

No. 99-81

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IN THE  
SUPREME COURT OF THE UNITED STATES

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PULSE COMMUNICATIONS, INC.,

*Petitioner,*

v.

DSC COMMUNICATIONS CORP.,

*Respondent.*

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On Petition for Writ of Certiorari to the United  
States Court of Appeals for the Federal Circuit

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MOTION FOR LEAVE TO FILE BRIEF AMICUS  
CURIAE AND BRIEF AMICUS CURIAE OF  
COMPUTER & COMMUNICATIONS INDUSTRY  
ASSOCIATION IN SUPPORT OF PETITIONER

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**BRIEF AMICUS CURIAE OF COMPUTER &  
COMMUNICATIONS INDUSTRY ASSOCIATION  
IN SUPPORT OF PETITIONER**

Computer & Communications Industry Association (“CCIA”) submits this brief as *amicus curiae* and respectfully requests that the Petition for a Writ of Certiorari be granted. Petitioner Pulse Communications has consented to the filing of this brief, and its letter of consent is being filed herewith. Respondent DSC Communications has not consented to this filing.

**INTEREST OF AMICUS**

CCIA members participate in many sectors of the computer, information technology, and telecommunications industry and range in size from small entrepreneurial firms to the largest in the industry.<sup>1</sup> CCIA members believe that computer programs deserve effective intellectual property protection to give developers sufficient incentive to create new programs. At the same time, CCIA is concerned that improper extension of copyright law will impede innovation and inhibit fair competition in the computer industry. CCIA

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<sup>1</sup> Counsel for a party did not author this brief in whole or in part. No person or entity other than CCIA, its members, or its counsel made a monetary contribution to the preparation or submission of this brief. CCIA members include: Amdahl Corporation, AT&T Corporation, Bell Atlantic Corporation, Block Financial Corp., CAI/SISCO, Commercial Data Servers, Inc., CommonRoad Corporation, Entegriety Solutions Corporation, Fujitsu Limited, Giga Information Group, Government Sales Consultants, Inc., Hitachi Data Systems, Inc., Intuit, Inc., Leasing Solutions, Inc., MERANT, Netscape Communications Corporation, NOKIA, Nortel Networks, NTT America, Inc., Okidata, Oracle Corporation, RedCreek Communications, Inc., Sabre Inc., Sun Microsystems, Inc., Telesciences, Inc., TSI International Software, Ltd., VeriSign, Inc., Viatel, Inc., ViON Corporation, V-SPAN, Inc., and Yahoo! Inc.

seeks application of legal standards that will effectuate copyright law's fundamental aims by ensuring authors "the right to their original expression," but also encouraging competitors "to build freely upon the ideas and information conveyed by a [copyrighted] work." *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 349-50 (1991).

CCIA has long supported interpreting the copyright laws to permit the copying necessary to develop interoperable products. CCIA filed an *amicus* brief with this Court in *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 516 U.S. 233 (1996), arguing that the U.S. Court of Appeals for the First Circuit correctly withheld copyright protection from the information necessary to achieve interoperability.

Neither CCIA nor its members has a direct financial interest in the outcome of this litigation. However, allowing the Federal Circuit's decision to stand would have serious anti-competitive consequences for CCIA members and the computer industry as a whole. It would render unlawful software development processes used every day by information technology companies from the Silicon Valley on the Pacific Coast to the Research Triangle on the Atlantic Coast.

### **SUMMARY OF ARGUMENT**

The Federal Circuit's narrow interpretation of Section 117 of the Copyright Act endangers the software reverse engineering essential to competition in the computer industry. This brief first addresses the importance of reverse engineering to competition in the computer industry. It then explains that jurisdictions throughout the United States and around the world permit the copying incidental to reverse engineering in order to foster this competition. Finally, the brief discusses how the Federal Circuit's ruling authorizes a

software developer unilaterally to nullify Section 117 and thereby prevent competition.

## **ARGUMENT**

Pulse Communications in its Petition for a Writ of Certiorari describes the confusion in the lower courts concerning the proper interpretation of Section 117 of the Copyright Act. It also explains how this confusion generally, and the Federal Circuit's decision in particular, will harm competition in the computer industry. The Petition observes that the Federal Circuit's parsimonious interpretation of Section 117 will permit firms to "tie" together the sale of different computer products by allowing a firm to insist that the software it wrote be used only in conjunction with its computer products. CCIA agrees with the Petition's analysis of the confused state of Section 117 law, and the anticompetitive dangers flowing from the Federal Circuit's interpretation of Section 117.

The Federal Circuit's interpretation poses an additional danger not identified in the Petition: it would allow a firm unilaterally to prevent the software reverse engineering of its products necessary for the development of competitive products. The balance of this brief discusses the importance of software reverse engineering and how the Federal Circuit's decision will undermine this critical procedure.

### **I. SOFTWARE REVERSE ENGINEERING IS CRITICAL TO COMPETITION AND INNOVATION IN THE COMPUTER INDUSTRY.**

In most copyright industries, there is little relation between intellectual property protection and competition. A film producer, for example, has no justification for copying

from another film (except in certain special cases, such as parody<sup>2</sup>).

Software, however, is different. Unlike a film or novel, which stands by itself, a computer program can function only in conjunction with hardware and other software. For example, an application program, such as a word processor, must work together with an operating system in order to perform its task; otherwise, it is a useless set of magnetic impulses. Two software products can work together—*interoperate*—only if they conform to the same set of rules, or *interface specifications*.

If a company could exercise proprietary control over the interface specifications implemented by its software, that company could determine which products made by other firms could interoperate with its software. And should that company have a dominant position in a particular market, it could use its control over interoperability to expand its dominant position into adjacent markets.

In short, in the software industry, overly broad copyright protection directly restricts competition and innovation. For this reason, U.S. courts in recent years have held that interface specifications fall on the “idea” (or unprotected) side of the idea/expression dichotomy.<sup>3</sup>

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<sup>2</sup> See, e.g., *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994).

<sup>3</sup> See, e.g., *Computer Assocs. Int’l v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992); *Lotus Dev. Corp. v. Borland Int’l, Inc.*, 49 F.3d 807 (1st Cir. 1995), *aff’d by an equally divided Court*, 516 U.S. 233 (1996); *Mitel, Inc. v. Iqtel, Inc.*, 124 F.3d 1366 (10th Cir. 1997); *Sega Enterprises, Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1524-25 (9th Cir. 1992); Jonathan Band & Masanobu Katoh, *Interfaces on Trial*, 131-146 (1995); 1 Paul Goldstein, Copyright § 2.15.2.1-2.15.2.2 (2d ed. 1998).

Significantly, the U.S. government has taken this position in its pending case against Microsoft.<sup>4</sup>

But even though the interface specifications are not protected by copyright, a company seeking to interoperate must still learn what those interface specifications are. Because computer programs typically are distributed to the public in a form readable only by computers, a program's interface specifications usually are not readily apparent. In some instances, the developer of the program may be willing to provide the interface information to other companies. All too often, however, developers are not willing to provide the information on reasonable terms, or the information they provide is tardy or incomplete.<sup>5</sup>

In these cases, the companies seeking to develop interoperable products have no choice but to perform painstaking research on the original program to discern the interface specifications. This research, known as *reverse engineering*, is a basic tool of software product development. Without reverse engineering, interoperability can be difficult, if not impossible, to achieve. This Court has recognized the legitimacy and significance of reverse engineering in other industries. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 160 (1989). It is equally legitimate and significant in this industry.

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<sup>4</sup> See Jonathan Band & Taro Isshiki, *Peace at Last? Executive and Legislative Branch Endorsement of Recent Software Copyright Case Law*, Computer Lawyer, Feb. 1999 at 1.

<sup>5</sup> See, e.g., Jeanette Bozo, *Bristol Has June 1 Date for Microsoft Lawsuit*, InfoWorld Daily News, Jan. 4, 1999; Richard Wolffe, *FTC says Intel Lawsuit 'Vital to Stop Abuse'*, Financial Post, June 18, 1998 at 19.

## II. JURISDICTIONS THROUGHOUT THE WORLD HAVE ADOPTED EXCEPTIONS PERMITTING SOFTWARE REVERSE ENGINEERING.

Because of the nature of computer technology, software reverse engineering almost always requires the making of a reproduction or derivative work. For example, the reverse engineering method known as *disassembly* involves “translating” the publicly distributed, computer readable program into a higher level, human readable form. In another method referred to as *black box reverse engineering*, an engineer observes a program’s behavior and interaction with its environment while executing the program on a computer.<sup>6</sup> The computer automatically makes copies of the program in its Random Access Memory (RAM) in order to run the program.

No less than five U.S. courts have permitted reproduction during the course of software reverse engineering under the “fair use doctrine” -- including the Federal Circuit.<sup>7</sup> Other courts have prevented enforcement under a copyright misuse theory.<sup>8</sup> Moreover, the Digital

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<sup>6</sup> Engineers refer to this method as black box reverse engineering because the externally visible characteristics of the program are observed without looking into the program itself; the actual contents of the program remain unknown.

<sup>7</sup> *Atari Games Corp. v. Nintendo of America, Inc.*, 975 F.2d 832 (Fed. Cir. 1992); *Sega Enterprises, Ltd., v. Accolade, Inc.*, 977 F.2d 1510 (9th Circuit 1992); *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532 (11th Cir. 1996); *DSC Communications Corp. v. DGI Techs.*, 898 F. Supp. 1183 (N.D. Tex. 1995), *aff’d*, 81 F.3d 597 (5th Cir. 1996); *DSC Communications Corp. v. Pulse Communications, Inc.*, 976 F. Supp. 359 (E.D. Va. 1997), *aff’d in part, rev’d in part, and vacated in part*, 170 F.3d 1354 (Fed. Cir. 1999).

<sup>8</sup> *DSC Communications Corp. v. DGI Techs.*, 81 F.3d 597 (5th Cir. 1996); *Alcatel U.S.A., Inc. v. DGI Techs., Inc.*, 166 F.3d 772 (5th Cir. 1999).

Millennium Copyright Act (DMCA), legislation enacted by Congress in 1998 to implement the World Intellectual Property Organization Copyright and Performances and Phonograms Treaties, permits the circumvention of technological protections for the purpose of engaging in software reverse engineering. 17 U.S.C. § 1201(f).<sup>9</sup> The Senate Judiciary Committee Report states that this exception is “intended to allow legitimate software developers to continue engaging in certain activities for the purpose of achieving interoperability to the extent permitted by law prior to the enactment of this chapter.”<sup>10</sup> The Report adds that the exception’s objective is “to foster competition and innovation in the computer and software industry.”<sup>11</sup>

Similarly, the 1991 European Union Software Directive contains a specific exception for software reverse engineering.<sup>12</sup> The Directive has been implemented in all the member states of the European Union, as well as in the European Free Trade Agreement countries and throughout Eastern and Central Europe.<sup>13</sup> Thus, both the United States and the European Union have recognized the central role reverse engineering plays in maintaining legitimate competition and innovation in the computer industry.

Asian countries share this recognition. Within the past two years, Hong Kong, Singapore, and the Philippines have all amended their copyright laws to permit software

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<sup>9</sup> See also note 4.

<sup>10</sup> S. Rep. No. 105-190, at 13 (1998).

<sup>11</sup> *Id.*

<sup>12</sup> Council Directive 91/250/EEC on the Legal Protection of Software Programs, Articles 5 and 6 (May 14, 1991), O.J. No. L122/42,44 (May 17, 1991).

<sup>13</sup> See *Interfaces on Trial* at 258-62.

reverse engineering.<sup>14</sup> Additionally, the Australian government recently introduced similar amendments in the Senate.<sup>15</sup>

### **III. THE FEDERAL CIRCUIT'S INTERPRETATION OF SECTION 117 THREATENS SOFTWARE REVERSE ENGINEERING.**

Every day engineers in Silicon Valley perform black box reverse engineering — running an existing program to determine the interface specifications with which a new product under development must comply. The running of a program invariably involves copying it temporarily in the computer's memory. If the making of these copies is prohibited, much software development would grind to a halt. Moreover, an engineer must make RAM copies of computer programs before performing more sophisticated reverse engineering techniques such as disassembly. Before one can disassemble a program, one must first copy it into the computer's memory. If copyright law forbids these RAM copies, disassembly becomes impossible.

#### **A. Basic Computer Functions Require the Making of Copies of Programs.**

As computers are currently designed, when a user wants to run a program, he must first install the program into the computer. In a personal computer, for example, the user usually copies the program from a diskette or a CD-ROM into the computer's hard drive. When the user wants to run a particular program, the computer automatically copies the program from the hard drive into the computer's random

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<sup>14</sup> Ord. No. 92 of 1997 (H.K.); Copyright (Amendment) Bill of 1998 (Sing.); Republic Act 8293 of 1996 (Phil.).

<sup>15</sup> Copyright Amendment (Computer Programs) Bill of 1999 (Austl.).

access memory. The computer then executes the operations directed by the RAM copy of the program. Once the computer is turned off, or another program overwrites it, the RAM copy disappears (but the copy in the hard drive remains).

Accordingly, even the most standard use of a program involves copying it at least twice: once when initially installing the program into the hard drive; and again when the computer automatically copies the program into RAM whenever the program is run. Additional RAM copies are made every time the user turns on the computer and seeks to run the program. As noted above, such a RAM copy typically disappears whenever the user turns the computer off, or overwrites it when loading another program into RAM.

The basic installation and execution of a program may require the making of other copies. If the program is installed in a high level language, such as C++, the computer must “compile,” or convert, the program into a lower level language before the computer can execute the program. Similarly, a program might need to be transferred from one storage medium to another before it can be installed in the computer. If, for example, a computer does not have a CD-ROM drive, a program stored on a compact disc would have to be transferred to a floppy disk before it could be installed in the computer.

**B. Because Section 117 Permits the Installation and Execution Copies Made During the Course of Reverse Engineering, A Software Firm Should Not Be Permitted To Nullify Section 117 By Stamping A “License” On the Package.**

Recognizing that computer technology necessitates the copying and recopying of programs into memory,

Congress in 1980 amended Section 117 of the Copyright Act to provide that:

it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of the computer program provided ... that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and it is used in no other manner....<sup>16</sup>

Because any form of software reverse engineering beyond reading the technical manuals involves installing and executing the program, software reverse engineering involves the making of copies of the program in the computer's memory. Section 117 permits the making of these copies. The Federal Circuit's interpretation of Section 117, however, would allow the developer of the software to nullify Section 117 by stamping a "license" on the packaging. The Federal Circuit would treat the purchaser of the software as a "licensee" rather than an "owner," and refuse to afford the purchaser the Congressionally mandated shelter of Section 117.

In other words, the Federal Circuit's interpretation of Section 117 would allow a software developer unilaterally to nullify a statutory provision essential to permitting competition. This nullification would have the effect of converting the copyright law into the patent law. As the Fifth Circuit recognized in a similar case involving the same plaintiff, DSC Communications, "DSC seems to be attempting to use its copyright to obtain a patent-like monopoly over unpatented microprocessor cards."<sup>17</sup>

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<sup>16</sup> 17 U.S.C. § 117.

<sup>17</sup> *DSC*, 81 F.3d at 601.

Copyright should not be a shortcut to a patent monopoly; an inventor should receive a patent only after an examiner determines that the invention meets the statutory requirements of utility, novelty, and nonobviousness.

To be sure, a competitor seeking to reverse engineer the software could argue that the installation and execution copies incidental to reverse engineering are fair uses under Section 107, but fair use is an unpredictable and expensive defense. It often involves extensive factual inquiry in an evidentiary hearing, and the results are inconsistent.<sup>18</sup> Computer companies should not be forced to rely on the vagaries of fair use when Congress provided a simple and straightforward defense: Section 117. This Court should put an end to the evisceration of Section 117 represented by the Federal Circuit's decision and the Ninth Circuit's decision in *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993) and adopt instead the reading of Section 117 advanced by the Fifth Circuit in *Vault Corp. v. Quaid Software Ltd.*, 847 F.2d 255 (5th Cir. 1988) and by the district court below.

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<sup>18</sup> For example, in *Sony Computer Entertainment Inc. v. Connectix Corp.*, 50 U.S.P.Q.2d 1920 (N.D. Cal. 1999), after an evidentiary hearing in the context of a motion for preliminary injunction, the district court rejected Connectix's argument that the installation and execution copies it made while reverse engineering Sony's program constituted a fair use. Further, the court dismissed Connectix's Section 117 defense because of the Ninth Circuit's narrow interpretation of that provision. *Id.* at 1928. The case is now on appeal to the Ninth Circuit.

**IV. CONCLUSION**

For the foregoing reasons, CCIA respectfully requests the Court to grant the Petition for a Writ of Certiorari.

Respectfully submitted,

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