.*

114. BENDER, *supra* note 80, § 3B.04[11].

merely requires that works result from "an intellectual creative process."<sup>115</sup> Copyright protection meeting the originality requirement appears to extend to system software,<sup>116</sup> applications software,<sup>117</sup> and video games.<sup>118</sup> The French Supreme Court (Cour de Cassation) has also extended copyright protection to flowcharts of computer programs and to source code listings and their translation or fixation on any medium.<sup>119</sup>

#### E. GREECE

Greek courts have not had an opportunity to take a position on the protection of computer software by copyright.<sup>120</sup> The Greek Copyright Act of 1920 does not mention software.<sup>121</sup> However, a final draft of the new Greek copyright law was submitted to the Ministry of Culture in February 1992.<sup>122</sup> The final draft contains seventy-one articles covering the whole context of the copyright law and transforming the Council Directive into national law regarding protection of computer programs.<sup>123</sup> Indeed, the final draft adopted the wording of the Council Directive with one particular exception.<sup>124</sup> The final draft permits reverse engineering or decompilation if "necessary," whereas the Council Directive permits reverse engineering or decompilation only if it is "indispensable."<sup>125</sup>

#### F. IRELAND

The Irish delegation to the 1985 World Intellectual Property Organization meeting reported that its nation's copyright laws extended to software.<sup>126</sup> The

115. See discussion of *Babolat v. Pachot*, Cass. ass. plen., 82 *Expertises* 1986, 63 note A. Bertrand in BENDER, *supra* note 71, § 3B.04[11]. The French Supreme Court stated:

The elaboration of a computer program is an original work of the mind (*oeuvre de l'esprit*) in its composition and expression, and goes beyond automatic and imposed logic since a programmer, like a translator, must choose between various alternatives and expressions. His choice reflects his personality and he is therefore entitled to invoke the rights granted to the author by the law of March 11, 1957 on Literary and Artistic Property.

*Id.*

116. See discussion of *Apple v. Segimex*, Trib. gr. inst., 56 *Expertises* 1983, 257 (1983), in BENDER, *supra* note 71, § 3B.04[11] ("If it is true that technology leads more and more to the integration of software into memory, this simple fact does not alter its nature or deprive it [of] copyright protection.").

117. See discussion of *Wallon v. Christian B*, CA Paris, 92 *Expertises* 1987, 69 (1987), in BENDER, *supra* note 71, § 3B.04[11] (Copyright extends to "intellectual works" whatever their destination.).

118. BENDER, *supra* note 71, § 3B.04[11].

119. See Andre R. Bertrand, *French Supreme Court Declares Software and Video Games "Original Works of Authorship" Under the 1957 Copyright Act*, SOFTWARE PROTECTION, Feb. 1986, at 14 (discusses Supreme Court holdings in the cases: *Babolat v. Pachot*, *Atari*, and *Williams Electronics*).

120. INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at GRE-11.

121. *Id.* at GRE-7.

122. Michail Marinos, *Developments in Greek Copyright Law*, SOFTWARE PROTECTION, Apr. 1992, at 16.

123. *Id.*

124. *Id.*

125. *Id.*

126. Dennis Cline, *Copyright Protection of Software in the EEC: The Competing Policies Underlying Community and National Law and the Case for Harmonization*, 75 CAL. L. REV. 633, 655 (1987).

Copyright Act of 1963 (1963 Act), which governs the law of copyright in Ireland, does not contain any reference to computer programs, and to date no case has adequately considered the question of copyright protection for computer programs.<sup>127</sup> However, the definition of "literary work" in section 2 of the 1963 Act could include a computer program fixed in a tangible medium.<sup>128</sup> Assuming that the 1963 Act treats computer programs as literary works, the 1963 Act protects the author if he or she is a "qualified person."<sup>129</sup> If an employee creates a work in the course of employment, any copyright therein belongs to the employer.<sup>130</sup>

The 1963 Act requires no formalities for copyright protection.<sup>131</sup> If a work meets the test of originality,<sup>132</sup> the requirement of which is minimal, the 1963 Act protects the work for the life of the author plus fifty years from the end of the calendar year in which the author dies.<sup>133</sup> The exclusive rights of the copyright holder primarily applicable to computer programs include control of reproduction, publishing, and adaptation (including translation).<sup>134</sup> Thus, if the 1963 Act includes computer programs in the category of literary works, the 1963 Act will provide an adequate framework for computer software protection.

## G. ITALY

The Law for the Protection of Copyright and Other Rights Connected with the Exercise Thereof, Law No. 633 of April 22, 1941, as amended through July 29, 1981 (Italian Copyright Act) governs copyrights in Italy.<sup>135</sup> The Italian Copyright Act does not specifically mention computer software as copyrightable.<sup>136</sup> However, Italian courts have tended to protect computer programs by copyright.<sup>137</sup>

Copyright protection under article 25 of the Italian Copyright Act exists for

127. William Earley, *The Protection of Computer Software Against Third Parties in Ireland*, 1 SOFTWARE L.J. 361, 362-63 (1986). The only Irish case to date which has considered any aspect of software copyrightability is *Noraut Ltd. v. Kimble Ireland Ltd.* (High Court, March 22, 1984, Gannon, J., unreported). *Id.*

128. *Id.* at 362. The Copyright Act of 1963, § 2 defines "literary work" to include "any written table or compilation." *Id.* at 362-63.

129. *Id.* at 363. A "qualified person" as defined by § 7(5) of the Copyright Act of 1963 includes:

(a) in the case of an individual, an Irish citizen or a person domiciled or resident within Ireland; and  
(b) in the case of a body corporate—a body corporate incorporated under the laws of Ireland.

*Id.*

130. *Id.* at 364-65 (provided by the Copyright Act of 1963 § 10(4)).

131. Sumner & Plunkett, *supra* note 61, at 354.

132. Earley, *supra* note 127, at 362.

133. Sumner & Plunkett, *supra* note 61, at 354.

134. *Id.* at 364.

135. *Id.* at 356.

136. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at ITA-25. Some commentators have indicated that article 99 of the Copyright Act should provide protection for computer programs "as works which constitute original solutions of technical problems." *Id.*

137. *E.g.*, *SIAE v. Domenico Pompa*, Judgment of 24 Nov. 1957, Cass. [1987] III. Sez. Penale, 6.2.87 no. 1323 (*cited in* Keplinger, *supra* note 87, at 33). The court held that "software . . . is an object of copyright protected under Civil and Criminal Laws." *Id.*

the duration of the author's life plus fifty years.<sup>138</sup> Works under copyright must be original in the sense that they result from creative activity.<sup>139</sup> Computer programs developed by employees belong to employees unless a contract to the contrary or a written agreement to transfer the right of use or economic exploitation to the employer exists.<sup>140</sup> The right holder has the right to reproduce a work by any means, to control commercial distribution, and to translate and adapt a work.<sup>141</sup>

## H. LUXEMBOURG

The state of protection in Luxembourg for computer programs remains uncertain. Luxembourg has not addressed the issue either through statute or case law. However, the Luxembourg Government has indicated it will favor copyright protection as the primary form of protection for computer software.<sup>142</sup>

## I. NETHERLANDS

The Dutch Copyright Act (Dutch Act) contains no express mention of computer programs.<sup>143</sup> In 1987, a bill was introduced to enact a revision expressly making computer programs copyrightable.<sup>144</sup> However, it was withdrawn in 1989 to await the adoption of the Council Directive.<sup>145</sup> Article 10(1) of the Dutch Act includes a list of examples of works subject to copyright including "any production in the literary, scientific or artistic fields, whatever may be the mode or form of its expression."<sup>146</sup> Lower courts have found that software comes under this final clause.<sup>147</sup> However, the Dutch Supreme Court (Hoge Raad der Nederlanden) has not addressed the issue.

138. INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at ITA-27. Article 26(1) provides that joint works are protected for fifty years following the death of the last surviving author. *Id.* at ITA-28. Anonymous or pseudonymous works are protected for fifty years from the date of first publication unless the author's identity is revealed. *Id.* In such case, the general rule of article 25, providing for fifty years from death of author, applies. *Id.*

139. *Id.* at ITA-10. Article 1 provides for protection of intellectual works having a "creative character" and article 6 entitles an author to copyright protection for the "creation of the work as the result of an intellectual effort." *Id.* at ITA-10, 11. Minimal originality is required; the work must result from the author's "original skill and labor in execution." *Id.*

140. Pietro Cavasola, *Legal Protection of Software Against Third Parties in Italy*, 1 SOFTWARE L.J. 367, 371 (1986).

141. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at ITA-66 (arts. 13, 17, 18, respectively). The rights indicated are those particularly applicable to software. *Id.* Other rights are also available under the Copyright Act. *Id.*

142. Green Paper, *supra* note 5, at 178.

143. BENDER, *supra* note 71, § 3B.04[24].

144. *Id.*

145. *Id.*

146. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at NETH-9.

147. *See id.* at NETH-16 n.40.

No formalities are necessary for a work to be protected by copyright under the Dutch Act.<sup>148</sup> The Dutch Act merely requires that a work meet the test of originality.<sup>149</sup> The Benelux Court of Justice addressed the issue of originality and ruled that a copyrightable work is "a product displaying a distinctive, original character, one bearing the personal imprint of the designer."<sup>150</sup> Copyright protection terminates fifty years from the first of January following the death of the author.<sup>151</sup> Generally, the author of a work retains initial ownership of copyright rights,<sup>152</sup> and two broadly stated exclusive rights are conferred on the right holder: the right to make a work public and the right to reproduce it.<sup>153</sup> The Netherlands appears to favor copyright protection for computer programs, and now that the Council Directive has been adopted, an amendment to the Dutch Act can be expected to expressly include software under copyright protection.

## J. PORTUGAL

Portugal has a total lack of case law or specific statutory provisions addressing copyright protection for computer programs. However, the belief is that computer programs are covered by the "notion of 'intellectual creation' in Article 1 of the 1985 Code on Copyright and Related Rights, though they are not mentioned in the examples specified in Article 2."<sup>154</sup>

148. "There are no requirements that a work be fixed in any tangible or durable form, or satisfy any other formalities. . . ." *Id.* at NETH-9.

149. *Id.*

150. Judgment of May 22, 1987, Benelux Court of Justice, *Informatierecht AMI 1987/4*, 78 (*cited in* 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at NETH-14).

151. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at NETH-27 (Copyright Act art. 37). Copyright protection for joint works begins on the first of January following the death of the last surviving author. *Id.*

152. *Id.* at NETH-30. Works made for hire—works made under the supervision of another person, works made in the course of employment—are exceptions to the general rule. *Id.* Regarding works made under the supervision of another person, article 6 of the Copyright Act states: "If a work has been produced according to the plan and under the guidance and supervision of another person, that person shall be deemed to be the author of the work." *Id.* at NETH-31. article 7 provides: Regarding works made in the course of employment, "Where work performed in the service of another person consists in the production of certain literary, scientific or artistic works, the person in whose service they were produced shall be deemed to be the author thereof unless otherwise agreed between parties." *Id.* at NETH-32. The language of article 7 indicates that it may be modified by agreement between the parties. *Id.* The article has been interpreted to only apply when the employee has factually been directed by his employer to produce certain works; it does not apply when the creator/employee works on his own initiative or the employer merely acquiesces. *Id.* at NETH-33 (*citing* Judgment of Jan. 19, 1951, HR, 1952 NJ 37).

153. *Id.* at NETH-54. The right to reproduce gives the right to control any adaptation, including translation. *Id.* at NETH-55. The right to make public entails the right to publish a reproduction or an adaptation of a work, distribution, performance, and secondary transmission. *Id.*

154. Green Paper, *supra* note 5, at 178.

## K. SPAIN

The 1987 Copyright Act of Spain (Spanish Act) provides copyright protection for computer software.<sup>155</sup> Article 10(1)(i) specifically lists a computer program<sup>156</sup> as a protectable work.<sup>157</sup> Articles 95 through 100 are devoted to software protection.

All works under article 10 are protected provided they are original, which requires that the work originate from the author's personal creative efforts.<sup>158</sup> The Spanish Act requires no other formalities for a work to receive protection.<sup>159</sup> Article 97 protects computer programs for fifty years after the date of publication or, if unpublished, of creation.<sup>160</sup> Article 5 provides that initial ownership vests in "[t]he natural person who creates any literary, artistic, or scientific work."<sup>161</sup> Since under Spanish law only natural persons can be authors, legal entities normally acquire copyright by contract.<sup>162</sup>

The author has the exclusive right to exploit his or her work in any form, notably the rights of reproduction, distribution, communication to the public, and transformation.<sup>163</sup> The first sale doctrine applies to distributions by sale; however, the right to control distribution continues for secondary uses such as rentals.<sup>164</sup> The Spanish Act provides two exceptions to the author's exclusive reproduction rights: first, the user may make a backup copy of a program without the permission of the author, and second, loading software into internal memory for utilization

155. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at SPA-15.

156. *Id.* Article 96(1) defines computer software as "any sequence of instructions or data intended for either direct or indirect use in a data-processing system to perform a function or a task or to obtain a specific result, irrespective of its form of expression and recording." *Id.* at SPA-18. Additionally, technical literature and manuals for the use of a program are afforded the same protection as a computer program. *Id.* (art. 96(2)).

157. *Id.*

158. *Id.* at SPA-13.

159. *Id.* Article 100 provides for voluntary registration of computer software. *Id.* at SPA-19.

160. Sumner & Plunkett, *supra* note 61, at 363. Other protectable works in Spain are provided a sixty-year protection period beginning on the date of the author's death. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at SPA-20 (Copyright Act art. 26).

161. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at SPA-24.

162. *Id.* at SPA-25. This "natural person" limitation is particularly applicable to works made for hire. However, in employment relationships, it is presumed that the exploitation rights have been assigned exclusively to the employer unless otherwise agreed. *Id.* at SPA-26 (Copyright Act art. 51).

163. *Id.* at SPA-47 (Copyright Act art. 17). "Reproduction" is defined by article 18 as "the incorporation of the work in a medium that enables it to be communicated and copies of all or part of it to be made." *Id.* at SPA-47, 48. Article 19 defines "distribution" as "the making available to the public of the original or of copies of the work by means of sale, hiring, or lending or in any other manner." *Id.* at SPA-48. Examples of "transformation" per article 21(1) include "its translation, adaptation, and any other alteration of its form from which a different work is derived." *Id.*

164. *Id.*

purposes is permissible.<sup>165</sup> Besides these two exceptions, the author has exclusive control over reproduction, including personal use.<sup>166</sup>

## L. UNITED KINGDOM

In the United Kingdom the Copyright Designs and Patents Act 1988 (1988 Act) expressly protects computer programs as "literary works."<sup>167</sup> However, the 1988 Act does not define computer program. An author must satisfy two prerequisites to copyright protection: fixation of the expression in a permanent form<sup>168</sup> and originality.<sup>169</sup> The originality required relates to the "expression of the thought," but such expression need not be in a novel form.<sup>170</sup> The work must originate from the author and not be copied from another work.<sup>171</sup>

Generally, protection under the 1988 Act endures for the life of the author plus fifty years thereafter.<sup>172</sup> The 1988 Act also protects, for the first time, computer-generated works for fifty years from the year of making.<sup>173</sup> Section 11 of the 1988 Act states that initial ownership belongs to the author, which refers to natural persons for literary works,<sup>174</sup> and literary works made in the course of employment

165. Manuel Heredero, *The Rights of the Users of Computer Programs in the New Spanish Act on the Law of Copyright*, SOFTWARE PROTECTION, Sept. 1988, at 1, 2.

166. Sumner & Plunket, *supra* note 61, at 363.

167. BENDER, *supra* note 71, § 3B.04[40]. Section 1(1)(a) of the Act provides that copyright subsists in "original literary . . . works." Keplinger, *supra* note 87, at 42. A literary work is defined to mean "any work, other than a dramatic or musical work, which is written, spoken or sung, and accordingly includes . . . a computer program." *Id.*

Prior to the 1988 Act, the Copyright Amendment Act of 1985 expressly confirmed protection of computer software by copyright. Christopher J. Millard, *Software Protection in the United Kingdom: The Copyright, Designs & Patents Act 1988*, SOFTWARE PROTECTION, Nov.-Dec. 1988, at 1, 2-3. However, the 1985 Amendment provided that the 1956 Act "shall apply to a computer program . . . as it applies in relation to a literary work." *Id.* at 2 (emphasis in original). In effect, the 1985 Amendment created a new category of works under the 1956 Act. *Id.* The 1988 Act now makes programs literary works per se. *Id.* at 3.

168. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-15, 16. Section 3(3) of the Act provides that a literary work is not the subject of copyright "unless and until it is recorded, in writing or otherwise. . . ." Millard, *supra* note 167, at 3. There is some doubt as to the meaning of recorded making it questionable as to whether storage of a program in temporary computer memory would satisfy that criterion. *Id.*

169. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-16.

170. See discussion of *University of London Press v. University Tutorial Press*, 2 Ch. 601, 608 (1916) in 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-16.

171. *Id.*

172. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-26 (1988 Act § 12(1)). Section 12(4) of the 1988 Act protects joint works for fifty years from the death of the last surviving author. *Id.* at U.King.-27. Anonymous or pseudonymous works are protected for fifty years from the date of first publication. *Id.* (1988 Act § 12(2)).

173. *Id.* at U.King.-26 to 27. Computer-generated works, by definition, have no natural person as author. *Id.*

174. *Id.* at U.King.-29. For purposes of a computer-generated work, § 9(3) of the Act provides that the author is the person who undertook the arrangements necessary for the creation of the work. Millard, *supra* note 167, at 4. Disputes may arise where competing individuals claim to have made the necessary arrangements. *Id.*

vest initially in the employer.<sup>175</sup> The 1988 Act gives the right holder the exclusive right to either authorize persons or personally to copy<sup>176</sup> the work, issue<sup>177</sup> copies of the work to the public, make an adaptation<sup>178</sup> of the work, or perform any of the foregoing acts in relation to an adaptation.<sup>179</sup> Section 18 of the 1988 Act applies the first sale doctrine to distributions resulting in exhaustion of the right holder's distribution rights after the first sale.<sup>180</sup>

Persons who commit any of the foregoing acts without authorization from the right holder are liable for primary infringement.<sup>181</sup> Additionally, parties involved in the commercial exploitation of copies, which the party knows or has reason to believe are infringing copies, are liable for secondary infringement.<sup>182</sup> Among the remedies available for infringement are the right of seizure and the Anton Piller procedure.<sup>183</sup>

### III. The Council Directive: Software Protection in the EC

Article 2 of the Treaty of Rome states that the purpose of the EC is "to promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increased stability, an accelerated raising of the standard of living, and closer relations between its Member States."<sup>184</sup> The

175. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-31 (1988 Act § 11(2)).

176. Section 17(2) defines the term "copying" as "reproducing the work in a material form." *Id.* at U.King.-55. One form mentioned by the 1988 Act is storing the work in any medium by electronic means. *Id.* This clearly covers computer storage.

177. Issuing copies of a work to the public consists of putting copies of a work into circulation. *Id.* at U.King.-55, U.King.-56. "Issuing" does not include "[a]cts of subsequent distribution, sale, hiring, loan, or importation into the United Kingdom," which are forms of secondary infringement. *Id.* at U.King.-56. However, renting copies of a computer program to the public is a form of primary infringement, and is protected under the right holder's right to control the issuance of copies. *Id.* (1988 Act § 18(2)).

178. For purposes of computer programs, this includes translating a computer program into a different computer language or code. BENDER, *supra* note 71, § 3B.04[40].

179. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-53.

180. Keplinger, *supra* note 87, at 43. However, the doctrine does not necessarily provide an unrestricted rental right of computer program copies after the first sale. Section 66 of the Act provides that the rental right may be limited by a right to reasonable remuneration. *Id.* Additionally, § 66(5) provides that rental rights expire fifty years after copies of the program have been lawfully made available to the public. *Id.*

181. 2 INTERNATIONAL COPYRIGHT LAW AND PRACTICE, *supra* note 52, at U.King.-55.

182. *Id.* at U.King.-56.

183. BENDER, *supra* note 71, § 3B.04[40]. Additionally, willful infringement is a crime subject to criminal proceedings. *Id.* The Anton Piller order permits plaintiff, without need to give advance notice, to inspect and seize goods that allegedly infringe, along with documents that are allegedly pertinent. *Id.* This remedy was used for the first time regarding software in 1990 by the Federation Against Software Theft to inspect premises and seize goods. *Id.*

184. Treaty Establishing the European Economic Community, Mar. 25, 1957, 298 U.N.T.S. 11, 15 (1958) [hereinafter Treaty of Rome]. The Treaty of Rome established the European Economic Community of twelve Member States. See *supra* note 3.

European Commission (Commission)<sup>185</sup> recognized the lack of uniformity of copyright protection for computer programs in contravention of the goal of a harmonized EC and issued the Green Paper discussing the major problems of copyright protection.<sup>186</sup> The Green Paper analyzed the effect of technological progress on copyright issues from an EC standpoint.<sup>187</sup> Specifically, the Green Paper recognized the shift in economic activities away from the production of goods such as staple commodities toward the production of technological goods.<sup>188</sup> The Commission proposed a system of copyright protection for computer programs as literary works and requested comments to its proposal in anticipation of the Proposed Directive.<sup>189</sup> The objectives of the Green Paper proposal were to harmonize the divergent laws regarding computer protection among the Member States and to promote the economic importance of computer software to the EC's industrial and technological development.<sup>190</sup>

In January 1989, the Commission presented its Proposed Directive to the Council.<sup>191</sup> On October 18, 1989, the Economic and Social Committee approved the Proposed Directive by delivering an opinion (with suggested changes) on the proposal.<sup>192</sup> After a series of discussions the European Parliament voted in support of the Proposed Directive, as amended by Parliament, on July 11, 1990.<sup>193</sup> Taking the opinion of Parliament into account, the Commission presented an amended proposal to the Council of European Ministers.<sup>194</sup> The Council adopted the Directive on May 14, 1991, culminating the legislative process that spanned three years.<sup>195</sup>

## A. ARTICLE 1—OBJECT OF PROTECTION

### 1. *Literary Works*

Article 1(1) of the Council Directive provides that computer programs are to be protected by copyright as literary works within the meaning of the Berne

185. The European Community is comprised of four governing bodies which share executive, legislative and judicial roles: the Commission, Council of Ministers (Council), European Parliament, and Court of Justice. Colyvas, *supra* note 2, at 501-03.

186. See Green Paper, *supra* note 5, at 171, 178-79.

187. *Id.* ch. 5.

188. *Id.* at 2.

189. *Id.* at 200.

190. *Id.* at 171, 175.

191. Proposed Directive, *supra* note 14.

192. Economic and Social Committee Opinion on the Proposal for a Council Directive on the Legal Protection of Computer Programs, 1989 O.J. (C 329) 4 [hereinafter Economic and Social Committee Opinion].

193. Proposal for a Council Directive on the Legal Protection of Computer Programs, COM(88)816 final [hereinafter European Parliament Proposed Amendments].

194. Amended Proposal for a Council Directive on the Legal Protection of Computer Programs, 1990 O.J. (C 320) 22.

195. Council Directive, *supra* note 1.

Convention.<sup>196</sup> The Proposed Directive did not include the reference to the Berne Convention.<sup>197</sup> The reference was added in conformity with the opinion of the European Parliament to clarify that the protection of computer programs is within the scope of the international convention.<sup>198</sup> The preamble to the Council Directive also provides that the Berne Convention provisions must be complied with on points not addressed by the Council Directive.<sup>199</sup>

Originally, the Proposed Directive expressly declined to define computer program to avoid obsolescence after technology changes the nature of programs.<sup>200</sup> Notwithstanding, the Council Directive broadly defines computer program to "include programs in any form including those which are incorporated into hardware . . . [and also includes] preparatory design material leading to the development of a computer program."<sup>201</sup> The Council Directive protects preparatory design material<sup>202</sup> only to the extent that a computer program can result from it at a later stage; thus, protection as preparatory design material is a fact-sensitive determination.<sup>203</sup>

The definition of computer program provided in the Council Directive provides little guidance as to what actually constitutes a computer program for purposes of protectability. As a result, the definition is subject to different interpretations by Member States. However, the specific inclusion of preparatory design materials in the definition does reduce one possible difference in interpretation by the Member States. France already extends copyright protection to flowcharts of computer programs and to source code listings.<sup>204</sup>

## 2. Idea/Expression Dichotomy

Article 1(2) preserves the idea/expression dichotomy principle of copyright law.<sup>205</sup> Ideas and principles that underlie any element of a computer program, including interfaces, are not protected by copyright.<sup>206</sup> Copyright protects only

196. Council Directive, *supra* note 1; see *supra* notes 52-60 and accompanying text.

197. See Proposed Directive, *supra* note 14, art. 1.

198. See European Parliament Proposed Amendments, *supra* note 193, at 78. The Economic and Social Committee also recommended the addition of the reference to the Berne Convention. Economic and Social Committee Opinion, *supra* note 192, pt. 3.3.1, at 5.

199. Council Directive, *supra* note 1, pmbl. cl. 33, at 44.

200. Proposed Directive, *supra* note 14, at 9 (Part Two: Particular Provisions).

201. Council Directive, *supra* note 1, pmbl. cl. 11, at 42.

202. Preparatory design material includes items "such as flowcharts or descriptions of sequences of steps in plain language. . . ." Proposed Directive, *supra* note 14, at 9 (Commission's discussion of particular articles in the Proposed Directive). However, materials such as user manuals or maintenance manuals are not considered to be preparatory design material, except where substantial parts of the computer program are reproduced therein. *Id.*

203. *Id.*

204. See *supra* note 119 and accompanying text.

205. Council Directive, *supra* note 1, at 44. "[T]o the extent that logic, algorithms, and programming languages comprise ideas and principles, those ideas and principles are not protected under [the Council] Directive." *Id.* pmbl. cl. 18, at 43.

206. Council Directive, *supra* note 1, pmbl. cl. 17, at 43.

the expression of those ideas, but does not give a monopoly in the idea itself.<sup>207</sup>

The text of the Council Directive clearly indicates that the copyright principle is to be applied to every part of a computer program.<sup>208</sup> Such language is capable of being interpreted across a broad range of situations. Apparently ideas within the program itself, as well as the function or overall purpose of the program, are not protected.<sup>209</sup> How this reading of the Directive's language comports with *Whelan's* general rule, which provides copyright protection for everything not necessary to a program's function or purpose, is unclear.<sup>210</sup> The text appears to proceed at a deeper level of analysis than *Whelan*, protecting the program's inner ideas.<sup>211</sup> Of course, some commentators have interpreted *Whelan* to proceed also at a micro level.<sup>212</sup> The text of article 1(2) lends itself to further development by the courts and to possible establishment of divergent standards by the Member States.

### 3. Originality

The Proposed Directive indicated that a computer program had to satisfy the normal criteria for originality afforded other literary works.<sup>213</sup> This vague definition of originality engendered concern that it would perpetuate existing divergencies regarding the eligibility threshold for copyright protection.<sup>214</sup> Thus, the Council Directive clarified the standard of originality to require only that the computer program be the "author's own intellectual creation."<sup>215</sup>

Additionally, the Council Directive expressly states that no other criteria, such as the qualitative or aesthetic merits of the computer program, shall be applied to determine eligibility.<sup>216</sup> In keeping with traditional copyright law, the Council Directive apparently requires only a minimal level of originality.<sup>217</sup> Germany's "clearly above average" standard for originality diverges from the minimal requirements of the Council Directive. Thus, Germany will likely have to redefine its originality standard to conform to the Council Directive.<sup>218</sup> The other Member States appear to require only minimal originality in conformity with the Council Directive.

207. See *supra* text accompanying notes 31-51.

208. See *supra* note 201.

209. Cf. *supra* text accompanying notes 31-51.

210. See *supra* note 40 and accompanying text.

211. *Id.*

212. See *supra* note 50 and accompanying text.

213. Proposed Directive, *supra* note 14, art. 1(2), at 13.

214. Council of European Community Issues Amended Proposal for Software Protection Directive, SOFTWARE PROTECTION, Oct. 1990, at 2, 4 [hereinafter *Amended Proposal*].

215. Council Directive, *supra* note 1, art. 1(3), at 44.

216. Council Directive, *supra* note 1, pmbl. cl. 12, at 42.

217. The intention of the Council Directive is to avoid the application of patent-like criteria in determining originality. See *supra* note 15 and accompanying text.

218. See *supra* note 87 and accompanying text.

#### 4. Computer-Generated Programs

Finally, the Council Directive deleted the Proposed Directive's provision expressly allowing copyright protection for computer-generated programs.<sup>219</sup> The Council deemed it premature to regulate this aspect of software protection because whether use of another computer gives the user the qualities of an author is questionable.<sup>220</sup> Since the Council Directive is silent on this matter, divergence may continue to exist among the Member States regarding such protection. The United Kingdom extends copyright protection to computer-generated programs.<sup>221</sup>

#### B. ARTICLE 2—AUTHORSHIP OF COMPUTER PROGRAMS

The Council Directive recognizes that the author of a program can be the natural person or group of natural persons who created the program.<sup>222</sup> A group of natural persons that creates a program owns the program jointly.<sup>223</sup> Additionally, a legal person designated as the legal right holder may be recognized as the author if the Member State permits.<sup>224</sup> The Council Directive also clarifies that the employer of an employee who creates a program while acting as an employee or under the instructions of the employer is entitled to the economic rights in the program.<sup>225</sup> However, a contract can modify the employer's rights.<sup>226</sup> The use of the term "economic" when referring to the rights of the employer clarifies that the employee retains the paternity rights to the program.<sup>227</sup> Belgium, Germany, and Italy provide that the author/employee is the right holder, but each state also assumes a tacit conveyance of the rights to the employer.<sup>228</sup> This arrangement seems to conform to the substance of the Council Directive.

The Proposed Directive included a provision addressing commissioned works that entitled the legal person who commissioned the program to exercise ownership rights in the program, unless otherwise provided.<sup>229</sup> This proposal was consis-

219. Proposed Directive, *supra* note 14, art. 1(4)(b), at 13; *cf.* Council Directive, *supra* note 1, art. 1, at 44.

220. Andre Lucas, *Copyright in the European Community: The Green Paper and the Proposal for a Directive Concerning Legal Protection of Computer Programs*, 29 COLUM. J. TRANSNAT'L L. 145, 158 (1991).

221. See *supra* note 173 and accompanying text.

222. Council Directive, *supra* note 1, art. 2(1), at 44.

223. *Id.* art. 2(2), at 44.

224. *Id.* art. 2(1), at 44.

225. *Id.* art. 2(3), at 44.

226. *Id.*

227. Proposed Directive, *supra* note 14, at 10. The Commission intended in the Proposed Directive that the author/employee retain paternity rights, such as the right to maintain the integrity of the work, to a computer program created as an employee. *Id.* The addition of the term "economic" clarifies the original intent of the Commission. *Id.* art. 1(2), at 13.

228. See *supra* text accompanying notes 68, 93-94, and 140.

229. Proposed Directive, *supra* note 14, art. 2(3), at 14.

tent with the U.S. "work for hire" doctrine.<sup>230</sup> However, the proposal met with criticism from the United Kingdom, which does not include the doctrine in its copyright law, and was deleted from the Council Directive.<sup>231</sup> In the United Kingdom, the creator of the program owns the copyright regardless of whether the work is commissioned.<sup>232</sup> The effect of the deletion of this proposal is that each Member State will make its own determination as to who owns commissioned works.<sup>233</sup>

### C. ARTICLE 3—BENEFICIARIES OF PROTECTION

The Council Directive extends copyright protection to all persons eligible under national copyright legislation as applied to literary works.<sup>234</sup> Eligibility for protection arises out of nationality or residence in the case of natural persons, or by having a real and effective presence in a Member State in the case of legal persons.<sup>235</sup> Additionally, Member States afford authors protection on the basis of first publication of a computer program if the Member State's domestic laws so provide.<sup>236</sup> Thus, the Council Directive affords the principle of national treatment under the Berne Convention for literary works to authors of computer programs.<sup>237</sup>

The Proposed Directive included a provision extending protection to all members of a group of natural persons who created a program jointly if at least one author was eligible for protection under the national copyright legislation as applied to literary works.<sup>238</sup> By doing so, the Commission extended protection to programmers from countries not members of the Berne Convention.<sup>239</sup> However, the Council Directive deleted this provision.<sup>240</sup> One commentator warned that the proposed provision could possibly result in benefits to programmers from countries notorious for piracy.<sup>241</sup> By deletion, the Council apparently chose to limit the availability of nonmember protection to the extent provided by the Berne Convention itself.

230. 17 U.S.C. §§ 101, 201(b) (1988); Donald G. Jerrard, *Latest Developments in the Computer and Software Industry in Europe*, SOFTWARE PROTECTION, Nov.-Dec. 1990, at 3, 6.

231. Jerrard, *supra* note 230.

232. *Id.*

233. *Id.*

234. Council Directive, *supra* note 1, art. 3, at 44.

235. Proposed Directive, *supra* note 14, at 10.

236. *Id.*

237. See Berne Convention, *supra* note 52. Article 5(1) of the Berne Convention states: Authors shall enjoy, in respect of works for which they are protected under this Convention, in countries of the Union other than the country of origin, the rights which their respective laws do now or may hereafter grant to their nationals, as well as the rights specially granted by this Convention.

*Id.* In other words, works which have a country of origin that is a member of the Berne Convention, benefit in all other member countries from the same protection as the latter gives to the works of their own nationals. See also Proposed Directive, *supra* note 14, at 10.

238. Proposed Directive, *supra* note 14, art. 3(2), at 14.

239. *Id.* at 10.

240. See Council Directive, *supra* note 1, art. 3.

241. See Meijboom, *supra* note 3, at 436.

## D. ARTICLE 4—EXCLUSIVE RIGHTS OF THE RIGHT HOLDER

Subject to the exceptions provided in articles 5 and 6, the right holder has three exclusive rights: reproduction, translation and adaptation, and distribution.<sup>242</sup> Reproduction by any means of a computer program or a part thereof is prohibited without right holder authorization.<sup>243</sup> Article 4 explicitly states that any copying necessary for loading, displaying, running, transmitting, or storing the computer program is subject to authorization by the right holder.<sup>244</sup> This expands the meaning of reproduction to clarify the rights of the right holder. By including this provision, the Commission recognized that these acts, which under current technology require the reproduction of the computer program, infringe on the right holder's rights.<sup>245</sup> The language allows for the future possibility that programs will be fixed on a chip (or other media), which can be installed in the computer, without the need to reproduce the computer program.<sup>246</sup>

The translation, adaptation, arrangement, and any other alteration of a computer program is expressly prohibited without the authorization of the right holder.<sup>247</sup> The council Directive changed the language of the Proposed Directive to conform to the language of the Berne Convention.<sup>248</sup> Only "adaptation," which was defined as including translation, was originally expressly prohibited in the Proposed Directive.<sup>249</sup> Substantively, the provision has remained the same despite the language change.<sup>250</sup>

Additionally, the Council Directive requires permission from the right holder for "any form of distribution to the public."<sup>251</sup> The Council Directive limits this right to the first sale of a copy of a program in the EC; the right holder's distribution rights are then exhausted for that copy.<sup>252</sup> The sale can be made either by the right holder or by anyone to whom the right holder has given consent to sell the copy of the program.<sup>253</sup> Originally, the Proposed Directive identified particular forms

242. Council Directive, *supra* note 1, art. 4, at 44.

243. *Id.* art. 4(a).

244. *Id.*

245. Proposed Directive, *supra* note 14, at 10–11.

246. *Id.*

247. Council Directive, *supra* note 1, art. 4(b), at 44.

248. The Berne Convention provides similar language in articles 8, 9, and 12. Berne Convention, *supra* note 52.

249. Proposed Directive, *supra* note 14, art. 4(b), at 14. "Adaptation of a literary work normally implies transformation of a given text such as a novel into another literary 'genre' such as a play [; whereas,] [t]ranslation of a literary work is normally done from one human language into another." *Id.* at 11.

250. *Amended Proposal*, *supra* note 214, at 5.

251. Council Directive, *supra* note 14, art. 4(c), at 44.

252. *Id.* Distribution rights may be exercised with respect to the initial sale of a copy of a copyrighted work, but such right may not be invoked so as to prevent or restrict the resale or other further transfer of possession of such copy. See 2 NIMMER ON COPYRIGHT, *supra* note 33, § 8.12[B][1]. The distribution right of the copyright owner is said to be exhausted for that particular copy; consent is no longer a prerequisite for subsequent transfers. *Id.*

253. *Id.*

of distribution, which greatly limited the applicability to future developments in distribution of software.<sup>254</sup> The broad language of the Council Directive ensures control by the right holder over any form of distribution and adds much flexibility by allowing the adaptation of the provision to changing forms of distribution.

The right holder retains control over the rental<sup>255</sup> of the program or a copy thereof even after the first sale.<sup>256</sup> This exception to the first distribution limitation strengthens the monopoly position of the right holder. The Commission considers the rental of a computer program to be highly prejudicial to the right holder's economic interest because the rental of a program is typically for a nominal charge and lends itself to infringement by users who can make a copy of the program.<sup>257</sup> Such infringement is obviously virtually impossible to prevent. Thus, the Council Directive affords the right holder's economic interest greater protection.

#### ARTICLE 5—EXCEPTIONS TO EXCLUSIVE RIGHTS OF RIGHT HOLDER

Notwithstanding articles 4(a) and (b), the lawful acquirer has the right to perform acts necessary for the use of the computer program in accordance with its intended purpose without authorization by the right holder.<sup>258</sup> The provision explicitly makes clear that this right includes error correction.<sup>259</sup> Additionally, the language indicates that if a person has the right to use a computer program, the right must include at least the ability to load and run the program.<sup>260</sup> This interpretation is supported by preamble clause 22, which expressly states that the lawful acquirer has such specific rights as loading and running the program.<sup>261</sup>

Preamble clause 22 states that such rights, including the right of error correction, cannot be prohibited by contract.<sup>262</sup> However, article 5(1) prefaces the rights of error correction and loading and running the program with the phrase "in the absence of specific contractual provisions."<sup>263</sup> At first reading, preamble clause 22 and the foregoing phrase seem to be contradictory. Based on article 5(1), the right holder seemingly could require the lawful acquirer to obtain authorization to perform such acts despite the exception. On the other hand, preamble clause 22 specifically states that error correction and loading and running the program "may not be prohibited by contract."<sup>264</sup> That the right holder could limit the article 5(1) exception in this manner is difficult to imagine; a program cannot be

254. Proposed Directive, *supra* note 14, art. 4(c).

255. "[T]he term rental means making available for use, for a limited period of time and for profit-making purposes." Council Directive, *supra* note 1, pmbl. cl. 20, at 43.

256. *Id.* art. 4(c), at 44.

257. Proposed Directive, *supra* note 14, art. 4, at 11.

258. Council Directive, *supra* note 1, art. 5(1), at 44.

259. *Id.*

260. *Id.*

261. *Id.* pmbl. cls. 21, 22, at 43.

262. *Id.*

263. Council Directive, *supra* note 1, art. 5(1), at 44.

264. *Id.*, pmbl. cl. 22, at 43.

used without loading and running it. Perhaps, article 5(1) merely means that the right holder has the right to control by contract the circumstances in which those acts are to be performed.<sup>265</sup> For example, the right holder may be able to limit the use of the program to a specific machine or impose similar restrictions.<sup>266</sup> This explanation would reconcile article 5(1) and preamble clause 22.

Article 5 also authorizes a person with a right to use the computer program to make a backup copy if necessary for use.<sup>267</sup> The provision clearly indicates that making such backup copies cannot be prevented by contract.<sup>268</sup> Finally, the Council Directive entitles persons having a right to use a copy of a program to "observe, study, or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program."<sup>269</sup> The Council Directive does not require prior authorization before performing such testing, but such testing must be done "while performing any of the acts of loading, displaying, running, transmitting, or storing the program which he is entitled to do."<sup>270</sup> Preamble clause 30 states that testing cannot be prevented by contract; any contrary contractual provisions are "null and void."<sup>271</sup> Clearly a person who has a right to use a program can study how the program functions.<sup>272</sup> As noted previously, the user will at least be entitled to load and run the program in accordance with its intended purpose, and can study the program at this time.<sup>273</sup> Contractual provisions may entitle the user to perform such acts as displaying or transmitting, at which time the user would also be allowed to study the functions of the program.<sup>274</sup> However, the user is limited to studying the functions of the program only for the acts he or she is entitled to perform.<sup>275</sup>

The Council Directive limits the right to perform acts necessary to use a computer program to the "lawful acquirer," while the right to make backup copies and to study the functions of the program may be performed by any "person having the right to use a copy" of the program.<sup>276</sup> The Council Directive does not define the phrases "lawful acquirer" and "person having a right to use a copy."<sup>277</sup> Identifying the parties to which this terminology refers is difficult.

265. *Amended Proposal*, *supra* note 214, at 5.

266. *Id.*

267. Council Directive, *supra* note 1, art. 5(2), at 44.

268. *Id.*

269. *Id.* art. 5(3), at 45.

270. *Id.*

271. Council Directive, *supra* note 1, pmbl. cl. 30, at 43.

272. *Amended Proposal*, *supra* note 214, at 5.

273. *Id.*

274. See Council Directive, *supra* note 1, art. 5(1), at 44. Article 5(1) expressly indicates that the statute may be modified by agreement to permit the performance of some acts, which normally require authorization by the right holder, without authorization by the right holder. *Id.*

275. *Id.* art. 5(3), at 45.

276. See Council Directive, *supra* note 1, art. 5, at 44-45.

277. These terms are only used in articles 5 and 6 of the Council Directive, which indicate the acts a computer program user can perform without the authorization of the right holder.

Presumably, the "lawful acquirer" is the narrower term and would include only purchasers and licensees. A "person having the right to use a copy" of the program may, in addition to the lawful acquirer, also include employees and independent contractors of the lawful acquirer, for example. However, the exact meaning of such language is unclear from the text of the Council Directive.

#### F. ARTICLE 6—REVERSE ENGINEERING

The Council Directive now provides a limited opportunity for the use of reverse engineering to achieve interoperability of independent computer programs.<sup>278</sup> Throughout the discussions and debates leading to the adoption of the Council Directive, the main point of contention was whether reverse engineering should be allowed, and, if allowed, to what extent.<sup>279</sup> The Proposed Directive made no reference to reverse engineering. Effectively, however, the Proposed Directive prohibited reverse engineering because any translation or adaptation was a copyright infringement.<sup>280</sup>

Three divergent interest groups lobbied the Commission regarding the reverse engineering issue: users, protectionist businesses, and unrestricted competition businesses. The Computer Users of Europe (CUE) lobbied in favor of reverse engineering, arguing that the Proposed Directive provided too much protection to the copyright holders.<sup>281</sup> The CUE "want[ed] the freedom . . . to mix and match both hardware and software from different suppliers" in the interest of lower cost and greater efficiency.<sup>282</sup>

On the other hand, the Software Action Group for Europe (SAGE)<sup>283</sup> opposed extensive reverse engineering rights. SAGE lobbied for strong software protection

278. Council Directive, *supra* note 1, art. 6, at 45.

279. See *infra* notes 290–300 and accompanying text.

280. See Proposed Directive, *supra* note 14, art. 4, at 14. "[D]ecompiling a software product involves copying and translating it, acts which constitute an infringement of copyright in the program if undertaken without the permission of the copyright owner." Jerrard, *supra* note 230, at 7.

281. BENDER, *supra* note 71, § 3B.04[9A]; *Debate Over Scope of Computer Software Protection*, MONTHLY REPORT ON EUROPE, Feb. 1990, at 4.

282. Richard Christou, *The EEC Directive for Legal Protection of Computer Programs*, 134 SOLICITORS JOURNAL 1342 (1990).

283. SAGE is comprised of approximately 200 members including IBM, Digital Equipment Corporation, Apple, and the Business Software Alliance (BSA). BENDER, *supra* note 71, § 3B.04[9A]. BSA is comprised of 650 publishers of worldwide business software, including Aldus, Ashton-Tate, Autodesk, Digital Research, Lotus Development, Microsoft, WordPerfect, and XTree. Styracula, *supra* note 9, at 343. SAGE was concerned with the possibility of widespread proliferation of piracy if a broad reverse engineering provision was adopted. BENDER, *supra* note 71, § 3B.04[9A]. SAGE especially was concerned with the large Japanese hardware companies, which to date have been relatively unsuccessful in the computer software market. Louise Kehoe, *Battle Joined on Computer Copyright*, FINANCIAL TIMES, Jan. 24, 1990, at 6 (discusses effect of reverse engineering on Japanese competition generally); John W. Verity, *Defense Against Pirates or Death to the Clones*, BUSINESS WEEK, May 7, 1990, at 138.

to preserve the already large market of SAGE members.<sup>284</sup> A central argument against reverse engineering was that it would undermine the objective of clear and effective copyright protection for computer programs by encouraging the development of alternate technical measures and resulting in more expensive, less user-friendly software.<sup>285</sup>

Another group, the European Committee for Interoperable Systems (ECIS),<sup>286</sup> lobbied for a broad reverse engineering provision.<sup>287</sup> This group is comprised of smaller European vendors who rely on reverse engineering rights to avoid exclusion from the market by the dominant companies.<sup>288</sup> ECIS was concerned that the original Proposed Directive would limit the competitive supply of compatible and interoperable computer products unless two special exceptions were incorporated: no protection for interface specifications and permission to engage in reverse analysis.<sup>289</sup> ECIS favored the compromise provision suggested by the European Parliament,<sup>290</sup> which would allow limited reverse engineering rights to allow for interoperability, as opposed to a United Kingdom proposal, which would exclude Europeans from approximately 50 percent of the hardware market.<sup>291</sup> The compromise provision allowing reverse engineering in limited circumstances was considered necessary to enable the independent software producer to obtain the interface specifications required to produce compatible programs.<sup>292</sup>

Article 6 in the Council Directive embodies a compromise between the opposing interest groups, allowing reverse engineering to achieve interoperability in limited circumstances.<sup>293</sup> Effectively, the provision balances the protectionist interests of groups such as SAGE and the open competition interests of CUE and ECIS.<sup>294</sup> Article 6 seeks to encourage the development of "interoperable" programs by limiting the ability of creators of original programs to hold a monopoly on a range of computer programs.<sup>295</sup> For instance, without article 6, a creator of an original program could create a monopoly by withholding interoperability information

284. Andrew Christie, *Science and Technology: It May Be Compatible, but Is It Legal?: Andrew Christie Looks at Europe's Move to Copyright Computer Software*, THE INDEPENDENT, June 24, 1991, at 20.

285. BENDER, *supra* note 71, § 3B.04[9A].

286. ECIS is comprised of fifty software and hardware companies such as Amdahl, Fujitsu, NCR, and Unisys. Verity, *supra* note 283, at 138. ECIS claims that there is no real risk of Japanese piracy which is feared by SAGE. *Debate Over Scope of Computer Software Protection*, *supra* note 281, at 4.

287. BENDER, *supra* note 71, § 3B.04[9A].

288. *Id.*

289. *Id.*

290. The amendment proposed by the European Parliament is fundamentally similar to article 6 of the Council Directive.

291. BENDER, *supra* note 71, § 3B.04[9A]. The U.K. proposal would have permitted reverse engineering only to achieve interoperability with the original program.

292. *See id.*

293. Council Directive, *supra* note 1, art. 6, at 45.

294. *See supra* notes 281-91 and accompanying text.

295. *Amended Proposal*, *supra* note 214, at 6.

from competitors, ensuring that only the creator could supply additional computer programs interoperable with the original computer program.<sup>296</sup>

Article 6 provides that a person having a right to use a copy of a program may perform acts of reproduction and translation of the program's literal code without authorization of the right holder,<sup>297</sup> but only when they are "indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs."<sup>298</sup> The reference to "indispensable" in article 6(1) is intended to mean that decompilation is the last resort.<sup>299</sup> Thus, prior to utilizing this exception, the developer must show that information necessary to achieve interoperability has not previously been made readily available.<sup>300</sup> Such a showing includes evidence of public unavailability, refusal by the creator of the original program to divulge the information, and the absence of another way to discover this information other than by decompilation.<sup>301</sup> Article 6 obviously favors the interests of SAGE.<sup>302</sup>

Article 6 clearly limits decompilation to the parts of the original program necessary to achieve interoperability. Considering the purpose of article 6, such a limitation is reasonable; but enforcement of such a limitation will be difficult. By not divulging the information necessary for interoperability, the creator of the original program will force companies to incur the high cost of decompilation.<sup>303</sup> At the same time, by not divulging the information, the creator runs the risk that others will more readily decompile the entire program since they already have to do so to achieve interoperability. Once a developer begins decompilation, the creator has little possibility of preventing the decompilation of the entire program. This decompilation exception seems open to abuse, and could be used as a defense to justify acts of unauthorized copying and piracy.<sup>304</sup> Thus, litigation will likely define the limits of this exception.

As a final note, article 6 also clearly indicates that information derived from decompilation cannot be provided to others except when necessary to achieve the interoperability of the independently created program.<sup>305</sup> Article 6 also expressly disallows decompilation for the development, production, or marketing of a computer program "substantially similar" in its expression.<sup>306</sup> Use of the term "substantially similar" without defining its meaning provides the possibility that Member States will develop different substantial similarity standards, thus perpetuating

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296. *Id.*

297. Council Directive, *supra* note 1, art. 6(1), at 45.

298. *Id.*

299. Jerrard, *supra* note 230, at 7.

300. Council Directive, *supra* note 1, art. 6(1)(b), at 45.

301. Jerrard, *supra* note 230, at 7.

302. See *supra* notes 283-85 and accompanying text.

303. See *Debate Over Scope of Computer Software Protection*, *supra* note 281.

304. See BENDER, *supra* note 71, § 3B.04.

305. Council Directive, *supra* note 1, art. 6(2)(b), at 45.

306. *Id.* art. 6(2)(c), at 45.

varying protection among the Member States. As noted previously, the U.S. courts and commentators are still debating the proper approach for determining whether two programs are substantially similar.<sup>307</sup>

#### G. ARTICLE 7—SPECIAL MEASURES OF PROTECTION

To ensure that right holders have strong exclusive rights over their computer programs, article 7 provides for infringement actions against persons who know or should know they put an infringing copy of a computer program into circulation.<sup>308</sup> By using the term "circulation," the provision flexibly encompasses physical as well as electronic transfers of a computer program.<sup>309</sup> Additionally, possession of an infringing copy is actionable if the possessor uses the copy for commercial purposes and the possessor knew or should have known that the copy infringed a copyright.<sup>310</sup> Actions for circulation of an infringing copy program include programs used for commercial and other purposes since no particular distinction is made, whereas actions for possession are limited to possession of infringing copies for commercial purposes.<sup>311</sup>

Article 7 also provides a novel form of secondary infringement action. Any act of circulation or possession for commercial purposes of "any means," whose sole intended purpose is to facilitate the unauthorized removal or circumvention of technical devices used to protect a computer program, is secondary infringement.<sup>312</sup> Again, the language broadly includes such acts of circulation as sale of devices or simply communicating the information necessary for circumvention or removal of protection systems.<sup>313</sup> The enforcement of this provision could lead to legal uncertainty. For example, one commentator noted that the author of a book "which describes technical protection of computer programs may facilitate the implementation of protection for one person and the circumvention of protection for the other."<sup>314</sup> This presents the question of whether the book's author infringed the copyright of a right holder because some readers used the book to circumvent the protection devices.<sup>315</sup> Perhaps since the sole intended purpose of the book was not circumvention, the author did not infringe on the copyright.

307. See *supra* notes 36–51 and accompanying text.

308. Council Directive, *supra* note 1, art. 7(1), at 45.

309. Proposed Directive, *supra* note 14, art. 6, at 12.

310. Council Directive, *supra* note 1, art. 7(1)(c), at 45.

311. The phrase "commercial purposes" is specifically included in article provision 7(1)(b); however, it is not included in article provision 7(1)(a). Applying the rules of statutory construction, if the Commission had intended that circulation of an infringing copy be limited to commercial purposes, it would have so indicated. See Council Directive, *supra* note 1, art. 7, at 45.

312. Council Directive, *supra* note 1, art. 7(1)(c), at 45.

313. Proposed Directive, *supra* note 14, art. 6, at 12.

314. Meijboom, *supra* note 3, at 440.

315. *Id.*

Regardless of the outcome, this example illustrates the difficulty in applying this provision and the possibility for ridiculous outcomes.<sup>316</sup>

Any infringing copy of a computer program and any means used to circumvent technical protection devices are subject to seizure in accordance with the legislation of the Member State concerned.<sup>317</sup> This provision encompasses innocent copyright infringement as well as cases in which the infringer knew or should have known of the infringement.<sup>318</sup> The Proposed Directive did not include such provision.

#### H. ARTICLE 8—DURATION

In accordance with the Berne Convention and traditional copyright law, the Council Directive grants protection for the life of the author plus fifty years after the author's death or, in the case of multiple authors, after the death of the last surviving author.<sup>319</sup> The Council Directive affords anonymous or pseudonymous computer programs or legal persons designated as authors by national legislation protection for fifty years from the time the computer program is first made available to the public.<sup>320</sup> Since France provides copyright protection for only twenty-five years from the date of creation, it will have to conform its copyright law to the Council Directive.

The Council Directive allows Member States with duration terms longer than fifty years to continue the use of the longer term.<sup>321</sup> This provision would specifically apply to Germany, which has a seventy-year duration for copyright protection. The Proposed Directive provided protection for fifty years from the date of creation.<sup>322</sup> The Council Directive altered this duration period due to the uncertainty of determining the date of creation and to conform to the Berne Convention.<sup>323</sup>

#### IV. Conclusion

Comprehensive legislation is necessary to protect the already immense investments in the development of computer programs and to promote the creation of high-quality software. By providing a framework for uniform protection of computer programs, the EC has taken another step in its march toward harmonization and the development of a common European market for computer software.

316. *Id.*

317. Council Directive, *supra* note 1, art. 7(2), at 45.

318. Article 7(2) expressly states that "any infringing copy" is subject to seizure. See Council Directive, *supra* note 1, art. 7(2), at 45. The scienter of the possessor is not a necessary element to the right to seize such an infringing copy. Thus, an innocent possessor is subject to seizure. *Id.*

319. Council Directive, *supra* note 1, art. 8(1), at 45.

320. *Id.*

321. *Id.* art. 8(2), at 45.

322. Proposed Directive, *supra* note 14, art. 7, at 12.

323. Berne Convention, *supra* note 52, art. 7.

Ultimately, however, the contours of software protection in the EC will depend on the sentiment of the Member States and the legislation each state enacts to implement the Council Directive.

Fundamentally, the Council Directive will successfully provide a framework for computer software protection. Inevitably though, the vagaries and lapses of the Council Directive will result in a lack of complete uniformity among the Member States. For instance, some states will choose to provide protection for computer-generated programs, whereas others will not. The Council Directive is silent on this matter. One thing is certain, court battles will play a large role in fleshing out the protection afforded computer software in the EC. The Council Directive is only the beginning.