

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

ORACLE AMERICA, INC.,
Plaintiff-Appellant,

v.

GOOGLE, INC.,
Defendant-Cross Appellant.

On Appeal from the United States District Court for the Northern District of
California, Case No. 10-cv-3561, Hon. William H. Alsup

**BRIEF *AMICUS CURIAE* OF THE COMPUTER &
COMMUNICATIONS INDUSTRY ASSOCIATION
IN SUPPORT OF CROSS-APPELLANT GOOGLE
URGING AFFIRMANCE**

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CERTIFICATE OF INTEREST

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and Federal Circuit Rule 47.4, Jonathan Band, counsel for *amicus curiae* the Computer & Communications Industry Association certifies the following:

1. The full name of the party represented by me is the Computer & Communications Industry Association.
2. The name of the real party in interest represented by me is the Computer & Communications Industry Association.
3. The Computer & Communications Industry Association is not a subsidiary of any corporation and has issued no stock.
4. The names of all law firms and attorneys that appeared for the party now represented by me in this proceeding are Jonathan Band PLLC, Jonathan Band, and Matthew Schruers.

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INTEREST OF *AMICUS CURIAE*¹

The Computer & Communications Industry Association (“CCIA”) represents over twenty companies of all sizes providing high technology products and services, including computer hardware and software, electronic commerce, telecommunications, and Internet products and services – companies that collectively generate more than \$250 billion in annual revenues.²

Effective intellectual property protection gives developers incentive to create new applications. At the same time, improper extension of copyright law to functional elements will impede innovation and inhibit competition in the computer industry.

For more than twenty-five years, CCIA has supported interpreting the intellectual property laws to permit the development of interoperable products. For example, CCIA filed an *amicus* brief with this Court in *Chamberlain Group v. Skylink Techs.*, 381 F.3d 1178 (Fed. Cir. 2004), arguing that the Digital Millennium Copyright Act’s interoperability

¹ No counsel for any party authored this brief in whole or part; no such party or counsel made a monetary contribution intended to fund its preparation or submission; and no person other than *amicus* made such a contribution. All parties have consented to the filing of this brief.

² A list of CCIA members is available at <http://www.cciagnet.org/members>. Google is a CCIA member, and Oracle and Sun were formerly members of CCIA, but none of these parties took any part in the preparation of this brief.

exception, 17 U.S.C. 1201(f), provided an alternative ground for affirmance. CCIA also filed *amicus* briefs with the U.S. Court of Appeals for the Ninth Circuit in *Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992) (holding that the reverse engineering technique known as disassembly is a fair use as a matter of law when it is the only way to obtain functional elements such as the information necessary for achieving interoperability) and in *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir.), *cert. denied*, 531 U.S. 831 (2000) (affirming *Sega*).

In this appeal, Oracle America (“Oracle”) asks this Court to overturn longstanding principles concerning the scope of copyright protection for computer programs and follow instead discredited thirty year old dicta from the Third Circuit in *Apple Computer v. Franklin Computer*, 714 F.2d 1240, 1253 (3d Cir. 1983), *cert. denied*, 464 U.S. 1033 (1984) (stating that compatibility is “a commercial and competitive objective which does not enter into the somewhat metaphysical issue of whether particular ideas and expression have merged”). Adopting the position that copyright protects the elements of computer programs necessary to achieve interoperability poses serious anticompetitive consequences for CCIA members and the technology industry as a whole.

INTRODUCTION AND SUMMARY OF ARGUMENT

Oracle and its *amici* repeatedly compare the Java Application Program Interface (“API”) to novels. Computer applications, however, are different from artistic works. A novel stands by itself. A computer application, however, can function only in conjunction with hardware and other software. For example, a word processor requires an operating system in order to perform its task; otherwise, it is a useless set of magnetic impulses. This requirement is “interoperability” – a term “used to describe a situation in which a program from one vendor is able to exchange information with a program from a different vendor.”³ Two applications can interoperate only by conforming to the same set of rules, or interface specifications.⁴ The APIs at issue here are an example of such specifications.

³ U.S. Congress, Office of Technology Assessment, *Finding a Balance: Computer Software, Intellectual Property, and the Challenge of Technological Change*, at 127, OTA-TCT-527 (Washington, DC: U.S. Government Printing Office, May 1992), *available at* <http://ota.fas.org/reports/9215.pdf>.

⁴ *See amicus* brief filed by CCIA and the American Committee for Interoperable Systems (ACIS) in *Lotus Dev. Corp. v. Borland Int’l*, 516 U.S. 233 (1996). CCIA has advanced similar arguments in numerous other *amicus* briefs, including *Lotus; Pulse Commc’ns v. DSC Commc’ns Corp.*, 528 U.S. 923 (1999); *Sony Computer Entm’t, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir.), *cert. denied*, 531 U.S. 831 (2000); *DVD Copy Control Assoc. v. Brunner*, 113 Cal. Rptr. 2d 388 (Cal. Ct. App. 2001); *Bowers v. Baystate*, 320 F.3d 1317 (Fed. Cir. 2003); *Chamberlain Group v. Skylink*

If a company could exercise proprietary control over the interface specifications implemented by its products, that company could determine which products made by other firms – if any – 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.⁵ Moreover, such authority would extend the rights under copyright beyond what is necessary to protect the original expressive elements that have traditionally been offered protection under American copyright law, and it would override limitations on copyright crafted to protect the public good.

Such a broad monopoly would have serious implications for consumer welfare.⁶ In the absence of competition during the effective lifespan of the product, the first developer would have little incentive to develop more innovative and less costly products. These negative consequences would be compounded by the fact that the personal computer revolution and the

Techs., 381 F.3d 1178 (Fed. Cir. 2004); *Lexmark v. Static Control*, 387 F.3d 522 (6th Cir. 2004); and *Davidson v. Jung*, 422 F.3d 630 (8th Cir. 2005). CCIA's reverse engineering arguments in section I.A., *infra*, and the DMCA in section I.C.3., *infra*, have also been advanced in many of these cases.

⁵ Dan L. Burk, *Anticircumvention Misuse*, 50 UCLA L. REV. 1095, 1113, 1133 (2003).

⁶ See, e.g., Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045, 1082, 1097 n.281 (1989).

emergence of the Internet have produced an overwhelming need for interconnection between different elements of computer systems.

Prohibiting competitors from accessing *de facto* standard interface specifications would lock users into a particular operating system or network software environment, and would inhibit the transfer of data between users with different computing environments. *See Lotus Dev. Corp. v. Borland Int'l*, 49 F.3d 807, 821 (1st Cir. 1995) (Boudin, J., concurring), *aff'd by an equally divided Court*, 516 U.S. 233 (1996).

In short, in the computer industry, overly broad intellectual property protection directly restricts competition and innovation. This was the status quo in the computing environment in the 1970s. Once a buyer purchased a computer system, the buyer was essentially locked-in to that system: the system was incompatible with products manufactured by other companies, and conversion costs were high. Although “locking in” was extremely profitable for dominant vendors such as IBM, competitors and users suffered from high prices, indifferent service, limited choice, and slow innovation. Jonathan Band & Masanobu Katoh, *Interfaces on Trial 2.0* (2011), at 1.

Fortunately, as the district court explained in detail, U.S. courts rejected the approach embodied by the Third Circuit’s *dicta* in *Franklin* and holding in *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222

(3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987), and found instead that interface specifications fall on the idea (or unprotected) side of copyright's idea/expression dichotomy. These more recent rulings have enabled the transition from the locked-in computer environments of the 1970s to today's interoperable Internet. These courts, including the district court, have not created software-specific copyright doctrines. Rather, they have applied traditional copyright principles to software, concluding that "[t]o give one creator a monopoly over these basic elements would effectively stunt the efforts of other creators to elaborate on these elements in the production of their own works." *See* Office of Tech. Assessment at 143. As courts have become more familiar with software, they have understood that although computer programs are classified under the Copyright Act as literary works, an application has little in common with actual works of literature other than that both are expressed in symbols. An application is more like an appliance than a Harry Potter novel in that, while both the appliance and the application manifest aspects of design and creativity, both are fundamentally used to "bring about a certain result." 17 U.S.C. § 101 (defining "computer program"). Accordingly, the copyright protection in computer programs is "thin," protecting lines of code, detailed structure, and graphical user interfaces, but leaving unprotected the elements necessary to achieve

interoperability and other systems and methods of operation. This is neither a value judgment nor a suggestion that engineers are less creative than novelists. Rather, it recognizes the basic fact that an applied work of engineering functions differently from a work of art or entertainment, and as a consequence, works of engineering receive a different scope of copyright protection. To say that interface specifications necessary for interoperability are not protected, and that software copyright is thin, is not to withhold copyright protection from software platforms. Title 17 still provides ample protection, without going through the effort of a patent prosecution, and offers robust remedies for copyright infringement in appropriate cases.⁷

This brief will not repeat the parties' substantive arguments. Instead, following Chief Justice Roberts' teaching that "a page of history is worth a volume of logic," *eBay v. MercExchange*, 547 U.S. 388, 394 (2006) (Roberts, J., concurring) (citations omitted), it provides an overview of how U.S. courts, Congress, and jurisdictions around the world have, over the past 25 years, arrived at a consensus interpretation of the copyright question of

⁷ See, e.g., Karen Gullo & Cornelius Rahn, "SAP to Pay Oracle \$306 Million for Copyright Breach," *Bloomberg.com*, Aug. 3, 2012, available at <http://www.bloomberg.com/news/2012-08-02/oracle-says-sap-to-pay-306-million-in-copyright-deal.html>.

interoperability.⁸ This pro-interoperability approach has two related principles. First, copyright protection does not extend to program elements necessary for interoperability, such as interface specifications. Second, the copying incidental to the reverse engineering necessary to identify these interface specifications does not infringe copyright.

At the outset of the “interoperability debate,” CCIA and another organization with overlapping membership, the American Committee for Interoperable Systems (“ACIS”), along with leading members of both organizations,⁹ encouraged a pro-interoperability interpretation of copyright law in *amicus* briefs in at least sixteen different cases. CCIA and ACIS also lobbied vigorously, and successfully, for an interoperability exception in the Digital Millennium Copyright Act (“DMCA”), a provision now mandated by eleven free trade agreements to which the United States is a party. A sister organization to ACIS, the European Committee for Interoperable

⁸ This history is discussed in detail in two books co-authored by counsel of record on this brief. Jonathan Band & Masanobu Katoh, *Interfaces on Trial: Intellectual Property and Interoperability in the Global Software Industry* (1995), available at <http://www.policybandwidth.com/interfaces-2-0> (hereinafter “*Interfaces 1.0*”); and Band & Katoh, *Interfaces on Trial 2.0* (2011), available at <http://mitpress.mit.edu/books/interfaces-trial-20> (hereinafter “*Interfaces 2.0*”).

⁹ Companies from across industry, ranging from Amdahl to Zenith, and including Oracle and Sun Microsystems (which developed the Java APIs prior to its 2010 acquisition by Oracle), were active CCIA and/or ACIS members. Sun’s Deputy General Counsel chaired ACIS for much of its existence.

Systems (“ECIS”), also supported interoperability principles in the European Union Software Directive. In fact, industry advocacy for interoperability extended to the Pacific Rim and the Middle East.

After reviewing the history of the adoption of a global copyright framework supportive of software interoperability, this brief turns to arguments by Oracle’s *amici*. While professing to support the principle that copyright should not prevent the reproduction of program elements necessary for interoperability, these *amici* nevertheless invite this Court to turn back the clock on a quarter century of established domestic and international software copyright jurisprudence. CCIA urges the Court to decline that invitation.

ARGUMENT

I. COURTS AND LEGISLATURES AROUND THE WORLD RECOGNIZE THAT COPYRIGHT MUST NOT INTERFERE WITH INTEROPERABILITY.

A. The Two Principles Fostering Interoperability

Over the past twenty-five years, U.S. courts, Congress, and foreign jurisdictions have repeatedly applied copyright law in a manner that supports interoperability. Decision-makers around the world have adopted two related principles to this end. First, they have determined that copyright does not protect interface specifications and other program elements

necessary for interoperability. Second, they have refused to treat as copyright infringement any reproductions performed in the course of the reverse engineering necessary to discern these interface specifications.

The first principle – the non-protectability of interface specifications – was correctly decided by the district court, and has been briefed extensively in this appeal. The second principle – the permissibility of reverse engineering – is not directly at issue in this case, but its treatment reflects how decision-makers view the first principle. Because a program’s interface specifications usually are not readily apparent, and may not be available, developers seeking to interoperate often must research the interface specifications of the original program. This research, known as reverse engineering, is a basic tool of software product development. Without it, interoperability can be difficult or impossible to achieve.¹⁰

¹⁰ The U.S. Supreme Court has long recognized that there is nothing inherently wrong with studying a competitor’s product to understand how it works and to figure out how to make a better product. Thus, in *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974), the Court stated that “trade secret law ... does not offer protection against discovery by fair and honest means, such as ... by so-called reverse engineering, that is by starting with a known product and working backward to divine the process which aided in its development or manufacture.” The Court has also recognized the benefits of reverse engineering: “Reverse engineering ... often leads to significant advances in technology.” *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 160 (1989).

Copyright law, however, has the potential of raising obstacles to software reverse engineering. Because of the nature of computer technology, software reverse engineering almost always requires the making of a reproduction or derivative work. Since this Court's 1992 decision in *Atari Games Corp. v. Nintendo of America*, 975 F.2d 832 (Fed. Cir. 1992), however, no less than five U.S. courts have permitted reproduction during the course of software reverse engineering under the fair use doctrine.¹¹ Other courts have prevented enforcement under a copyright misuse theory.¹²

The permissibility of reverse engineering is relevant to this case in that courts and legislatures logically would allow reverse engineering only if the reverse engineer could *use* the information he learned by the reverse engineering. The cases cited above all involved reverse engineering for purposes of interoperability. Likewise, as will be discussed below, Congress and foreign legislatures have adopted copyright exceptions that permit reverse engineering for purposes of achieving interoperability. Such

¹¹ *Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992); *DSC Commc'ns Corp. v. DGI Techs.*, 898 F. Supp. 1183 (N.D. Tex. 1995), *aff'd*, 81 F.3d 597 (5th Cir. 1996); *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532 (11th Cir. 1996); *DSC Commc'ns Corp. v. Pulse Commc'ns, 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); *Sony Computer Entm't v. Connectix Corp.*, *supra* n.4.

¹² *DSC Commc'ns Corp. v. DGI Techs.*, *id.*; *Alcatel U.S.A. v. DGI Techs.*, 166 F.3d 772 (5th Cir. 1999).

exceptions make sense only if the information necessary to achieve interoperability (here, APIs) are not covered by copyright.

B. The Global Debate Over Interoperability

The courts and legislatures did not adopt interoperability principles in a vacuum. Two competing industry constituencies, one representing the dominant software and hardware companies, the other representing new entrants, engaged in a fierce “two-decade global debate” that included litigation advocacy and lobbying on all continents except for Antarctica. *See Interfaces 1.0*, at 14.

Oracle *amicus* Business Software Alliance (“BSA”) was one association advocating the perspective that copyright could be used to restrict access to interface specifications and prohibit reverse engineering. These positions concerned leaders from new entrants in the hardware and software industry. Troubled by the competitive implications of copyright-restricted interface specifications, they first convened in Silicon Valley at Sun’s corporate headquarters on December 5, 1991, to organize a response to this threat. Chaired by Sun’s Deputy General Counsel Peter Choy, this group – ACIS – agreed upon a Statement of Principles, chiefly, that “[t]he rules or specifications according to which data must be organized in order to communicate with another program or computer, i.e., interfaces and access

protocols, are not protectable expression under copyright law”, and that copyright does not “restrict the ability of others to reproduce all or part of a lawfully obtained program as a step in the development of competing products....” American Committee for Interoperable Systems, Statement of Principles (1991), *available at* <http://www.ccianet.org/interop>.

Subsequently joining CCIA and ACIS in the global interoperability debate were ECIS, the Canadian Association for Interoperable Systems (“CAIS”) and the Supporters of Interoperable Systems in Australia (“SISA”), all of whom subscribed to the position that copyright should not extend to interface specifications, nor restrict reverse engineering.¹³

1. Advocacy in Interoperability Cases

The district court has extensively recounted prior case law concerning the non-protectability of interface specifications. In many of these disputes, CCIA or ACIS participated as *amici* in support of copyright principles favorable to interoperability.¹⁴ These included cases on non-protectability of

¹³ See *Interfaces 1.0, supra*. Both Oracle and Sun were CCIA members at this time, as well as members of ACIS, ECIS, and SISA. *Interfaces 1.0, id.* at 308. Sun joined CCIA in 1993 and remained a member until its 2010 acquisition by Oracle. Oracle was a member of CCIA from 1993 until 2011. Google only joined CCIA in 2006, decades after CCIA’s pro-interoperability advocacy began.

¹⁴ See <http://www.ccianet.org/interop>. BSA and other associations, such as the Computer and Business Equipment Manufacturers Association, filed

interface specifications,¹⁵ permissibility of software reverse engineering,¹⁶ and the interoperability exception of the DMCA.¹⁷ U.S. copyright law ultimately settled on a rule now internationally recognized: that copyright protection does not extend to interface specifications necessary for interoperability.

The resolution of the interoperability debate in the courts precipitated a change in U.S. domestic and foreign policy. In 1994, it was reflected in competition policy, as Assistant Attorney General Anne K. Bingaman noted in a speech that

briefs in various cases opposing this view. *See generally Interfaces 1.0*, 99-101 (recounting parties' general arguments).

¹⁵ *See Computer Assocs. Int'l v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992) (brief by ACIS); *Gates v. Bando*, 9 F.3d 823 (10th Cir. 1993) (brief by ACIS); *Unix Systems v. Berkeley Software*, 832 F. Supp. 790 (D.N.J. 1993) (brief by ACIS); *Apple Computer v. Microsoft Corp.*, 35 F.3d 1435 (9th Cir. 1994) (brief by ACIS); *Engineering Dynamics v. Structural Sys.*, 26 F.3d 1335 (5th Cir. 1994); (brief by ACIS); *Lotus Dev. Corp. v. Borland Int'l*, 49 F.3d 807 (1st Cir. 1995) (brief by ACIS); *aff'd by an equally divided Court*, 516 U.S. 233 (1996) (briefs by ACIS and CCIA).

¹⁶ *See Sega v. Accolade*, 785 F. Supp. 1392 (N.D. Cal. 1992) (brief by ACIS), *rev'd*, 977 F.2d 1510 (9th Cir. 1992) (briefs by ACIS and CCIA); *Bateman v. Mnemonics, Inc.*, *supra* n.11 (brief by ACIS); *ProCD v. Zeidenberg*, 86 F.3d 1447 (7th Cir. 1996) (brief by ACIS); *Pulse Commc'ns v. DSC Commc'ns Corp.*, *supra* n.4 (brief by CCIA); *Sony Computer Entm't v. Connectix Corp.*, *supra* n.4 (briefs by ACIS and CCIA); *DVD Copy Control Assoc. v. Brunner*, *supra* n.4 (briefs by ACIS and CCIA); *Bowers v. Baystate*, *supra* n.4 (brief by CCIA).

¹⁷ *See Chamberlain v. Skylink*, *supra* n.4 (brief by CCIA); *Lexmark Int'l v. Static Control*, *supra* n.4 (brief by CCIA); *Davidson v. Jung*, *supra* n.4 (brief by CCIA).

[t]he substantive reach of the exclusive rights granted under the intellectual property laws has been a matter of particular concern and ferment in the software industry.... The scope of copyright protection for computer software has, we believe, important competitive implications, as well as important implications for incentives to innovate.¹⁸

The U.S. Government eventually took the position that interface specifications should not receive copyright protection in its antitrust case against Microsoft. The Justice Department had objected to certain restrictions in licensing agreements, and, citing *Computer Associates v. Altai*, argued that copyright is not an unbounded property right, but rather a limited power designed to incentivize creation. The Government stated, “it is by now well established that the copyright in a computer program cannot extend to the functional aspects of that computer program; to design choices dictated by necessity, cost, convenience or consumer demand.”¹⁹ To support this statement, it summarized *Mitel v. Iqtel*, 124 F.3d 1366 (10th Cir. 1997), as follows: “interface specifications of a communications protocol are freely copiable because they are functional rather than expressive.”²⁰

Interoperability also found support elsewhere in the U.S. Government, as the Federal Trade Commission also expressed concern in relation to

¹⁸ Quoted in *Interfaces 1.0*, at 64.

¹⁹ Response of the United States to Microsoft’s Motion for Summary Judgment, *U.S. v. Microsoft*, 1998 U.S. Dist. LEXIS 14231 (D.D.C. Sept. 14, 1998), at 77.

²⁰ U.S. Response, *supra*, at 79.

Article 2B of the Uniform Commercial Code, insofar as it could limit the reverse engineering permitted under *Sega*, and thereby dampen competition in the software industry. *See Interfaces 2.0*, at 67-70.

2. The Interoperability Exception in the DMCA

Section 1201 of the Digital Millennium Copyright Act, enacted by Congress in 1998, restricts the development, distribution, and use of technologies that circumvent other technologies that protect an author's copyrights. While the DMCA was pending before Congress, CCIA and ACIS explained that the act of reverse engineering could require the circumvention of a technological protection measure.²¹ Moreover, the incorporation of these specifications in competitive products could run afoul of the DMCA's prohibition on the manufacture and distribution of circumvention technologies. This would particularly be the case when a company placed a software "lock" on a program that prevented access to the program, and the competitor circumvented that software lock to achieve interoperability. Thus, Section 1201 could prevent a developer of

²¹ In a 1998 press release, Michael Morris, then Vice President and General Counsel of Sun Microsystems, argued that the legislation would "impose[] a new and unnecessary layer of restraint on lawful access to those unprotected elements of computer programs that are necessary to achieve interoperability, thus placing developers of interoperable products at the mercy of proprietary vendors." Press Release, Sun Microsystems, House IP Subcommittee Action Threatens Internet Competition (Mar. 1, 1998).

interoperable products from exercising his fair use privileges recognized in *Sega* and its progeny.

Notwithstanding opposition from BSA, CCIA and ACIS's pro-interoperability advocacy ultimately prevailed, and Congress included in the DMCA an exception explicitly directed at software reverse engineering and interoperability. Section 1201(f) specifically allows software developers to circumvent technological protection measures in a lawfully obtained computer program in order to identify the elements necessary to achieve interoperability of an independently created computer program with other programs.²² Furthermore, a person may develop, distribute, and employ the means to circumvent technological protection measures for the purpose of achieving interoperability.

The Senate Judiciary Committee report on the DMCA explained the policy underlying Section 1201(f) as being "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." S. Rep. No. 105-190 (1998), at 29. The Committee evidently understood that if a company placed on its program a

²² Section 1201(f)(4) defines interoperability "as the ability of computer programs to exchange information, and of such programs mutually to use the information which has been exchanged."

technological measure that prevented interoperability, a legal prohibition on circumventing that technological protection could preclude other companies from developing products capable of operating in that company's computing environment. Citing *Sega*, the Committee stated that "[t]he objective is to ensure that the effect of current case law interpreting the Copyright Act is not changed by enactment of this legislation for certain acts of identification and analysis done in respect of computer programs." *Id.* The Committee concluded by noting that "[t]he purpose of this section is to foster competition and innovation in the computer and software industry." *Id.*

In a 2003 rulemaking adopting exemptions to the DMCA, the U.S. Copyright Office affirmed that Section 1201(f) has the effect of "enabling competitive choices in the marketplace." Recommendation of the Register of Copyrights, Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, at 172 (Docket No. RM 2002-4, Oct. 27, 2003), *available at* <http://www.copyright.gov/1201/docs/registers-recommendation.pdf>. In particular, the Office found that Section 1201(f)(3) permitted the

incorporation of interface information in products for the purpose of achieving interoperability.²³ *Id.*

3. Free Trade Agreements Mandate Protections for Interoperability

Pro-interoperability principles also influenced the contours of U.S. trade agreements. Since 2002, the United States has negotiated a series of free trade agreements (“FTAs”), which, *inter alia*, include provisions modeled on DMCA section 1201. In addition to requiring parties to adopt prohibitions on the circumvention of technological protection measures, these provisions permit countries to adopt exceptions for reverse engineering for the purpose of achieving interoperability. Thus, each party may permit

[n]oninfringing reverse engineering activities with regard to a lawfully obtained copy of a computer program, carried out in good faith with respect to particular elements of that computer program that have not been readily available to the person engaged in those activities, for the sole purpose of achieving interoperability of an independently created computer program with other programs.

U.S.-Korea Free Trade Agreement, art. 18.4.7(d)(i), June 30, 2007, 8 U.S.T.

2217.²⁴ The FTAs with the following countries include similar language

²³ CCIA and ACIS lobbied Congress and the Administration against other proposals that may have threatened interoperability, including legislation regarding criminal penalties for infringement of software (S. 893 in the 102nd Congress), industrial design protection (H.R. 1790 in the 102nd Congress), database protection, and software patents. Additionally, these groups sought a reverse engineering exception to the proposed Article 2B of the Uniform Commercial Code. *See Interfaces 2.0*, at 68.

permitting the adoption of exceptions for reverse engineering for purposes of interoperability: Australia, Bahrain, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Morocco, Nicaragua, Oman, Panama, Peru, and Singapore. As in the United States, many of these countries have adopted reverse engineering exceptions in their domestic law.²⁵

C. Copyright Laws Around the World Protect Interoperability

In addition to the reverse engineering exceptions adopted pursuant to the FTAs, legislation favoring interoperability has been adopted in over 40 countries, including many major U.S. trading partners.

1. European Union Law Mirrors the U.S. Pro-Interoperability Approach

a. The Software Directive

In 1991, after a vigorous three-year lobbying battle between BSA and ECIS, the European Union adopted the Software Directive.²⁶ Council of Ministers Directive 91/250/EEC of 14 May 1991 on the Legal Protection of Computer Programs, 1991 O.J. (L 122). The Directive that emerged from

²⁴ CCIA assisted the Office of the United States Trade Representative in the drafting of this language.

²⁵ CCIA and ACIS advocated pro-interoperability positions in connection to other international agreements such as TRIPS and the World Intellectual Property Organization Copyright Treaty.

²⁶ This legislative battle between BSA, ECIS, including ECIS members Oracle and Sun, is discussed in detail in *Interfaces 1.0*, at 227-41.

this political process reflects a policy judgment that copyright should not interfere with interoperability. The Software Directive has been implemented by all member states of the EU, as well as Croatia, Norway, Russia, Switzerland, and Turkey. *Interfaces 2.0*, at 6.

Article 5(3) of the Directive provides a broad exception from liability for “black box reverse engineering” – activities such as observing the behavior of a program as it runs, input/output tests, and line traces. Article 6 provides a narrower exception for decompilation – what *Atari* and other U.S. courts have called “disassembly.” Decompilation or disassembly involves translating machine-readable object code into a higher level, human readable form. Article 6 permits decompilation for purposes of achieving interoperability when the information has not previously been made available; the decompilation is limited to those parts of the program necessary for interoperability; and the final product created by the reverse engineer does not infringe on the copyright of the original product.

b. *SAS Institute v. World Programming Ltd.*

The Software Directive does not directly address the protectability of interface specifications. Rather, Article 1(2) provides that “[i]deas and principles which underlie any element of a computer program, including those which underlie its interfaces, are not protected by copyright....”

Commentators interpreted this to mean that interface information necessary to achieve interoperability must fall on the idea side of the idea/expression dichotomy; otherwise, the detailed decompilation provision in Article 6 would be of little utility. However, this issue received scant attention from European courts for 20 years, until May 2012, when the European Union's highest court, the Court of Justice of the European Union ("CJEU"), ruled in *SAS Institute v. World Programming Limited*²⁷ that program functionality, programming languages, and data formats were not protectable under the Software Directive.

The case concerned SAS Institute's computer program for statistical analysis. SAS users typically create "scripts" or programs that run on top of the SAS System through a programming language known as the SAS Language. World Programming Limited ("WPL") sought to compete with SAS by creating "middleware" software that could run users' scripts written in the SAS Language just like the SAS System did. To do so, WPL created a program that emulated SAS. SAS sued, claiming that even though WPL did not copy SAS's source code, WPL's program nonetheless infringed on SAS's copyrights, *inter alia*, by replicating (i) the SAS programming language, (ii) the data and programming interfaces used in the SAS system

²⁷ Case C-406/10, May 2, 2012, ¶ 71, *available at* <http://curia.europa.eu/juris/liste.jsf?num=C-406/10>.

and (iii) the functionality offered by the SAS System.

The CJEU ruled that Article 1(2) of the Software Directive “must be interpreted as meaning that neither the functionality of a computer program nor the programming language and the format of data files used in a computer program in order to exploit its functions constitute a form of expression of that program and, as such, are not protected by copyright in computer programs for purposes of that directive.” *Id.* The CJEU explained that “to accept that the functionality of a computer program can be protected by copyright would amount to making it possible to monopolise ideas, to the detriment of technological progress and industrial development.” *Id.*, ¶ 40. The CJEU observed that “the main advantage of protecting computer programs by copyright” as opposed, presumably, to patents, “is that such protection covers only the individual expression of the work and thus leaves other authors the desired latitude to create similar or even identical programs,” *id.*, ¶ 41, provided that they refrain from copying protected expression. In other words, the CJEU reached precisely the same conclusion as the district court here.

2. Pacific Rim Policy Aligns with U.S. and European Pro-Interoperability Law

The policy battles described above between the members of BSA and the members of CCIA and ACIS repeated themselves throughout the Pacific

Rim, where policymakers have also arrived at a view consistent with that of U.S. and Europe. During a decade-long copyright law review in Australia, SISA filed numerous submissions in support of an exception for reverse engineering for purposes of interoperability.²⁸ SISA was opposed by dominant companies organized in the Computer and Business Equipment Manufacturers Association. In the end, SISA prevailed; Australia adopted reverse engineering exceptions modeled on articles 5(3) and 6 of the EU Software Directive.

The Attorney-General of Australia, the Hon. Daryl Williams QC, explained the government's rationale for introducing these exceptions. With the advent of the Internet, "there is an obvious need for computers and the programs which drive them to communicate, connect, or 'interoperate' with each other." Speech on Copyright Amendment (Computer Program) Bill 1999, Second Reading (Aug. 11, 1999) (quoted in *Interfaces 2.0*, at 152). The Attorney-General then explained the need for interface information in order to achieve interoperability, and how this information as a technical matter can often be obtained only through reverse engineering. The Attorney-General noted that "the law of the leading software producing country in the world, the United States, allows makers of new programs to

²⁸ See *Interfaces 2.0*, at 136-58.

use decompilation to find out the interface information of existing programs for achieving interoperability. The countries of the European Union, and other countries, also allow this to be done.” *Id.*

A similar discussion occurred in Hong Kong, in the months before the turnover to China, where the Legislative Council worked on revising its copyright laws.²⁹ The Bills Committee in April 1997 held a public hearing on software reverse engineering. For ACIS, Sun’s counsel Peter Choy testified in favor of a reverse engineering exception; a BSA representative testified against it. The Legislative Council decided to broaden Hong Kong’s fair dealing provision to more closely resemble the fair use provision of the U.S. Copyright Act. The Secretary of Trade and Industry explained that this amendment was intended “to encourage competition in the information technology industry by facilitating timely access to information and ideas underlying computer programs.” Speech by Secretary of Trade and Industry on Resumption of Second Reading, Debate at 10 (June 24, 1997) (quoted in *Interfaces 2.0*, at 175). She added that “the object is to allow decompilation to be deemed a fair use....” *Id.*

²⁹ See *Interfaces 2.0*, at 168-75.

Singapore also amended its fair dealing provision to more closely track fair use.³⁰ In introducing the amendment, the Attorney-General of Law stated that it “will bring us in line with the United States, the United Kingdom, other European Union countries, Hong Kong, and Australia, which do not bar the use of copyright materials for commercial research.”³¹ *Id.* at 166. Professor Chin Tet Yung, in the brief debate of the amendment in Parliament, said that it “is very important to ensure that there is a fair balance in any Copyright Bill between the interests of holders of rights in ‘cutting edge’ software and the interest of competitors who want to design and market non-infringing competing programmes which interface or are inter-operable with the basic programmes.” *Id.* In 2004, Singapore further amended its copyright law to include provisions modeled on the black box reverse engineering and the decompilation provisions of the Software Directive.

The copyright laws of other Pacific Rim countries have been amended to encourage interoperability. In the Philippines, the legislature in 1997 inserted the following sentence in the fair use provision: “Decompilation, which is the reproduction of code and translation of the form of the

³⁰ See *Interfaces 2.0*, at 158-68.

³¹ See Second Reading of Copyright (Amendment) Bill of 1998 (Sing.) (February 19, 1998) (quoted in *Interfaces 2.0*, at 166-67).

computer program indispensable to obtain the information necessary to achieve the inter-operability of an independently created computer program with other programs may also constitute fair use.”³² Taiwan in 2007 added a fair use provision similar to section 107, as well as a reverse engineering exception to its circumvention prohibition. In 2008, the Parliament in New Zealand adopted reverse engineering exceptions based on the EU Software Directive, permitting decompilation “necessary to obtain information necessary for the objective of creating an independent program that can be operated with the program decompiled or with another program....”³³ In 2012, Malaysia added a circumvention prohibition, with an exception for “the sole purpose of achieving interoperability of an independently created computer program with the original program or any other programs.”³⁴

³² ACIS submitted comments to the Philippine government arguing in favor of an interoperability exception. ACIS also argued in favor of interoperability exceptions in Japan and Korea. *See Interfaces 1.0*, at 297-316; *Interfaces 2.0*, at 178-80.

³³ Copyright (New Technologies) Amendment Act 2008, § 43 (N.Z.) (2008 No. 27) at <http://www.legislation.govt.nz/act/public/2008/0027/latest/DLM1122604.html> (amending Copyright Act 1994, § 80A(2)). CCIA submitted comments to the New Zealand government in support of interoperability.

³⁴ Copyright (Amendment) Act 2012, Laws of Malaysia, Act A1420, § 36A(2)(a), *available at* http://malaysianlaw.my/attachments/Act-A1420-Copyright-A-Act_81389.pdf.

3. Other Regions Also Embrace Interoperability

India permits “the doing of any act necessary to obtain information essential for operating interoperability of an independently created computer programme with other programmes....”³⁵ Kenya provides that authorization “shall not be required to decompile [a] program, convert the program into a version expressed in different programming language, code, notation for the purpose of obtaining information needed to enable the program to operate with other programs.”³⁶ Likewise, Israel allows the copying of a computer program to “obtain[] information which is needed to adapt a different and independently developed computer system or program, in such a way that it will be interoperable with the computer program.”³⁷ Canada last year amended its copyright law to permit the owner or licensee of a copy of a computer program “to reproduce the copy for the sole purpose of obtaining information that would allow the person to make the program and any other

³⁵ Copyright Act, No. 14 of 1957; India Code (1999), § 52(1)(ab), *available at* http://www.wipo.int/wipolex/en/text.jsp?file_id=128098.

³⁶ Copyright Act, (2009) Cap. 130 § 26(5) (Kenya), *available at* http://www.wipo.int/wipolex/en/text.jsp?file_id=202207.

³⁷ Copyright Act, 5767-2007, 2007 LSI 2199 (Israel), § 24(c)(3), *available at* http://www.wipo.int/wipolex/en/text.jsp?file_id=132095. For ACIS, Sun’s Choy submitted comments to the Israeli Knesset arguing in favor of an interoperability exception.

computer program interoperable.” Copyright Modernization Act (Bill C-11), S.C. 2012, c. 20 (Can.), s. 30.61.³⁸

II. ORACLE’S *AMICI* AGREE THAT ELEMENTS NECESSARY FOR INTEROPERABILITY DO NOT RECEIVE COPYRIGHT PROTECTION.

Even Oracle’s *amici* largely acknowledge as a matter of law and policy what jurisdictions around the world have concluded: copyright does not and should not apply to program elements necessary to achieve interoperability.

Oracle *amicus* BSA

recognizes that interoperability between computer programs is in many instances desirable both from the perspective of developers and their customers. Operating systems work harmoniously with microprocessors; applications work harmoniously with operating systems; and different types of computers work harmoniously when interacting over the Internet.

BSA Br. at 32. For this reason, courts allow “limited copying of computer programs to make new programs interoperable with existing software or hardware.” *Id.* at 32-33.

³⁸ Further, the amendment permits circumvention “for the sole purpose of obtaining information that would allow the person to make the program and any other computer program interoperable.” *See id.*, 41.12(1). CAIS, whose members included Sun, submitted comments in favor of interoperability exceptions in the Canadian copyright law.

Computer scientists Eugene Spafford, et al., similarly acknowledge the “practical concern ... that a developer could leverage its copyright primarily to prevent interoperable products from being developed.” Spafford Br. at 21. Spafford asserts that “the creator of a word processor who wants to be able to open Microsoft Word files in the .doc file format so that they can be used in that creator’s word processing program (i.e., so that the programs are interoperable) must be able to copy the .doc file format.” *Id.* at 22. Spafford adds that “we do not advocate restraining copying that is required for purposes of interoperability....” *Id.* at 21.

Notwithstanding the strong support expressed by Oracle’s *amici* for the principle that copyright should not impede interoperability, they seek reversal of the district court’s decision. BSA punctiliously faults the district court for finding that Oracle’s APIs were not copyrightable, rather than that they were not infringed when Google copied them; *see* BSA Br. at 27. However, the district court quoted and followed *Sega*’s explicit holding that functional aspects “are not protected.” *See Oracle Am., Inc. v. Google, Inc.*, 872 F. Supp. 2d 974, 994 (N.D. Cal. 2012) (quoting *Sega*, 977 F.2d at 1522). Moreover, the district court did not hold that *no* API received copyright protection, only that *these* particular APIs did not. *See id.* at 1002. And it certainly did not hold that the source code implementing the API did not

receive copyright protection. Thus, the vast majority of the software created by Sun and acquired by Oracle remains protected.

Oracle's *amici* also contradict the facts of the case, suggesting that Google's copying was not motivated by the imperative of interoperability, but by a desire to appeal to programmers skilled in Java. BSA Br. at 33; Spafford Br. at 20. The district court, however, found that "in order for at least some [preexisting] code to run on Android... Google replicated what was necessary to achieve a degree of interoperability."³⁹ *Oracle v. Google*, 872 F. Supp. 2d at 1000.

CONCLUSION

The United States and over 40 other countries have recognized that permitting copyright law to impede interoperability would harm legitimate competition in the computer industry and impair the growth of the Internet economy. CCIA, its members, and several litigants and *amici* here played a major role in creating this global legal environment that fosters interoperability and innovation. This case should not provide a basis for relitigating or legislating against more than two decades of established

³⁹ Whether the district court correctly found that Google was attempting "to achieve a degree of interoperability" is a finding of fact reversible only if it is clearly erroneous. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1375 (Fed. Cir. 1986); *see also Saltarelli v. Bob Baker Group Med. Trust*, 35 F.3d 382, 384 (9th Cir. 1994).

international law and jurisprudence. Even now, Congress is undertaking a comprehensive review of copyright law; if litigants or *amici* wish to undo a quarter century of copyright jurisprudence, that debate should be had before Congress.

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CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitations of Fed. R. App. P. 32(a)(7)(B) because it contains 6,726 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b).

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CERTIFICATE OF SERVICE

I hereby certify, that on this 30th day of March 2013, a true and correct copy of the foregoing Brief of *Amicus Curiae* the Computer & Communications Industry Association was timely filed electronically with the Clerk of the Court using CM/ECF, which will send notification to all counsel registered to receive electronic notices.

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