United States Copyright Office

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September 27, 2019

Jeffrey S. Whittle, Esq.
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609 Main Street, Suite 4200
Houston, TX 77002

> **Re:**   **Second Request for Reconsideration of Refusal to Register
> "nazStreetwise.mib" Correspondence ID: 1-31ZTZRS; SR # 1-5900194675**

Dear Mr. Whittle:

The Review Board of the United States Copyright Office ("Board") has considered
Trafficware Group, Inc.'s ("Trafficware's") second request for reconsideration of the
Registration Program's refusal to register a computer program claim in the work titled
"nazStreetwise.mib" ("Work"). After reviewing the application, deposit copy, and relevant
correspondence, along with the arguments in the second request for reconsideration, the Board
affirms the Registration Program's denial of registration.

I.   DESCRIPTION OF THE WORK

The Work is a Management Information Base ("MIB") computer program containing
source code that defines MIB data objects used by traffic signal controllers. In twenty lines, the
source code defines three object types: "streewiseBufferAccess," "streetwiseReportInfo," and
"streetwiseTransfer." An identical arrangement of the same seven words appears under each
object to define the object. Four out of twenty lines are redacted. A reproduction of the Work in
full is depicted below.

```
--streetwise.mib
--
--Copyright (c) 2005.  Naztec, Inc.  Sugar Land, Texas
--All Rights Reserved.
--
--
--
--Unlicensed use or duplication of this MIB in any form
--is strictly prohibited.  All unlicensed use will be prosecuted.
--
--
--

NaztecStreetwise DEFINITIONS ::= BEGIN
    --the following OBJECT IDENTIFIERS are used in the NAZTEC ASC MIB:
XXXXXXXXXXXXXXX

    --This node contains objects that configure, monitor or control phase functions
    --specific to the Naztec controller.
    streetwiseBufferAccess OBJECT-TYPE
        SYNTAX          OCTET STRING
        ACCESS          read-write
        STATUS          mandatory
        XXXXXXXXXXXXXXXXXXXXXXX

    streetwiseReportInfo OBJECT-TYPE
        SYNTAX          OCTET STRING
        ACCESS          read-write
        STATUS          mandatory
        XXXXXXXXXXXXXXXXXXXXXX

    streetwiseTransfer OBJECT-TYPE
        SYNTAX          OCTET STRING
        ACCESS          read-write
        STATUS          mandatory
        XXXXXXXXXXXXXXXXXXXXXX


END
```

II.   ADMINISTRATIVE RECORD

On October 13, 2017, Trafficware filed an application to register a copyright claim in the Work. In a December 7, 2017, letter, a Copyright Office registration specialist refused to register the claim, finding that the Work "does not contain the minimum amount of authorship required for registration." Letter from Kristen O., Registration Specialist, U.S. Copyright Office, to Sarah Robertson, Dorsey & Whitney LLP (Dec. 7, 2017).

In January 2, 2018 letter, Trafficware requested that the Office reconsider its initial refusal to register the Work, arguing that the work "contains a particular set of data objects for a communications protocol used by actuated traffic signal controllers—from among unlimited options—reflecting the author's protectable expression." Letter from Jeffrey S. Whittle, Hogan Lovells US LLP, to U.S. Copyright Office at 2 (Jan. 2, 2018) ("First Request"). Trafficware described the original authorship as "creating the instructions that appear within the Work, ordering and grouping the instructions in the Work, and choosing the material that is included in the Work." First Request at 2. The Office re-evaluated the claims and again concluded that the Work "does not contain a sufficient amount of original and creative authorship to support a copyright registration." Letter from Stephanie Mason, Attorney-Advisor, U.S. Copyright Office, to John Yates, Hogan Lovells US LLP at 1 (June 6, 2018). Noting that the "visible code consists of a few words and short phrases, repeated three times," the Office concluded that "the individual words and short phrases that make up *nazStreetwise.mib* do not exhibit a sufficient amount of original and creative authorship to support a copyright registration" *Id*. at 2.

In a September 4, 2018 letter, Trafficware requested that, pursuant to 37 C.F.R. § 202.5(c), the Office reconsider for a second time its refusal to register the Work. Letter from Jeffrey S. Whittle, Hogan Lovells US LLP, to U.S. Copyright Office (Sept. 4, 2018) ("Second Request"). Trafficware maintained that the computer program is not a word or short phrase and argued that the Work itself is made up of individual copyrightable elements. Trafficware contended the author had "many choices available to it when creating a program to configure, monitor, and control phase functions for a particular controller." *Id.* at 2. Those choices, Trafficware argued, were creative, and not strictly functional. *Id.*

III.   DISCUSSION

A. *The Legal Framework*

1) *Computer Programs*

The Copyright Act protects "original works of authorship fixed in any tangible medium or expression, now known or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device." 17 U.S.C. § 102(a). The term "works of authorship" includes "literary works," *id.*, which are in turn defined as works "expressed in words, number, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects . . . in which they are embodied." *Id*. § 101. It is well-settled that Congress intended to protect "computer data bases, and computer programs" under copyright law, and that for purposes of section 102(a), these types of works would be classified as literary works. H.R. REP. NO. 1476, 94th Cong., 2d Sess. 54, *reprinted in* 1976 U.S.C.C.A.N. 5659, 5667; *see* Pub. L. No. 96-517 § 10(a)-(b), 94 Stat. 3015, 3028-29 (1980). Section 101 defines a "computer program" as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." Various other Copyright Act provisions confirm that a person may own a copyright in a "computer program." *See, e.g.*, 17 U.S.C. §§ 109(b)(1)(A), 117, 506(a)(3)(A).

Computer programs typically contain both literal and non-literal elements. The literal

elements include the source code and object code constituting the program. The non-literal elements may include the architecture of the computer program; the structure, sequence, and organization of the program; the relationships and interconnections between these elements; and any flow charts that illustrate these relationships, as well as the user interface. *See Engineering Dynamics Inc. v. Structural Software, Inc.*, 26 F.3d 1335, 1341 (5th Cir. 1994); *Gates Rubber Co. v. Bando Chemical Industries*, 9 F.3d 823, 835 (10th Cir. 1993); *Computer Associates International, Inc. v. Altai, Inc.*, 982 F.2d 693,702 (2d Cir. 1992). Courts have recognized that both the literal and non-literal elements of a program may be eligible for copyright protection under section 102(a) of the Act. *See, e.g.*, *Computer Associates*, 982 F.2d at 702 (source and object code protectable); *Computer Management Assistance Co. v. DeCastro*, 220 F.3d 396, 400 (5th Cir. 2000) (literal and non-literal elements protectable).

When assessing the registrability of a computer program, the Copyright Office looks to whether the deposited code is in source code or object code. Source code is a "set of statements and instructions written by a human being using a particular programming language," and is generally legible to humans. COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 721.3 (3d ed. 2017) ("COMPENDIUM (THIRD)"). Before a computer can execute source code, "the source code form of the software must be translated, usually via a computer program known as a 'compiler,' into object code, [which] is directly executable by a computer, but generally unintelligible to humans." *Operating System Support, Inc. v. Wang Laboratories, Inc.*, 52 Fed. App'x 160, 162 (3d Cir. 2002).

2) *Originality*

A computer program, or any other work, may be registered if it qualifies as an "original work[] of authorship fixed in any tangible medium of expression." 17 U.S.C. § 102(a). In this context, the term "original" consists of two components: independent creation and sufficient creativity. *See Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340, 345 (1991). First, the work must have been independently created by the author, *i.e.*, not copied from another work. *Id.* Second, the work must possess sufficient creativity. *Id.* Only a modicum of creativity is necessary, but the Supreme Court has ruled that some works (such as the alphabetized telephone directory at issue in *Feist*) fail to meet even this low threshold. *Id.* The Court observed that "[a]s a constitutional matter, copyright protects only those constituent elements of a work that possess more than a *de minimis* quantum of creativity." *Id.* at 363. It further found that there can be no copyright in a work in which "the creative spark is utterly lacking or so trivial as to be virtually nonexistent." *Id.* at 359.

The Office's regulations implement the longstanding requirement of originality set forth in the Copyright Act and described in the *Feist* decision. *See, e.g.*, 37 C.F.R. § 202.1(a) (prohibiting registration of "[w]ords and short phrases such as names, titles, slogans; familiar symbols or designs; [and] mere variations of typographic ornamentation, lettering, or coloring"); *id*. § 202.10(a) (stating "to be acceptable as a pictorial, graphic, or sculptural work, the work must embody some creative authorship in its delineation or form"). Some combinations of common or standard design elements may contain sufficient creativity with respect to how they are juxtaposed or arranged to support a copyright. Nevertheless, not every combination or arrangement will be sufficient to meet this test. *See Feist,* 499 U.S. at 358 (finding the Copyright

Act "implies that some 'ways' [of selecting, coordinating, or arranging uncopyrightable material] will trigger copyright, but that others will not"). A determination of copyrightability in the combination of standard design elements depends on whether the selection, coordination, or arrangement is done in such a way as to result in copyrightable authorship. *Id.*; *see also Atari Games Corp. v. Oman*, 888 F.2d 878 (D.C. Cir. 1989).

A mere simplistic arrangement of non-protectable elements does not demonstrate the level of creativity necessary to warrant protection. For example, the United States District Court for the Southern District of New York upheld the Copyright Office's refusal to register simple designs consisting of two linked letter "C" shapes "facing each other in a mirrored relationship" and two unlinked letter "C" shapes "in a mirrored relationship and positioned perpendicular to the linked elements." *Coach, Inc. v. Peters*, 386 F. Supp. 2d 495, 496 (S.D.N.Y. 2005). Likewise, the Ninth Circuit has held that a glass sculpture of a jellyfish consisting of clear glass, an oblong shroud, bright colors, vertical orientation, and the stereotypical jellyfish form did not merit copyright protection. *See Satava v. Lowry*, 323 F.3d 805, 811 (9th Cir. 2003). The language in *Satava* is particularly instructive:

> It is true, of course, that a *combination* of unprotectable elements may qualify for copyright protection. But it is not true that *any* combination of unprotectable elements automatically qualifies for copyright protection. Our case law suggests, and we hold today, that a combination of unprotectable elements is eligible for copyright protection only if those elements are numerous enough and their selection and arrangement original enough that their combination constitutes an original work of authorship.

Id. (internal citations omitted).

3) *Systems, Methods of Operation, and Merger*

Section 102(b) of the Copyright Act provides that the copyright in a work does not "extend to any idea, procedure, process, system, method of operation, concept, principle or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b). This section codifies the longstanding principle, first originated by the Supreme Court in *Baker v. Selden*, that while copyright law protects the original expression of ideas it does not extend to protect the underlying ideas themselves. 101 U.S. 99, 102, 104 (1879) (holding that a copyright in a book describing a bookkeeping system with blank forms protected only how the rightsholder "explained and described a peculiar system of book-keeping" and did not grant the right to prevent others from using the system described in this book or "the exclusive right to make, sell, and use account-books prepared upon the plan set forth in such book.").

A closely related principle, also stemming from *Baker*, is the merger doctrine. When there is only one way, or only a limited number of ways, to convey the idea that the author seeks to express, the author's expression cannot be protected under copyright law because that would result in a monopoly over the idea itself and prevent others from using that same idea in other works. *See* 1 MELVILLE & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.18[C][2] (2014). On

the other hand, the fact that one author has copyrighted one expression of an idea will not prevent other authors from creating and copyrighting their own expressions of the same idea. *See* 1 PAUL GOLDSTEIN, GOLDSTEIN ON COPYRIGHT § 2.3.2 (2015). Thus, the Office's regulations expressly preclude registration of "methods [or] systems . . . as distinguished from the particular manner in which they are expressed or described in a writing." 37 C.F.R. § 202.l(c); *see also* COMPENDIUM (THIRD) § 313.4(G). To ensure that merger should not prevent registration, the Office examines works to determine whether they contain "an appreciable amount of written or artistic expression" that can be separated from the work's underlying idea. COMPENDIUM (THIRD) § 313.4(G).

4) *Scènes à Faire and External Constraints*

Scènes à faire is a common law principle that limits the scope of copyright in works that otherwise qualify for copyright protection. *See, e.g.*, 4 NIMMER ON COPYRIGHT § 13.03[B][4] (2018); GOLDSTEIN ON COPYRIGHT § 2.3.2.2 (2015). It provides that the expressive elements of a work are not entitled to protection if they are standard, stock, or common to a particular topic, or if they necessarily follow from a common theme or setting. Courts have recognized that extending copyright protection to the necessary incidents of a particular theme or setting would grant a monopoly to the first person who adopted that form of expression. In that sense, *scènes à faire* and merger both serve the same purpose by limiting the scope of an author's copyright where there are limited ways to express a particular idea.

Although courts first applied *scènes à faire* in cases involving dramatic works, the doctrine has been extended to computer programs. For example, courts have recognized that *scènes à faire* may limit or even eliminate protection for elements of a program that are dictated by external factors or by efficiency concerns, such as the mechanical specifications of the computer that runs the program, compatibility requirements of other programs that the program is intended to work with, hardware design standards that have been adopted by computer manufacturers, widely accepted programming techniques within the computer industry, as well as the demands of the industry that is expected to use the program. *See, e.g*., *Lexmark International Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 535–36 (6th Cir. 2004) (outlining applicability of doctrine to computer programs and addressing functionality of "lock-out" codes); *Computer Management Assistance Co.,* 220 F.3d at 400-01 (same, considering stock industry demands in connection with program for tracking orders, inventory, and promotional pricing); *Mitel, Inc. v. Iqtel, Inc*., 124 F.3d 1366, 1374–75 (10th Cir. 1997) (addressing hardware compatibility requirements and industry practices); *Apple Computer, Inc. v. Microsoft Corp*., 35 F.3d 1435, 1444 (9th Cir. 1994) (finding that overlapping windows were a "clear preference" in graphic interfaces); *Altai*, 982 F.2d at 709, 715 (outlining doctrine in context of programmed organizational charts).

B. Analysis of the Work

After careful examination, the Board finds that the Work fails to satisfy the requirement of creative authorship and thus is not copyrightable.

To register a computer program with source code that is less than fifty pages, "the applicant may submit the entire code with the portions of the code that contain trade secret material blocked out." COMPENDIUM (THIRD) § 1509.1(C)(4)(b). The remaining portions, however, must "possess more than a *de minimis* quantum of creativity," and the blocked out portions must be proportionately less than the remaining material. *Feist*, 499 U.S. 340, 363; COMPENDIUM (THIRD) § 1509.1(C)(4)(b). Pursuant to Office practices, the Board examined the perceptible portions of the Work and finds that neither the Work's constituent elements nor the aggregate of those elements, taken as a whole, meet this low threshold.

The Work is twenty lines of source code; four lines are redacted. The remaining sixteen lines reveal a simplistic rendering of a file defining three data objects ("STREEWISEBUFFERACCESS," "STREETWISEREPORTINFO," and "STREETWISETRANSFER"). Using an adapted subset of Abstract Syntax Notation One, ASN.1 (1988), the Work defines each object with an identical arrangement of the same three clauses (SYNTAX, ACCESS, and STATUS) and values (OCTET STRING, READ-WRITE, and MANDATORY). *See* K. McCloghrie, et al., *Structure of Management Information Version 2 (SMIv2)*, Internet Engineering Task Force Request for Comments 2578 (Apr. 1999), https://tools.ietf.org/html/rfc2578 ("RFC 2578"). Though Trafficware claims that the Work is made up of individual copyrightable elements, the Board disagrees. *See* Second Request at 2. The Work's constituent elements, which include the names of the "STREETWISE" branded data objects and their corresponding clauses and values, are words and short phrases. These elements are not individually subject to copyright protection. *See* 37 C.F.R. § 202.1(a) (prohibiting registration of "[w]ords and short phrases"); COMPENDIUM (THIRD) § 313.4(C) (3d ed. 2017) (providing that the Office cannot register "brief combinations of words, even if the word or short phrase is novel or distinctive").

Further, viewed as a whole, the combination and arrangement of the elements that comprise the Work do not rise to the level of creativity required by the Copyright Act. *See Feist*, 499 U.S. at 359. As explained above, combinations of unprotectable elements may be eligible for copyright registration. But such combinations must contain some distinguishable variation in the selection, coordination, or arrangement of their elements that is not so obvious or minor that the "creative spark is utterly lacking or so trivial as to be nonexistent." *Id.*; *see also Atari Games*, 888 F.2d at 883. Trafficware argues that the selection and arrangement of the lines reflect specific creative decisions, which involved "creating the instructions that appear within the Work, ordering and grouping the instructions in the Work, and choosing the material that is included in the Work." First Request at 2. But the Work merely contains an identical arrangement of the same set of instructions beneath three data objects. The brief explanatory text and object names—"STREEWISEBUFFERACCESS," "STREETWISEREPORTINFO," and "STREETWISETRANSFER"—provide the only variation to the combination and arrangement of the instructions. Thus, the Work exhibits *de minimis* literary authorship insufficient to render the Work copyrightable. *See Feist,* 499 U.S. at 358 (explaining that "some 'ways' [of selecting, coordinating, or arranging uncopyrightable material] will trigger copyright, but that others will not."); COMPENDIUM (THIRD) § 313.4(B) ("Works that contain no expression or only a *de minimis* amount of original expression are not copyrightable and cannot be registered with the U.S. Copyright Office.").

Trafficware's arguments to the contrary actually reinforce this conclusion. First, Trafficware argues that the author had "many choices available to it when creating a program to configure, monitor, and control phase functions for a *particular controller*." Second Request at 2 (emphasis added). But the fact that the Work was configured to a "particular controller" suggests that the author's creative choices were, at least in part, dictated by compatibility requirements in addition to the protocol requirements defined in RFC 2578. These external factors as applied to this brief Work contribute to the demonstrated lack of creative authorship. *See, e.g., Lexmark*, 387 F.3d at 535 (noting that "elements of a program dictated by practical realities—*e.g.*, by hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, target industry practices, and standard computer programming practices—may not obtain protection"). In making this determination, the Board does not foreclose the possibility that a brief computer program could exhibit sufficient creativity to warrant protection. However, "unless a creative flair is shown, a very brief program is less likely to be copyrightable because it affords fewer opportunities for original expression." *Lexmark*, 387 F.3d at 542-43 (finding computer program that consisted of eight commands not copyrightable). Here, there is simply not enough creative literary authorship in the Work to warrant copyright protection.

Second, Trafficware asserts that the Work is protectable when compared to other works granted copyright protection by certain courts. *See* First Request at 5. The Office does not compare works. *See* COMPENDIUM (THIRD) § 309.3. Instead, each claim is examined on its own merits, with the Office applying uniform standards of copyrightability at each stage of review. The Review Board notes, however, that the cases Trafficware points to are unpersuasive insofar as they concern two- and three-dimensional artwork. *See Runstadler Studios, Inc. v. MCM Ltd. P'ship*, 768 F. Supp. 1292, 1295-96 (N.D. Ill. 1991) (sculpture); *Paul Morelli Design, Inc. v. Merit Diamond Corp.*, 2003 WL 22300163 (Ed. D. Pa. 2003) (jewelry); *M. Lady, LLC v. AJI, Inc.*, 2007 WL 2728711 (S.D.N.Y. 2007) (jewelry); *Ward v. Andrews McMeel Pub.*, LLC, 963 F. Supp. 2d 222 (S.D.N.Y. 2013) (two-dimensional artwork). The Board similarly finds unpersuasive Trafficware's reference to *GlobeRanger Corp. v. Software AG*, which concerns a computer program consisting of "*several dozen* input formats." Second Request at 2 (citing *GlobeRanger*, 691 F.3d 702, 707–08 (5th Cir. 2012) (emphasis added)). The Work at issue falls short of the authorship expressed in that case.

Therefore, the Board concludes that the Work—a computer program consisting of sixteen perceptible code lines—lacks the modicum of creativity required by *Feist*.

IV.   CONCLUSION

For the reasons stated herein, the Review Board of the United States Copyright Office affirms the refusal to register the copyright claim in the Work. Pursuant to 37 C.F.R. § 202.5(g), this decision constitutes final agency action in this matter.

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U.S. Copyright Office Review Board
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    and Director, U.S. Copyright Office
Regan A. Smith, General Counsel and
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Catherine Zaller Rowland, Associate Register of
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