

No. 2021-1542

IN THE
**United States Court of Appeals
for the Federal Circuit**

SAS INSTITUTE INC.,
Plaintiff-Appellant,

v.

WORLD PROGRAMMING LIMITED,
Defendant-Appellee.

Appeal from the United States District Court
for the Eastern District of Texas,
Chief Judge J. Rodney Gilstrap

**BRIEF OF 44 INTELLECTUAL PROPERTY LAW SCHOLARS AS
AMICI CURIAE IN SUPPORT OF DEFENDANT-APPELLEE**

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CERTIFICATE OF INTEREST

Pursuant to Federal Rule of Appellate Procedure 26.1 and Federal Circuit Rule 47.4, counsel for *Amici Curiae* 44 Intellectual Property Law Scholars certifies the following:

1. The full name of every *Amici Curiae* represented by me is: Pamela Samuelson, Clark D. Asay, Timothy K. Armstrong, Jonathan Askin, Patricia Aufderheide, Derek E. Bambauer, Ann Bartow, James Bessen, Mario Biagioli, James Boyle, Oren Bracha, Dan L. Burk, Michael A. Carrier, Michael W. Carroll, Bernard Chao, Jorge L. Contreras, Christine Haight Farley, William T. Gallagher, Shubha Ghosh, Jim Gibson, James Grimmelman, Amy Landers, Edward Lee, Mark A. Lemley, Yvette Joy Liebesman, Lee Ann Wheelis Lockridge, Lydia Pallas Loren, Stephen McJohn, Mark P. McKenna, Michael J. Meurer, Timothy Murphy, Tyler T. Ochoa, Aaron Perzanowski, Cheryl B. Preston, Jerome H. Reichman, Michael L. Rustad, Matthew Sag, Joshua D. Sarnoff, Niels Schaumann, Jason M. Schultz, Roger V. Skalbeck, Elizabeth Townsend Gard, Rebecca Tushnet, and Jennifer M. Urban.
2. The name of the real parties in interest represented by me is: N/A.
3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or *Amici Curiae* represented by me are: NONE.
4. The names of all law firms, partners, or associates that appeared for the party or *Amici Curiae* now represented by me in the trial court or are expected to appear in this Court (and who have not or will not enter an appearance in this case) are: NONE.
5. The title and number of any case known to me to be pending in this or any other court or agency that will directly affect or be directly affected by this Court's decision in the pending appeal is: NONE.

6. All information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees): NONE.

Dated: August 30, 2021

Respectfully submitted,

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INTEREST OF *AMICI*

Amici curiae (listed in Appendix A) are scholars of intellectual property law.¹ *Amici*'s sole interest in this appeal lies in our concern for the proper application of traditional principles of copyright law to computer programs.

SUMMARY OF ARGUMENT

I. Copyrightability is the key issue in this case. *Amici* urge this Court to carefully distinguish among three different meanings that courts have given to that term. A first meaning of “copyrightability” concerns whether a particular type of intellectual creation is a “work of authorship” eligible for copyright protection as statutory subject matter. A second meaning focuses on whether a statutorily eligible work has satisfied the constitutional requirements of original authorship and fixation in a tangible medium. A third meaning pertains to whether the specific elements of a copyrighted work, which are alleged as the basis of an infringement claim, are within the scope of protection that copyright law provides to that work. It is the last of these three meanings that is at issue here: whether the nonliteral

¹ Pursuant to Fed. R. App. P. 29(a), this brief is filed with the consent of all parties. None of the parties to this case nor their counsel authored this brief in whole or in part; no party or any party's counsel contributed money intended to fund preparing or submitting the brief; and no one other than *Amici* and their counsel contributed money intended to fund preparing or submitting this brief.

elements that SAS claims WPL copied from SAS's software constitute copyright-protectable expression.

II. Longstanding precedent holds that the plaintiff's burden to prove infringement includes a burden to prove that the individual copied elements are protectable in the third sense of copyrightability. Although a copyright registration certificate may be prima facie evidence of the copyrightability of a work in the first two senses (subject matter and originality), it is not prima facie evidence in relation to the third sense of that term (whether elements alleged to be infringed are within the scope of copyright protection). SAS's invocation of "creative choices" impermissibly blurs the distinction between the copyrightability of a work as a whole with the copyrightability of particular elements of the work that the plaintiff is asserting are infringed.

In keeping with cases that address copyrightability in the third sense, numerous precedents recognize that computer programs embody many unprotectable elements and that courts must "filter" out those elements before assessing whether a defendant has infringed. This is why plaintiffs carry the burden to prove that the defendant copied protectable expression in this third sense of copyrightability.

III. Careful application of the abstraction-filtration-comparison (AFC) test is essential to an accurate determination of which, if any, nonliteral elements of

computer programs constitute protectable expression. The Fifth Circuit first endorsed use of the AFC test for judging software copyright infringement cases in 1994. It has repeatedly applied that test in subsequent cases. The abstraction and filtration steps of this test are best understood as legal issues for courts to decide. The filtration step aims to exclude unprotectable elements of the plaintiff's work so that the comparison step focuses only on whether the defendant copied a substantial quantum of protectable expression from the plaintiff's work. When copyright owners fail to identify what protectable expression is at issue and fail to undertake a full AFC analysis in accordance with appellate court precedents, it is proper for courts to enter judgment for the defendant.

Because the abstraction and filtration steps are best understood as questions of law, the district court's copyrightability hearing was an appropriate proceeding through which to carry out the first two steps of the AFC test. After WPL offered specific evidence to rebut SAS's prima facie case, the district court properly shifted the burden to SAS to tender evidence that would overcome WPL's rebuttal evidence. SAS chose not to identify the specific protectable nonliteral elements copied or engage in any filtration. Because SAS has the burden of proving infringement by copying of substantial protected expression, the failure to engage in such filtration creates an un rebutted presumption that if anything was copied, it

was unprotected by copyright. Therefore, the district court properly dismissed its complaint.

This Court should decline the invitation to jettison careful application of the AFC test in favor of a vague analysis of “creative choices” for two reasons. First, the AFC test is well-established nationwide for use in cases alleging infringement of nonliteral elements of computer programs, including Fifth Circuit cases. Second, the AFC test, particularly the filtration step, safeguards against finding infringement based on similarities as to unprotectable elements. Particularly when a claim of infringement centers on nonliteral elements of a computer program, supplanting the AFC test with a general inquiry into “creative choices” would collapse the distinct meanings of copyrightability and pose a significant risk that a jury might find infringement based on the copying of unprotectable elements of computer programs.

IV. Careful application of the AFC test not only follows binding circuit precedent, but also advances the constitutional purposes and creativity-enhancing objectives of copyright law. Thousands of SAS users have invested in learning the SAS programming language and constructing original programs in that language to perform myriad types of statistical analyses for their businesses. These users and their programs are an important part of the downstream creative ecosystem whose value is due to the users’ investments, not to the developer of the SAS Language.

Allowing second comers to emulate the functionalities of an existing program and enabling compatibility on a different platform can unleash new rounds of creativity and allow users to continue to enjoy the benefits of their creations. Copyright should not be interpreted to give SAS indirect control over a computer language so many have learned to use. Limiting the scope of copyright protection for computer programs is essential to advancing the constitutional purpose of promoting progress in keeping with the Supreme Court’s recent pronouncements in *Google v. Oracle*.

ARGUMENT

I. Proper Resolution of This Case Depends on Distinguishing Among Multiple Meanings of “Copyrightability.”

In reviewing the district court’s copyrightability ruling, this Court should be careful to distinguish among three different meanings of the term “copyrightability.” SAS conflates these meanings, only one of which is relevant to the determination of the present case. Making explicit these distinct meanings is crucial to properly resolving the present appeal.

“Copyrightability” can refer to three distinct concepts: (1) whether a work is among the eligible classes of statutory subject matter, (2) whether a particular subject-matter eligible work satisfies the originality and fixation requirements for copyright protection, and (3) whether particular elements of a protected work,

especially nonliteral elements, are within the scope of protection that copyright provides to works of authorship.

The first meaning of copyrightability flows from the text of 17 U.S.C. § 102(a). Books and videos, for instance, are copyrightable subject matters under §§ 102(a)(1) and (a)(6); yoga sequences are not. *See Bikram's Yoga College of India, L.P. v. Evolation Yoga, LLC*, 803 F.3d 1032, 1041-42 (9th Cir. 2015). The second meaning, also embodied in § 102(a), derives from the constitutional requirement that copyright protection is available only to the original “writings” of “authors.” *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (1991). Compilations of data may satisfy both fixation (by being embodied in a book) and originality (by showing independent creation and minimal creativity), *id.* at 346, 348, but white pages listings of telephone directories are uncopyrightable because they do not embody original expression, *id.* at 362.

The third meaning of copyrightability, which is under scrutiny in this case, concerns whether the particular elements of a protected work that the plaintiff alleges as the basis of its infringement claim are original expression and, therefore, within the scope of protection that copyright provides to eligible works. A work may be “copyrightable” in the first two senses, but this does not mean that all elements of that work are protectable in the third sense of that term (that is, capable of serving as the basis of a viable infringement claim). This distinction is

especially important here, where SAS emphasizes the existence of “creative choices” that would go to the second meaning of copyrightability but should not apply to the correct legal analysis for the third, which is the meaning at issue before this Court. Computer programs are particularly likely to include unprotectable elements even when the program as a whole is copyrightable in the first two senses. For example, in *Lotus Development Corp. v. Borland International, Inc.*, 49 F.3d 807, 819 (1st Cir. 1995), *aff’d by an equally divided Court*, 516 U.S. 233 (1996), the First Circuit decided that the Lotus menu command hierarchy that Borland reimplemented in a competing program was not copyrightable (in the third sense of that term), by which the court meant that the hierarchy was not within the scope of protection that copyright law afforded to Lotus’s copyrighted program. *See also Hutchins v. Zoll Med. Corp.*, 492 F.3d 1377, 1383-85 (Fed. Cir. 2007) (copyright in software for administering CPR did not extend to program behavior nor to standard instructional words and phrases generated by the program).

All three forms of copyrightability must be shown in any successful infringement case. *See Feist*, 499 U.S. at 361. SAS tries to blur these distinctions. SAS’s program is copyrightable in the first two senses of that term, but this does not answer the question of whether the nonliteral elements of the SAS program it alleges WPL infringes are copyrightable in the third sense of the term.

II. Plaintiffs Always Bear the Burden of Proving That Defendants Improperly Appropriated Original Expression from the Plaintiff's Work.

Consistent with the third meaning of copyrightability, the district court required SAS to prove that WPL had copied copyright-protected expression from SAS's work. That requirement aligns with the appropriate allocation of burdens on parties in copyright infringement cases. To shift the burden of proof to defendants would conflict with Supreme Court and other binding precedent.

A. Plaintiffs Bear the Burden of Proving What Is Protectable Expression in Their Works.

That copyright owners must prove that copied elements of a protected work are copyrightable—copyrightability in the third sense—flows from a solid line of jurisprudence, including *Feist*. There, the Supreme Court articulated the two principal burdens that plaintiffs always bear in copyright infringement cases: “(1) ownership of a valid copyright, and (2) copying of constituent elements of the work that are original.” 499 U.S. at 361 (citing *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 548 (1985)). While accepting that Rural's telephone directory as a whole was copyrightable in the first and second senses of that term, the Court nevertheless found that Rural had failed to prove the originality of the particular elements copied (white-pages listings). The Court concluded they were not copyrightable—that is, they were not within the scope of protection that

copyright law provided to the directory. *Id.* at 361-63. Importantly, *Feist* explicitly considered and rejected the notion that infringement lay in copying even a great deal of valuable material from the plaintiff’s work, with the Court characterizing the element-specific copyrightability requirement as “the essence of copyright’ and a constitutional requirement.” *Id.* at 349 (quoting *Harper & Row*, 471 U.S. at 589 (Brennan, J., dissenting)). “Not all copying, however, is copyright infringement.” *Id.* at 361. Only copying of the plaintiff’s particular elements of original expression is. *Id.*; see also *Engineering Dynamics, Inc. v. Structural Software, Inc.*, 26 F.3d 1335, 1340-41 (5th Cir. 1994).

In keeping with *Feist*’s allocation of burdens on plaintiffs, a leading copyright treatise observes that courts may require plaintiffs “to dissect the two works—separating protected, original expression from unprotectible ideas—to show that the defendant took more than just unprotectible elements.” Paul Goldstein, *Goldstein on Copyright* § 9.3.1 (3d ed. 2021). Because of the technical complexities in many software cases, the AFC test places “a special burden on the copyright owner to highlight the original and expressive elements that it claims are infringed.” *Id.* § 10.5.1.2. Accordingly, in *Automated Solutions Corp. v. Paragon Data Systems, Inc.*, 756 F.3d 504, 520-21 (6th Cir. 2014), the Sixth Circuit affirmed a grant of summary judgment to the defendant in a software copyright case because the plaintiff’s expert witness failed to distinguish between protectable

original expression in the software at issue and its unprotectable elements. *See also* Goldstein, *supra*, § 10.5.1.2 (citing case approvingly).

Precedents from many circuits place the burden of proving the copyrightability of particular elements of a work on the copyright holder as part of its required showing of “copying of constituent elements of the work that are original.” *Feist*, 499 U.S. at 361 (“The question is whether Rural has proved the second element [copying of constituent elements of Rural’s work that are original.]”); *see, e.g., Ho v. Taflove*, 648 F.3d 489, 499-500 (7th Cir. 2011); *Bateman v. Mnemonics, Inc.* 79 F.3d 1532, 1542 (11th Cir. 1996); *Computer Assocs. Int’l, Inc. v. Altai, Inc.*, 982 F.2d 693, 715 (2d Cir. 1992). *See generally* Lydia Pallas Loren & R. Anthony Reese, *Proving Infringement: Burdens of Proof in Copyright Infringement Litigation*, 23 Lewis & Clark L. Rev. 621 (2019).

As these authorities show, SAS is wrong to insist that WPL has the burden of proving unprotectability of the nonliteral elements at issue in this case.² It would

² SAS asserts that “the statute’s text, circuit courts, and treatises all agree” that defendants bear the burden of proving unprotectability of particular elements of works that plaintiffs allege are infringing. SAS Br. 39. Yet, it fails to cite statutory text or treatises in support of this proposition. The only circuit court decision on which that part of the brief relies is *Compulife Software Inc. v. Newman*, 959 F.3d 1288 (11th Cir. 2020). SAS admits that the Fifth Circuit has not endorsed this interpretation of copyright law, SAS Br. 39 n.3. *Amici* consider *Compulife* to be factually and legally distinguishable from this case because the former involved claims of literal infringement, while the latter is a nonliteral infringement case. The bulk of authority puts the burden plainly on the plaintiff to

especially be inappropriate to shift that burden from the copyright owner to the defendant given that courts have long recognized that computer programs embody “many logical, structural, and visual display elements that are dictated by the function to be performed, by considerations of efficiency, or by external factors such as compatibility requirements and industry demands.” *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1524 (9th Cir. 1993). Courts typically apply the AFC test, discussed *infra* Part III, to ensure that the trier of fact will focus only on whether the plaintiff has proven that the defendant improperly appropriated protectable expression from its work.

B. The Presumption of Originality Arising from Registration Applies to the First Two Meanings of Copyrightability, But Not the Third.

Promptly registering one’s claims of copyright with the U.S. Copyright Office gives rise to a presumption that there is sufficient original expression in a work to support a claim of copyright under 17 U.S.C. § 410(c). However, the Copyright Office makes clear that a “registration does not extend to uncopyrightable material that appears in a work of authorship, even if the registration does not contain an annotation or even if it contains ambiguous language that may refer to uncopyrightable material.” U.S. Copyright Office,

prove what if any protectable expression from its works it believes the defendant copied.

Compendium of U.S. Copyright Office Practices § 504.1 (3d ed. 2021). *See also* William F. Patry, *Patry on Copyright*, § 9:11 (2021). SAS wrongly conflates the copyrightability of the work as a whole with the copyrightability of particular elements of the work. *See* SAS Br. 40.

Registration supports a presumption of copyrightability in the first and second senses, but not the third. The Copyright Office has taken care to distinguish between the copyrightability of the registered work as a whole and the copyrightability of each element of that work: “Although uncopyrightable material, by definition, is not eligible for copyright protection, the Office may register a work that contains uncopyrightable material, provided that the work as a whole contains other material that qualifies as an original work of authorship.” U.S. Copyright Office, *Compendium, supra*, § 313. Cases involving nonliteral elements of computer programs have repeatedly recognized that copyrightability of the software as a whole does not bear on the copyrightability of particular elements. *See, e.g., Engineering Dynamics*, 26 F.3d at 1348 (recognizing that programs have thin protection because they embody so many unprotectable functional elements); *Oracle Am., Inc. v. Google Inc.*, 810 F. Supp. 2d 1002, 1009 (N.D. Cal. 2011).

III. Fifth Circuit Precedents Require Successive Filtration and Support the Use of Specialized Hearings to Assess Claims of Infringement in Nonliteral Software Copyright Cases.

Courts regularly require plaintiffs in copyright infringement cases to dissect their works to help the courts distinguish between protectable and unprotectable material. Goldstein, *supra*, § 9.3.1. The AFC test, adopted by the Fifth Circuit, is a long-established rule that aids courts in properly evaluating the protectability of specific expression alleged to be copied in the third sense of copyrightability. Jurisprudence on the AFC test correctly identifies copyrightability analysis as a question of law amenable to a judicial hearing. And to reach the comparison step of the AFC test, a plaintiff must do more than assert broadly that all elements at or below a certain level of abstraction are protectable. Sidestepping the AFC test by invoking “creative choices” is inconsistent with precedent and improper in result.

A. Fifth Circuit Precedents Direct District Courts to Apply the AFC Test.

For nearly thirty years, the AFC test has been the dominant methodology by which courts have judged claims of software copyright infringement. The Fifth Circuit first adopted the AFC test for assessing copyright infringement claims involving nonliteral elements of software in its 1994 *Engineering Dynamics* decision. The court drew this test from the Second Circuit’s landmark decision in *Altai*, 982 F.2d at 706-11, and from the Tenth Circuit’s further elucidation of the

test in *Gates Rubber Co. v. Bando Chemical Industries, Ltd.*, 9 F.3d 823, 834-39 (10th Cir. 1993). *Engineering Dynamics*, 26 F.3d at 1342-43. The Fifth Circuit has applied the AFC test in numerous subsequent cases. *See, e.g., Gen. Universal Sys., Inc. v. Lee*, 379 F.3d 131, 142 (5th Cir. 2004) (per curiam); *Computer Mgmt. Assistance Co. v. Robert F. DeCastro, Inc.*, 220 F.3d 396, 400-01 (5th Cir. 2000); *see also Nola Spice Designs, LLC v. Haydel Enters., Inc.*, 783 F.3d 527, 550 & n.6 (5th Cir. 2015). Indeed, the vast majority of circuits apply the AFC test, and *Altai* is widely and positively cited in every circuit other than the D.C. Circuit. *See* Pamela Samuelson, *A Fresh Look at Tests for Nonliteral Copyright Infringement*, 107 Nw. U. L. Rev. 1821, 1837-38 n.108 (2013).

The AFC test consists of three steps. The first step requires the court to dissect the plaintiff's program into various levels of abstraction. *Engineering Dynamics*, 26 F.3d at 1342-43 (citing *Gates Rubber*, 9 F.3d at 834). The highest level of abstraction in software cases is typically the main purpose of the program, and the lowest level is the software code, with some intermediate layers in most cases. *See Gates Rubber*, 9 F.3d at 835. The second step aims to identify the protectable and unprotectable elements of that program and to filter out the unprotectable elements. *Engineering Dynamics*, 26 F.3d at 1343. The third step involves comparing the protectable expression from the plaintiff's work that survived the filtration step to the defendant's work to determine whether the

defendant has improperly appropriated a sufficient quantum of protectable expression from the plaintiff's work to justify a finding of infringement. *Id.*

In keeping with Fifth Circuit precedents applying the AFC test, the unprotectable elements of computer programs include not only a program's main purpose, but also several categories of other elements that the court must filter out in accordance with well-established limitations on copyright scope. Among the unprotectable elements identified in *Altai* are those that are dictated by efficiency, those whose choices are constrained by external factors, such as the need to be compatible with other software, and those drawn from the public domain. *Altai*, 982 F.2d at 707-10. While *Engineering Dynamics* did not specifically enumerate these categories of unprotectable elements, they were identified in the *Altai* precedent that the Fifth Circuit adopted. 26 F.3d at 1342-43. Moreover, the Fifth Circuit later cited approvingly to *Gates Rubber* for the external factor constraint exclusions. *Engineering Dynamics, Inc. v. Structural Software, Inc.*, 46 F.3d 408, 410 n.2 (5th Cir. 1995). These categories have received widespread endorsement from courts and the Copyright Office. See U.S. Copyright Office *Compendium*, *supra*, § 721.7 (clarifying that computer program authorship does not extend to procedures, processes, systems, and methods of operation, which are excluded from protection under 17 U.S.C. § 102(b)). The *Compendium* further notes:

[T]he Office will not register the functional aspects of a computer program, such as the program's algorithm, formatting, functions,

logic, system design, or the like. Likewise, the Office will communicate with the applicant and may refuse registration if the applicant asserts a claim in uncopyrightable elements that may be generated by a computer program, such as menu screens, layout and format, or the like.

Id.

Courts have also directed filtration of facts, mathematical constants, elements unoriginal to the plaintiff, elements that are unprotectable under the merger and *scènes à faire* doctrines, algorithms, and other methods and processes excluded from copyright scope under 17 U.S.C. § 102(b). *See, e.g., Gates Rubber*, 9 F.3d at 836-38, *cited approvingly in Engineering Dynamics*, 26 F.3d at 1342-43. The Fifth Circuit has also recognized that there may be “other unprotectable elements suggested by the particular facts of the program under examination.” 26 F.3d at 1343 (quoting *Gates Rubber*, 9 F.3d at 834). Once the filtering process is complete, courts will generally have identified a “core of protectable expression” that can be considered during the comparison step. *Gen. Universal*, 379 F.3d at 143 (citing *Gates Rubber*, 9 F.3d at 841 (quoting *Altai*, 982 F.2d at 710-11)).

The main objective of the filtration step is to ensure that the comparison step, which is typically decided by the trier of fact, is based on the elements of protectable expression that have survived the filtration step. There is otherwise a risk that juries might unwittingly base findings of infringement on similarities as to unprotectable elements. *See, e.g., Christopher Jon Sprigman & Samantha Fink*

Hedrick, *The Filtration Problem in Copyright's "Substantial Similarity" Infringement Test*, 23 Lewis & Clark L. Rev. 571, 587 (2019). Judges sometimes decide the comparison step if they conclude that no reasonable jury could find infringement or if similarities between the two works concern only unprotectable elements of the plaintiff's work. See, e.g., *Warner Bros. Inc. v. Am. Broad. Cos.*, 720 F.2d 231, 239-40 (2d Cir. 1983). Indeed, if similarities between the works lie only or principally in unprotectable elements, there may be no need to proceed to the comparison step. See, e.g., *CSS, Inc. v. Herrington*, 306 F. Supp. 3d 857, 875 (S.D. W. Va. 2018); *Ilog, Inc. v. Bell Logic, LLC*, 181 F. Supp. 2d 3, 14 (D. Mass. 2002). Thus, the filtration step of the AFC test implements the third sense of copyrightability: It separates those elements of a work that are protectable expression from those that are not, in preparation for determining whether the protectable elements were infringed. Absent careful application of the filtration step, courts can easily err by mistaking the copyrightability of a work as a whole with the copyrightability of particular elements.

B. The Abstraction and Filtration Steps Are Questions of Law Properly Decided in a Specialized Hearing.

The abstraction and filtration steps of the AFC test are best understood as posing questions of law because they require a determination of the protectability of specific elements of the plaintiff's work. See *Engineering Dynamics*, 26 F.3d at

1342-43 (“The purpose of segmenting a computer program into successive levels of generality is to ‘help *a court* separate ideas [and processes] from expression and eliminate from the substantial similarity analysis those portions of the work that are not eligible for copyright protection” (quoting 3 *Nimmer on Copyright* § 13.03[F]) (emphasis added)); *Gen. Universal*, 379 F.3d at 142 (“*the court* filters out” unprotectable elements) (emphasis added); *Computer Mgmt. Assistance*, 220 F.3d at 401-02 (reviewing a district court’s performance of the abstraction and filtration steps as matters of law and performing those same steps itself as matters of law); *M-I LLC v. Q’Max Solutions, Inc.*, No. 4:18-cv-1099, 2020 WL 4549210, at *4-8 (S.D. Tex. Aug. 6, 2020) (applying the AFC test and determining that much of plaintiff’s work was unprotectable as a matter of law). *See also R. Ready Prods., Inc. v. Cantrell*, 85 F. Supp. 2d 672, 685-691 (S.D. Tex. 2000) (filtering out unprotectable material from plaintiff’s work as a matter of law); *Harbor Software, Inc. v. Applied Sys., Inc.*, 925 F. Supp. 1042, 1046 (S.D.N.Y. 1996) (considering filtration to be a matter of law and analogizing filtration to this Court’s holding in *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996)).

Because the abstraction and filtration steps are best understood as matters of law for courts to decide, it was proper for the district court to hold a hearing to consider the litigants’ proposed hierarchies of abstractions and their efforts to

identify protectable and unprotectable elements of the SAS program for the filtration step.³ Moreover, it is common in Fifth Circuit cases for plaintiffs, defendants, and their experts to engage in the type of filtering procedure that the district court required of both parties in *SAS*. See, e.g., *Nola Spice Designs*, 783 F.3d at 549-53; *M-I*, 2020 WL 4549210, at *4-8. Indeed, the filtration step, which determines the scope of protection for a copyrighted work, is highly analogous to claim construction that determines the scope of patent claims, and this Court has often endorsed specialized proceedings—*Markman* hearings—to assess the latter question of law. See, e.g., *Eon Corp. IP Holdings v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1318-20 (Fed. Cir. 2016); *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1359 (Fed. Cir. 2008); *EMI Grp. N. Am., Inc. v. Intel Corp.*, 157 F.3d 887, 891-92 (Fed. Cir. 1998). There was nothing improper about the district court, upon adopting a hierarchy of abstractions aligned with that in *Gates Rubber*, 9 F.3d at 835, and endorsed by the Fifth Circuit in *Engineering Dynamics*, 26 F.3d at 1342-43, requiring both parties to filter unprotectable elements in accordance with that hierarchy. Appx10-Appx12.

³ Courts generally make determinations about the protectability of specific elements of software when applying the AFC test in response to motions for summary judgment. See, e.g., *Gen. Universal*, 379 F.3d at 143-44. Both SAS and WPL made motions for summary judgment on copyrightability issues. See Appx5. The trial court’s characterization of the hearing in *SAS* as focused on “copyrightability” was not meaningfully different from the cross-summary judgment motions before it. *Id.*

The district court's consideration of expert testimony at the abstraction and filtration steps was also proper. In cases involving complex technologies such as software, courts often rely on expert witnesses to aid them in filtration analysis. *See, e.g., M-I*, 2020 WL 4549210, at *4-8 (relying on expert witnesses to help with filtration step); *Macro Niche Software, Inc. v. 4 Imaging Solutions, LLC*, No. 4:12-cv-2293, 2013 WL 12140417, at *5 (S.D. Tex. Dec. 18, 2013) (same); *Pepper v. Int'l Gaming Sys., LLC*, 312 F. Supp. 2d 853, 861 (N.D. Miss. 2004) (same). Experts can help courts understand at what levels of abstraction similarities and differences in the plaintiff's and defendant's programs lie. Experts can also help judges understand whether a particular data structure, for instance, even if original to the plaintiff's program, is so efficient that it should be filtered out as an unprotectable element. Finally, experts can also inform courts about technical standards, as well as industry practices and expectations, that may constrain developer design choices.

In sum, Fifth Circuit cases properly approach abstraction and filtration as questions of law amenable to decision by a judge relying on the parties' evidence and expert testimony. The district court's specialized hearing was consistent with that approach.

C. Dismissal of Infringement Claims Is Proper If Plaintiffs Fail to Identify Expressive Elements That Can Survive Filtration.

Under the AFC test, it is appropriate for the court to require the plaintiff to identify protectable material in its program that could be used as part of the final comparison step. Courts in the Fifth Circuit and elsewhere have regularly dismissed infringement cases when the plaintiff failed to provide evidence on filtration as the AFC test requires. *See, e.g., Gen. Universal*, 379 F.3d at 143-44 (affirming the district court’s grant of summary judgment to the defendant because “nowhere in its submission did [plaintiff] complete the *Altai* analysis necessary to evaluate claims that a program’s nonliteral elements were copied”); *Macro Niche*, 2013 WL 12140417, at *5 (summary judgment granted because the plaintiff failed to properly perform the abstraction and filtration steps by claiming that all elements in its work were protected); *Cisco Sys., Inc. v. Huawei Techs., Co.*, 266 F. Supp. 2d 551, 554 & n.1 (E.D. Tex. 2003) (rejecting plaintiff’s contention that it need not engage in the AFC analysis and denying a preliminary injunction because plaintiff refused to undertake an AFC analysis). *See also Automated Solutions*, 756 F.3d at 520-21 (affirming summary judgment for defendant after plaintiff’s expert failed to identify protectable elements in software); *R.C. Olmstead, Inc. v. CU Interface, LLC*, 606 F.3d 262, 275-76 (6th Cir. 2010) (same).

Dismissal is appropriate when a plaintiff refuses to identify specific protectable elements and engage in a meaningful filtration analysis, as the AFC test

requires. Here, SAS and its expert filtered out the two highest levels of its preferred hierarchy of abstractions, but deemed everything else protectable rather than identifying specific protectable elements. Appx635–Appx636. SAS’s opening brief in the copyrightability hearing appears to collapse the abstraction and filtration steps, using “levels” and “elements” interchangeably. Appx635 (referring to the first two “levels” and the third, fourth, and fifth “elements”). This approach again blurs the different meanings of copyrightability and misunderstands the nature of the AFC test, in which unprotectable elements must be filtered out at each level of abstraction. Indeed, the Nimmer treatise refers to the AFC test as “successive filtering analysis” for this reason. 4 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* § 13.03[F][1][c] (2021).

SAS’s failure to identify protectable expression that could survive successive filtration meant there was insufficient evidence to send to the jury for comparison. Sending the unfiltered program to the jury would undermine the AFC test’s main purpose, and copyright’s purpose more generally, of ensuring that the trier of fact considers only protectable expression in making its comparison. When a plaintiff fails to identify protectable elements for the comparison stage, a court may properly dismiss that plaintiff’s case.

D. Fifth Circuit Precedent Requires More Than “Creative Choices” to Establish Copyrightability.

Evidence of “creative choices,” SAS Br. 48, is insufficient to establish copyrightability in the third sense. Under binding Fifth Circuit case law, plaintiffs cannot establish the expressive originality of nonliteral elements of computer programs simply by showing the existence of other possible choices. *See, e.g., Engineering Dynamics*, 46 F.3d at 409 (clarifying that the earlier panel decision “did not say that in any case involving user interface the fact that the ‘author’ has selected from among possible formats is dispositive”); *Bateman*, 79 F.3d at 1546 n.29 (availability of alternatives not sufficient to show protectability). Nor does the exercise of judgment alone satisfy copyright’s originality standard, for the hallmark of copyright protection is originality of expression. It may take considerable creativity and judgment, for instance, to develop a mathematical model of a natural phenomenon, but that does not mean that the model and equations or figures that illustrate it are copyright-protectable expression. *See, e.g., Ho*, 648 F.3d at 497-98.

In an effort to satisfy this requirement of protectable expression, SAS cites *Engineering Dynamics* to support the claim that “input formats” and “output reports” are always protectable elements. SAS Br. 37-38. But that case offers no such support. Rather, the Fifth Circuit reversed a trial court ruling that input and output formats of computer programs were categorically ineligible for copyright

protection as a matter of law. *See Engineering Dynamics*, 26 F.3d at 1351, *rev'g* 785 F. Supp. 576, 582 (E.D. La. 1991). The appellate court simply held that input and output formats could be original enough to qualify for copyright protection, not that input and output formats necessarily were. Indeed, the Fifth Circuit remanded the case so that the district court could conduct further proceedings to assess the copyrightability of those formats. It recognized that input and output formats were highly technical reports of engineering data and speculated that they might be “so inherently functional as not to be protectible.” *Id.* at 1350 n.16.

On remand, the district court found that Engineering Dynamics (EDI) failed to prove that the input and output formats at issue were copyright-protectable. Order and Reasons at 29-32, *Engineering Dynamics, Inc. v. Structural Software, Inc.*, No. 2:89-cv-1655 (E.D. La. May 1, 2001). The court found some formats to be in the public domain because they had been in the same order in a public domain version of the software. *Id.* at 9, 19-20. Some were “so generic in nature as to be incapable of being protected.” *Id.* at 24. Although an EDI witness asserted that the formats were creative, he did not say in what respects or why, relying on the bare assertions of creativity and the availability of alternatives. *Id.* at 15-16. EDI had, moreover, failed to introduce evidence in support of some of its input and output format claims. *Id.* at 28. The court regarded the order of the output reports

as unoriginal because they were determined by EDI's software. *Id.* at 29. Nor was the court persuaded by EDI's compilation claim. *Id.* at 29-30.

Properly understood, *Engineering Dynamics* does not support SAS's argument.

IV. Careful Application of the AFC Test with Due Regard for the Different Meanings of Copyrightability Furthers the Constitutional Purposes of Copyright Law.

Careful application of the AFC test and its requirement that protectable and unprotectable nonliteral elements of a computer program be identified during the filtration step are consistent with the purposes of copyright law: to promote the ongoing creation, dissemination, and enjoyment of works of authorship and expression. In *Altai*, the Second Circuit concluded that the AFC test “not only comports with, but advances the constitutional policies underlying the Copyright Act.” 982 F.2d at 711. Application of the AFC test ensures that copyright law maintains a socially beneficial balance between protecting the interests of first-generation creators and leaving room for “the free use and development of non-protectable ideas and processes.” *Id.* The Supreme Court reaffirmed this balance in *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1195 (2021), observing that copyright, while meant to “encourage the production of works,” must also take care to avoid “stand[ing] in the way of others exercising their own creative powers.” The district court's application of the AFC test aligns with this principle,

leaving room for the downstream creativity of users who have developed programs in the SAS Language and of WPL for its successful emulation of the SAS program because they promote copyright's constitutional purposes. *Cf. Google*, 141 S. Ct. at 1203 (allowing programmers to port their work to different computing environments is "consistent with that creative 'progress' that is the basic constitutional objective of copyright itself").

A. Authors of Programs Developed in the SAS Language Should Be Free to Migrate Their Programs to Another Platform.

In assessing the public and private interests at stake in this case, this Court should give due attention to the interests of the statisticians, researchers, and software developers that use the SAS Language. These users have invested significant amounts of time in learning the SAS Language and creating many different innovative programs using that Language to carry out specific types of statistical analyses. They should be free to utilize their programs and acquired knowledge of the SAS Language on the platform of their choice because allowing them to do so promotes the purposes of copyright law.

Similar considerations contributed to the First Circuit's decision in *Lotus v. Borland* to rule against Lotus' claim that Borland infringed copyright by replicating the Lotus 1-2-3 command hierarchy in Quattro Pro. The court recognized that the Lotus commands had to be in the same order in the Borland

program so that macro programs that users had created in the Lotus macro language could successfully run on the Borland platform. 49 F.3d at 817. The First Circuit thought that users should not be forced to rewrite the macros they had created to run on a different platform. *Id.* at 818.

The Supreme Court's *Google* decision also emphasized the constitutional significance of allowing users to reuse their acquired knowledge of a programming language and application programming interface in a computing environment of their choice. Allowing Oracle to enforce the copyright in question, in light of those user investments, "would risk harm to the public" and "would interfere with, not further, copyright's basic creativity objectives." *Google*, 141 S. Ct. at 1208. This was so even though the Court recognized that upholding that copyright claim "could well prove highly profitable" to the copyright owner, since "those profits could well flow from creative improvements, new applications, and new uses developed by users who have learned to work with" the copyrighted software. *Id.*

While SAS may wish to profit from its users' investments, the Supreme Court has made clear that there is "no reason to believe that the Copyright Act seeks to protect third parties' investment in learning how to operate a created work," at least on behalf of the created work's owner. *Id.* at 1208.

B. Competitors Have Often Developed Programs That Emulate the Functionality of Another Program.

There is a long history in the software industry of second comers developing programs that emulate the functionality of an existing program as legitimate, socially beneficial, and consistent with copyright’s constitutional balancing of the interests of first-generation creators and those of follow-on innovators. One of the earliest and most famous examples was Phoenix Technologies’ reimplementation of the IBM PC’s BIOS (Basic Input-Output System) that enabled the PC revolution. Phoenix carefully documented its “clean room” development process so that IBM could not complain that it copied any IBM code. *See, e.g., Jonathan Band, Interfaces on Trial 3.0: Google v. Oracle America and Beyond* 188 (2021). As a report by the Copyright Office concluded, Phoenix’s reimplementation enabled the creation of IBM-compatible computers, demonstrating how § 102(b) “has served a critical function in preserving competition.” U.S. Copyright Office, *Software-Enabled Consumer Products* 53 (2016); *see Band, supra*, at 188-89.

Some software developers have tried to thwart emulation by claiming copyright infringement when competitors have built emulation software. Courts have frequently rebuffed these claims in light of copyright’s goal of allowing follow-on creators to compete and build upon the non-protectable elements of another party’s software. Sony once tried unsuccessfully to stop Connectix from emulating the functionality of its PlayStation platform so that owners of games for

that platform could run the games on Connectix's alternative platform. *See Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596, 598-99 (9th Cir. 2000). The court rejected Sony's attempt to prevent legitimate competition and thwart reuse of unprotectable, functional elements of its platform. *See id.* *See also Bateman*, 79 F.3d at 1546-48 (reversing judgment for plaintiff for failure to consider defendant's need to be compatible with and emulate the functionality of Bateman's operating system program so its application program could still be executed); *Secure Servs. Tech., Inc. v. Time & Space Processing, Inc.*, 722 F. Supp. 1354, 1363 (E.D. Va. 1989) (finding emulation of secure fax machine software was not infringement because protocol variations not protectable); *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q. 2d 1177, 1189 (N.D. Cal. 1989) (finding emulation of Intel microcode was not infringement).

In this case, as *Amici* understand it, WPL has emulated the functionality of the SAS software so that users of the SAS Language can repurpose their acquired knowledge and technological acumen in the Language on a platform other than SAS's.⁴ Such legitimate competition based on non-protectable interests is precisely what many courts have permitted, all in pursuance of copyright's goal of promoting, rather than hindering, societal progress. Indeed, the Supreme Court

⁴ *See, e.g., SAS Institute Inc. v. World Programming Ltd.*, Case C-406/10 [2012] ¶ 46 (CJEU rejecting SAS's claim that WPL infringed its copyright because of the many similarities in the functional behavior of the SAS and WPL programs).

recently expressed concern about granting one party through copyright “a lock limiting the future creativity of new programs.” *Google*, 141 S. Ct. at 1208. The district court’s decision helps unlock WPL’s and other parties’ creative energies, thereby aligning with copyright’s ultimate objective of promoting, rather than hindering, creativity.

C. SAS Should Not Be Able to Indirectly Claim Copyright in the SAS Language.

Allowing SAS to exercise control over uses of the SAS Language runs counter to the legitimate interests of user-creators and of fair competition, particularly because SAS failed to identify the legitimately protectable elements of its program during the filtration process. SAS should not be allowed to achieve indirectly what it has thus far failed to accomplish directly or indirectly in prior litigation in other venues. Although SAS has not explicitly claimed copyright in the SAS Language in this lawsuit, it did so in almost identical software copyright lawsuits against WPL in other forums. These claims failed. The Court of Justice of the European Union ruled that the SAS Language was not a protectable element of the SAS software. *See SAS Institute Inc. v. World Programming Ltd.*, Case C-406/10 [2012] ¶ 46. The UK High Court on remand explained why programming languages such as SAS’s are incapable of being a copyrightable work. Appx1493 (¶33). A programming language is a resource from which new works can be

created, not a work as such. “[W]hat [a programming language] amounts to is a system of rules for the generation and recognition of meaningful statements.” *Id.*

In another nearly identical lawsuit, a district court in North Carolina ruled against SAS’s copyright infringement claim in part because it viewed SAS as seeking copyright protection over software language functions that are freely used by programmers of the SAS Language. *SAS Institute, Inc. v. World Programming Ltd.*, 64 F. Supp. 3d 755, 776 (E.D.N.C. 2014), *aff’d in part, vacated in part on other grounds*, 874 F.3d 370 (4th Cir. 2017). In that case, SAS seems to have accepted the trial court’s statements that “[a]nyone can write a program in the SAS Language, and it is undisputed that no license is needed to do so.” 64 F. Supp. 3d at 762. Yet, the court may have viewed SAS as trying to indirectly protect the language insofar as similarities in the SAS and WPL programs’ outputs “only serve[] to establish that when defendant’s software compiles and interprets SAS Language programs input by users, it does so properly.” *Id.* at 776. Consequently, it granted WPL’s motion for summary judgment. *Id.* at 776-78.

In reviewing the decision below, this Court should critically examine whether SAS’s input-output claims in this case should be resolved in the same way. Doing otherwise risks undermining the legitimate interests of the SAS Language’s users in pursuing socially beneficial creativity in accordance with copyright law’s constitutional purposes.

CONCLUSION

The district court's decision respected the distinct meanings of copyrightability and properly focused on whether SAS had sufficiently identified protectable nonliteral elements that WPL had copied. This Court should affirm.

Dated: August 30, 2021

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

The foregoing filing complies with the relevant type-volume limitation of the Federal Rules of Appellate Procedure and Federal Circuit Rules because it has been prepared using a proportionally spaced typeface and includes **6,972** words, excluding any items listed as exempted under Fed. R. App. P. 5(c), Fed. R. App. P. 21(d), Fed. R. App. P. 27(d)(2), Fed. R. App. P. 32(f), or Fed. Cir. R. 32(b)(2).

Dated: August 30, 2021

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