F I L E D
United States Court of Appeals
Tenth Circuit

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PATRICK FISHER
Clerk

PUBLISH

UNITED STATES COURT OF APPEALS

TENTH CIRCUIT

MITEL, INC., a Delaware corporation,

Plaintiff - Appellant,

v.

IQTEL, INC., a Colorado corporation,

Defendant - Appellee.

No. 95-1394

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
(D. Ct. No. 95-B-900)

Eric C. Cohen, Welsh & Katz, Chicago, Illinois (Robert B. Breisblatt and Joseph R. Marcus, Welsh & Katz, Chicago, Illinois, and Carole K. Jeffery, Davis, Graham & Stubbs, Denver, Colorado, with him on the briefs), appearing for Plaintiff-Appellant.

Dennis A. Graham (Robert R. Marshall, Jr., Harold R. Bruno, III, M. Gabriel McFarland, with him on the briefs), Hopper and Kanouff, Denver, Colorado, appearing for Defendant-Appellee.

Before TACHA, GODBOLD,* and HOLLOWAY, Circuit Judges.

TACHA, Circuit Judge.

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*The Honorable John C. Godbold, Senior Circuit Judge, United States Court of Appeals for the Eleventh Circuit, sitting by designation.

INTRODUCTION

Plaintiff Mitel, Inc. ("Mitel") appeals the denial of its motion for a preliminary injunction in this action for copyright infringement. 17 U.S.C. § 502(a). At issue is the protectability of a set of four-digit numeric instructions known as "command codes." Mitel created these command codes to access the features of a piece of telecommunications hardware known as a call controller.

Mitel contends that the district court erred in denying its motion for a preliminary injunction based upon the court's conclusion that Mitel failed to demonstrate a substantial likelihood that it will prevail on the merits of its claim. See Mitel, Inc. v. Iqtel, Inc., 896 F. Supp. 1050, 1054 (D. Colo. 1995). Specifically, Mitel argues that the district court erred by concluding that (1) Mitel's command codes are unprotectable under 17 U.S.C. § 102(b) because they are a "procedure process, system, [or] method of operation"; (2) Mitel's command codes are unprotectable under the scenes a faire doctrine; and (3) Iqtel's use of the command codes is a fair use under the Copyright Act, 17 U.S.C. § 107. We exercise jurisdiction pursuant to 28 U.S.C. § 1292(a)(1) and affirm.

BACKGROUND

Mitel and Iqtel manufacture competing call controllers. A call controller is a piece of computer hardware that enhances the utility of a telephone system by

automating the selection of a particular long distance carrier and activating

optional features such as speed dialing. Typically, a long distance carrier

purchases a call controller from a manufacturer like Mitel or Iqtel and installs it

on the premises of its business customer to automate that customer's access to the

carrier's long distance service.

I.   Mitel's Call Controller and Command Codes

Mitel began manufacturing the Smart-1 call controller for sale in 1985. In

order to activate and manipulate the features of its call controller, Mitel devised

an instruction set of over sixty four-digit numeric command codes. Mitel

published and copyrighted manuals describing how to program its call controller

by using these command codes.

A technician activates features of a call controller by dialing the four-digit

command code for a particular controller function on a touch-tone telephone or a

computer keyboard connected to the call controller. The numeric value of each

digit of a command code is generally limited to the keys on a telephone keypad,

i.e., 0-9, *, and #.[1]

Each command code may be broken down into separate parts, the names

and particular definitions of which are important to our analysis. The first three

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[1] A very limited number of functions also permit the entry of a letter (e.g., C, D, E, or F) to set a function at a particular level of operation. Such entry, however, may only be accomplished by utilizing a computer keyboard and not a telephone keypad.

digits of a command code are known together as the "register." For most of Mitel's codes, two digits of each three-digit register arbitrarily identify the particular function selected. A third digit may identify the particular telephone line to be accessed or the preprogrammed "route" that a call will take through the public telephone network to its destination. Mitel numbers telephone lines and routes sequentially. For example, the register "X27" identifies the function "Time to Auto Answer." By activating this function a technician may specify the period of time the controller waits before answering an incoming call after it detects ringing. The "X" indicates the number of the telephone line for which the feature will be activated, 1-4 or 5 for all lines. Were a technician to enter 427, the controller would understand that the technician wished to set the period of time to wait before answering calls ringing on line four.

Mitel's other registers identify features that do not apply to particular lines or routes. The functions accessed by this latter group are identified by a leading "0" followed by two arbitrary digits that represent the function to be accessed. For example, 006 stands for "RS-232 Baud Rate." Were a technician to enter 006, the controller would understand that the technician wished to set the speed at which the controller was to communicate with other pieces of computer equipment, a printer for example.

The first digit of a register that is not a line number or a route number often represents a particular group of similar functions, *e.g.*, a first digit of "9" indicates a group of special programming functions. Mitel admits that it arbitrarily selected the particular digit that represents each group of functions.

The final digit of Mitel's command codes is known as the "description." The description is a number or symbol (usually 0 through 9, *, or #) that represents a particular setting within each function. The various possible settings for each controller function are referred to as "values." Thus, for each function, a "value" is assigned to each digit in the range of possible "descriptions." For example, the possible descriptions and accompanying values for the function 006 (RS-232 Baud Rate) described above are:

Description	Value
1	110 baud
2	300 baud
3	600 baud
4	1200 baud
5	2400 baud
6	4800 baud
7	9600 baud

Therefore, in order to set the RS-232 Baud Rate at 4800 baud, a technician would press the digits 0066 into a touch-tone telephone keypad. The combination of

values and descriptions vary in nature and degree from function to function. Thus, the description "4" stands for the value of "1200 baud" for function 006, but stands for the value of "40 seconds" for the X27 (Time to Auto-Answer) function.

III.   Iqtel's Call Controller, Command Codes, and Copying

Iqtel began manufacturing the IQ200+ call controller for sale in 1994. Iqtel devised an instruction set of command codes to activate the features of its call controller. Although the Iqtel and Mitel call controllers provide many of the same features, to identify features of its controller, Iqtel selected "registers" that were different from Mitel's "registers." Iqtel used identical "descriptions" and "values" where the functions of the IQ200+ were the same as Mitel's Smart-1 controller.

Because Mitel controlled a large share of the call controller market, Iqtel concluded that it could compete with Mitel only if its IQ200+ controller were compatible with Mitel's controller. Iqtel reasoned that technicians who install call controllers would be unwilling to learn Iqtel's new set of instructions in addition to the Mitel command code set, and the technicians' employers would be unwilling to bear the cost of additional training. In addition to its own set of command codes, therefore, Iqtel designed the IQ200+ controller to accept Mitel command codes.

In order to produce a call controller compatible with Mitel's controller, Iqtel copied Mitel's command codes in three important respects. First, Iqtel programmed the IQ200+ to accept Mitel command codes and translate them to the corresponding Iqtel command code. Iqtel named this feature the "Mitel Translation Mode." Second, Iqtel facilitated technicians' use of this mode by publishing an appendix to its manual that listed and cross-referenced Mitel and Iqtel command codes. Third, in its own command codes, Iqtel copied Mitel's "values" and the "descriptions" assigned to them for the call controllers' common functions.[2]

Iqtel's IQ200+ proved to be highly competitive with Mitel's Smart-1 call controller. Mitel commenced this copyright infringement action on April 25, 1995. Mitel sought a preliminary injunction and the court heard three days of evidence on the matter. On August 23, 1995, the district court issued its decision denying Mitel's motion for a preliminary injunction because Mitel failed to

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[2] For example, Mitel's register for RS-232 Baud Rate is "006." Iqtel's register for RS-232 Baud Rate is "022." However both Mitel and Iqtel selected the same descriptions and values for this function, namely:

1 for 110 baud
2 for 300 baud
3 for 600 baud
4 for 1200 baud
5 for 2400 baud
6 for 4800 baud
7 for 9600 baud

demonstrate a substantial likelihood that it will prevail on the merits of its claim. Mitel, Inc., 896 F. Supp. 1050.

Resting its decision on several grounds, the court found that Mitel's command codes are not copyrightable subject matter because they constitute a method of operation under 17 U.S.C. § 102(b), they are unoriginal under 17 U.S.C. § 102(a), and they are dictated by external factors and unprotectable under the scenes a faire doctrine. Id. at 1054-56. In addition, the court concluded that if the command codes were protectable, Iqtel's copying was a fair use of Mitel's codes. Id. at 1056. Mitel now appeals these determinations.

DISCUSSION

A plaintiff seeking a preliminary injunction must establish that (1) it has a substantial likelihood of prevailing on the merits, (2) it will suffer irreparable injury unless the injunction issues, (3) its threatened injury outweighs the injury caused the defendant by the injunction, and (4) an injunction would not be adverse to the public interest. Country Kids 'n' City Slicks, Inc. v. Sheen, 77 F.3d 1280, 1283 (10th Cir. 1996). We review the denial of a preliminary injunction to determine whether the district court "'abuse[d] its discretion, commit[ted] an error of law, or [wa]s clearly erroneous in its preliminary factual findings.'" Country Kids, 77 F.3d at 1283 (quoting Autoskill Inc. v. National

Educational Support Systems, Inc., 994 F.2d 1476, 1487 (10th Cir. 1993))

(alterations in original).

In order to establish copyright infringement plaintiff must prove (1) that it

owns a valid copyright, and (2) that the defendant copied protectable elements of

the copyrighted work. Feist Publications Inc. v. Rural Tel. Serv. Co., 499 U.S.

340, 361 (1991); Country Kids, 77 F.3d at 1284. As to the first element, Iqtel

does not appeal the district court's determination that Mitel owns a valid

copyright in the disputed work.

The second element requires us to consider two distinct issues. First we

must determine whether, as a factual matter, the defendant copied[3] plaintiff's

work. Country Kids, 77 F.3d at 1284. Second, as a mixed question of law and

fact, we must evaluate whether the elements copied by the defendant are protected

by copyright. Id. As to the first issue, Iqtel admits that it copied virtually the

entire set of Mitel command codes when it created its command set and the Mitel

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[3] We use copying as a general term which includes infringement of any of a
copyright holder's rights as set forth in 17 U.S.C. § 106. In pertinent part, section 106
provides:

Subject to sections 107 through 120, the owner of copyright under this title
has the exclusive rights to do and to authorize any of the following: (1) to
reproduce the copyrighted work in copies . . .; (2) to prepare derivative
works based upon the copyrighted work; (3) to distribute copies . . . of the
copyrighted work to the public by sale or other transfer of ownership, or by
rental, lease, or lending . . . .

Translation Mode for the IQ200+ call controller. In addition, Iqtel undisputedly

published the codes as part of the Mitel-to-Iqtel code translation tables in IQ200+

installation manuals.

Thus, the appeal before us requires us to evaluate whether Mitel is

substantially likely to prove that the command codes copied by Iqtel are protected

by copyright. If we conclude that the codes are protectable expression, we must

then consider whether Iqtel's copying constitutes a fair use of the command codes

under 17 U.S.C. § 107. Before analyzing whether the command codes are

protectable, however, we must address the appropriate framework for our

analysis.

I.   The Analytical Framework

"Copyright protection subsists . . . in original works of authorship fixed in

any tangible medium of expression . . . from which they can be perceived,

reproduced, or otherwise communicated." 17 U.S.C. § 102(a). Section 102(b)

limits the scope of copyright protection by providing that "[i]n no case does

copyright protection for an original work of authorship extend to any idea,

procedure, process, system, [or] method of operation . . . regardless of the form in

which it is described, explained, illustrated, or embodied." 17 U.S.C. § 102(b).

Section 102(b) codifies one of copyright law's fundamental

distinctions—copyright protection extends to an "author's original expression and

not to the ideas embodied in that expression." Gates Rubber Co. v. Bando Chem.

Indus., Ltd., 9 F.3d 823, 836 (10th Cir. 1993). Thus, when considering whether a

defendant copied protectable elements of a copyrighted work, we must determine

whether or to what extent the copied portions constitute ideas, processes, systems,

or methods of operation, on one hand, or protectable expression, on the other.

The district court relied alternatively on two means of separating Mitel's idea

from expression: a literal application of § 102(b) and the abstraction-filtration-

comparison test.

In recent opinions this court has relied increasingly upon the conceptual

framework known as abstraction-filtration-comparison to aid in separating idea

from expression and identifying protectable expression. We utilize this approach

as follows:

> First, in order to provide a framework for analysis, . . . a court should
> dissect the [work] according to its varying levels of generality as
> provided in the abstractions test.[4] Second, poised with this

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[4] The abstractions test is a conceptual tool that helps the court separate idea from
expression. Judge Learned Hand first enunciated the approach in Nichols v. Universal
Pictures Corp., 45 F.2d 119, 121 (2d Cir. 1930):

> Upon any work, and especially upon a play, a great number of patterns of
> increasing generality will fit equally well, as more and more of the incident
> is left out. The last may perhaps be no more than the most general

framework, the court should examine each level of abstraction in order to filter out those elements of the [work] which are unprotectable. Filtration should eliminate from comparison the unprotectable elements of ideas, processes, facts, public domain information, merger material, scenes a faire material, and other unprotectable elements suggested by the particular facts of the program under examination. Third, the court should then compare the remaining protectable elements with the allegedly infringing [work] to determine whether the defendants have misappropriated substantial elements of the plaintiff's [work].

Gates, 9 F.3d at 834 (footnote added). Although abstraction-filtration-comparison analysis is particularly useful in cases involving copyright in computer programs, we recently noted that the approach merits application in cases that extend well beyond that narrow context. Country Kids, 77 F.3d at 1284 n.5.

As its initial basis for finding Mitel's command codes unprotectable, the district court applied the literal language of section 102(b) and concluded that Mitel's set of command codes is an unprotected method of operation or "a method for achieving a particular result." Gates Rubber, 9 F.3d at 836 n.13. The court based its conclusion upon the finding that Mitel's command codes comprise the

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statement of what the play is about, and at times might consist only of its title; but there is a point in this series of abstractions where they are no longer protected, since otherwise the playwright could prevent the use of his 'ideas,' to which, apart from their expression, his property is never extended.

The test does not identify protectable expression, "[r]ather it is merely one tool that can be utilized to accomplish this task." Gates, 9 F.3d at 834.

method by which a long distance carrier matches the call controller's functions, the carrier's technical demands, and the telephone customer's choices.

The First Circuit reached a similar conclusion in <u>Lotus Development Corp. v. Borland Int'l, Inc.</u>, 49 F.3d 807 (1st Cir. 1995), <u>aff'd without opinion by an evenly divided Court</u>, 116 S. Ct. 804 (1996).[5] <u>Lotus</u> concerned whether the commands and the menu trees in which the commands were organized in the spreadsheet program Lotus 1-2-3 constituted copyrightable subject matter. <u>Id.</u> at 809. The <u>Lotus</u> court defined "method of operation":

> We think that "method of operation" as that term
> is used in § 102(b) refers to the means by which a
> person operates something, whether it be a car, a
> food processor, or a computer.

<u>Lotus</u>, 49 F.3d at 815.

Based upon this definition, the First Circuit concluded that the "menu command hierarchy" was not protected by copyright because the hierarchy and its components constituted a "method of operation" unprotectable under 17 U.S.C. § 102(b). <u>Id.</u> The <u>Lotus</u> court concluded that the question whether a work is excluded from protection under section 102(b) logically precedes consideration of whether the individual components of the work are "expressive." <u>Id.</u> Most significantly, the <u>Lotus</u> court held that otherwise protectable expression that is

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[5] Although not cited by the district court, the court discussed the applicability of <u>Lotus</u> with the parties at oral argument.

embodied in a method of operation is excluded under section 102(b) from

copyright protection because it is part of the method of operation:

> Under the district court's reasoning, Lotus's decision to employ
> hierarchically arranged command terms to operate its program could
> not foreclose its competitors from also employing hierarchically
> arranged command terms to operate their programs, but it did
> foreclose them from employing the specific command terms and
> arrangement that Lotus had used. In effect, the district court limited
> Lotus 1-2-3's "method of operation" to an abstraction.
>   [W]e . . . hold that [the] expression [in Lotus's expressive
> choices in choosing and arranging command terms] is not
> copyrightable because it is part of Lotus 1-2-3's "method of
> operation." We do not think that "methods of operation" are limited
> to abstractions; rather, they are the means by which a user operates
> something. If specific words are essential to operating something,
> then they are part of a "method of operation" and, as such, are
> unprotectable.

Lotus, 49 F.3d at 816.

We conclude that although an element of a work may be characterized as a

method of operation, that element may nevertheless contain expression that is

eligible for copyright protection. Section 102(b) does not extinguish the

protection accorded a particular expression of an idea merely because that

expression is embodied in a method of operation at a higher level of abstraction.

Rather, sections 102(a) & (b) interact to secure ideas for public domain and to set

apart an author's particular expression for further scrutiny to ensure that

copyright protection will "promote the . . . useful Arts." U.S. Const. art. I, § 8,

cl. 8. Our abstraction-filtration-comparison approach is directed to achieving this

balance. Thus, we decline to adopt the Lotus court's approach to section 102(b), and continue to adhere to our abstraction-filtration-comparison approach. See Gates Rubber, 9 F.3d at 843 (noting the applicability of abstraction-filtration-comparison to "menus and sorting criteria"); Autoskill, 994 F.2d at 1493, 1495 n.23 (stating that "more than literal application of § 102(b) is required") (citing Toro Co. v. R & R Prods. Co., 787 F.2d 1208, 1211-12 (8th Cir. 1986)).

We are mindful of the concern expressed by the Lotus court that, by its very nature, the abstraction-filtration-comparison approach tends to produce a core of copyrightable protectable expression that, if literally copied, would make the copier liable for infringement. Lotus, 49 F.3d at 815. Undoubtedly, the portions of a work to which a court applies abstraction analysis frequently contain a level of abstraction which reveals expression that does not fall within the excluded categories of section 102(b). Although this core of expression is eligible for copyright protection, it is subject to the rigors of filtration analysis which excludes from protection expression that is in the public domain, otherwise unoriginal, or subject to the doctrines of merger and scenes a faire.

Notwithstanding our endorsement of abstraction-filtration-comparison analysis, we emphasize that the approach is valuable only insofar as it aids the court in distinguishing protectable elements of a work from those that are unprotectable. Not every case requires an extensive abstraction-filtration-

comparison analysis. Rather, "the appropriate test to be applied and the order in which its various components are to be applied . . . may vary depending upon the claims involved, the procedural posture of the suit, and the nature of the [works] at issue." Gates Rubber Co., 9 F.3d at 834 n.12.

Where, as here, the alleged infringement constitutes the admitted literal copying of a discrete, easily-conceptualized portion of a work, we need not perform complete abstraction-filtration-comparison analysis. Mitel does not claim copyright in the names of the functions that are accessed by its command codes or in the idea of using four-digit numeric codes to manipulate the functions of a call controller. Rather, Mitel contends that copyright protection extends only to its selection of particular four-digit numbers that activate and manipulate the functions of the Smart-1 call controller and to the particular "values" assigned to the "description" digit of Mitel's codes. Thus, we may proceed directly to the protectability analysis that is normally subsumed in the filtration portion of the abstraction-filtration-comparison approach.

II. Protectability Analysis

The district court concluded that Mitel's command codes contain no protectable expression because the expression in the command codes lacks requisite originality and is not entitled to protection against infringement under

the scenes a faire doctrine. We agree with the district court that Mitel's command codes are largely unoriginal. Further, to the extent that the codes contain original expression, that expression is excluded from protection under the scenes a faire doctrine.

A.   Originality

Copyright inheres only in original works of authorship. 17 U.S.C. § 102(a); Feist Publications, 499 U.S. at 345; Gates Rubber, 9 F.3d at 837. "Original, as the term is used in copyright, means only that the work was independently created by the author . . . and that it possesses at least some minimal degree of creativity." Feist Publications, 499 U.S. at 345. Although originality is not a "stringent" requirement, "[t]here remains a narrow category of works in which the creative spark is utterly lacking or so trivial as to be virtually non-existent." Id. at 359.

Even though the district court discussed originality under section 102(a) and method of operation under section 102(b) together, the court clearly found that Mitel's command codes lack originality. The district court stated that "the numbers constituting the command codes were arbitrarily chosen and arbitrarily assigned to each function." Mitel, 896 F. Supp. at 1055. Relying on Toro Co. v. R&R Prods. Co., 787 F.2d 1208, the court concluded that such arbitrariness was insufficient to sustain a finding of originality.

In Toro the Eighth Circuit rejected the copyrightability of a lawn tractor manufacturer's numbering of replacement parts because the numbers were insufficiently original. Id. at 1213. When the manufacturer created each part, it assigned the part an arbitrary identifying number. Id. The court held that the arbitrary assignment of numbers to parts lacked any creativity or variation by which one could distinguish authorship. Id. Like the Toro court, the district court in this case concluded that Mitel used such minimal effort and judgment to select the "registers" and "descriptions" that they are unoriginal under section 102(a). We agree.

Mitel's arbitrary selection of a combination of three or four numbers required de minimis creative effort. Mitel's own witnesses testified to the arbitrariness of the command codes.[6] Scott Harper, a Mitel marketer who selected

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[6] According to Mitel, its witnesses used the word "arbitrary" to mean that the command codes could have been written in a variety of different ways, not only the way that was chosen by Mitel's engineers. Thus, Mitel contends that the expression contained in its command codes is not subject to application of the merger doctrine. Under that doctrine, copyrightable expression is denied protection from infringement because the expression "is inseparable from or merged with the ideas, processes, or discoveries underlying the expression." Gates Rubber, 9 F.3d at 838 (citing Concrete Mach. Co. v. Classic Lawn Ornaments, Inc., 843 F.2d 600, 606-07 (1st Cir. 1988); see Hart v. Dan Chase Taxidermy Supply Co., 86 F.3d 320, 322 (2d Cir. 1996) (merger of idea and expression properly considered in the context of infringement rather than copyrightability). Mitel fails to recognize that originality is an independent requirement that is not satisfied merely because the merger doctrine is inapplicable. The district court did not apply the merger doctrine to deny Mitel's command codes protection from infringement, and we do not rely on that doctrine to reach today's holding.

some of the "registers" and "descriptions," testified that he selected the numbers arbitrarily, without any attempt to place his mark on them. App't App., Vol III at 807. Similarly, John Zabel, a Mitel software design engineer, testified that Mitel's command codes are arbitrary and largely sequential. Id. at 756. Finally, plaintiff's own expert testified that Mitel's registers were arbitrary and "real close to random," and that there is no evidence of anyone trying to "put their mark" on the codes. Id. at 771, 772. In addition, the record contains no evidence that particular digits of the "register" representing logical groups of functions were selected in a non-arbitrary manner. We agree with the district court that "'the random and arbitrary use of numbers in the public domain does not evince enough originality to distinguish authorship.'" Order at 9 (quoting Toro, 787 F.2d at 1213).

Further, purely sequential elements of the codes are not original under section 102(a). The "descriptions" are strictly sequential and matched with increasing incremental "values." The concept of numbering registers and descriptions in ascending sequence is analogous to arranging telephone entries in alphabetical order. See Feist, 499 U.S. at 362-63. Both of these arrangements are obvious and insufficiently creative to constitute original expression under section 102. Id. Thus, Mitel's arbitrary assignment of particular numbers to particular functions and its sequential ordering in registers and descriptions "lack[] the

modicum of creativity necessary to transform mere selection into copyrightable expression." Id. at 362.

We must also consider the originality of the remaining component of Mitel's command codes—the content of the "values" created by Mitel and assigned to its "descriptions." Mitel devised the "values" to set each function at a particular level of operation. For example, the possible "values" or settings for the function 006 (RS-232 Baud Rate) described above are 110 baud, 300 baud, 600 baud, 1200 baud, 2400 baud, 4800 baud, and 9600 baud. As another example, upon the failure of a call sent over a particular telephone network route, the technician can activate the "R58" function which tells the controller how to respond to the failure. The possible values for the function include several combinations of redialing over another route or reattempting the call over the same route again before trying another route.

Unlike the merely arbitrary or sequential registers and descriptions discussed above, Mitel's values reveal "'the existence of . . . intellectual production, of thought, and conception.'" Feist Publications, 499 U.S. at 362 (quoting Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 59-60 (1884)) (omission in original). We find that the effort required of Mitel's employees to devise appropriate values for the wide variety of individual functions reflects at least the "'minimal degree of creativity'" to qualify as an "original" work of

authorship. Autoskill, 994 F.2d at 1495 n.23 (quoting Feist Publications, 499 U.S. at 345)). Thus, we must further evaluate whether the expression found in Mitel's values is protected from infringement or excluded from protection by the scenes a faire doctrine.

2.   Scenes a Faire

The district court concluded that Mitel's command codes should be denied copyright protection under the scenes a faire doctrine because they are largely dictated by external factors such as hardware compatibility requirements and industry practices. Under the scenes a faire doctrine, expressive elements of a work of authorship are not entitled to protection against infringement if they are standard, stock, or common to a topic, or if they necessarily follow from a common theme or setting. Gates Rubber, 9 F.3d at 838; Autoskill, 994 F.2d at 1494.

> Granting copyright protection to the necessary incidents of an idea would effectively afford a monopoly to the first programmer to express those ideas. Furthermore, where a particular expression is common to the treatment of a particular idea, process, or discovery, it is lacking in the originality that is the sine qua non for copyright protection.

Gates Rubber, 9 F.3d at 838. For example, "[f]oot chases and the morale problems of policemen, not to mention the familiar figure of the Irish cop, are venerable and often-recurring themes of police fiction," and are unprotectable scenes a faire. Walker v. Time Life Films, Inc., 784 F.2d 44, 50 (2d Cir. 1986).

We have extended this traditional copyright doctrine to exclude from protection against infringement those elements of a work that necessarily result from external factors inherent in the subject matter of the work. For computer-related applications, these external factors include hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, industry programming practices, and practices and demands of the industry being serviced. See Gates Rubber, 9 F.3d at 838; Computer Assocs. Int'l, Inc. v. Altai, Inc., 982 F.2d 693, 709-10 (2d Cir. 1992); Plains Cotton Coop. Assoc. v. Goodpasture Serv., Inc., 807 F.2d 1256, 1262 (5th Cir. 1987) (declining to extend protection to a computer program where the similarities between the plaintiff's and defendant's programs were dictated by "the externalities of the cotton market" and by other "market factors"); see also 4 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 13.03[F][3], at 13-130-141 (1997) [hereinafter NIMMER]. Because these factors concern functional aspects of a work, the scenes a faire doctrine plays a particularly important role in ensuring that copyright rewards and stimulates artistic creativity in a utilitarian work "in a manner that permits the free use and development of non-protectable ideas and processes" that make the work useful. Computer Assocs., 982 F.2d at 711.

In its discussion of scenes a faire, the district court properly focused on the factual circumstances surrounding Mitel's selection of registers, descriptions, and values. A portion of its analysis, however, discussed whether external factors such as market forces and efficiency considerations justified Iqtel's copying of the command codes. The court's analytical focus should have remained upon the external factors that dictated Mitel's selection of registers, descriptions, and values. By excluding expression dictated by external factors from protection against infringement, copyright law secures for public use the "necessary incidents" of ideas and processes and strikes the appropriate "'balance between competition and protection.'" Computer Assocs., 982 F.2d at 711 (quoting Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983)). Thus, the scenes a faire doctrine identifies and excludes from protection against infringement expression whose creation "flow[ed] naturally from considerations external to the author's creativity." NIMMER § 13.03[F][3], at 13-131.

Nonetheless, in this case the district court correctly found that much of the expression in Mitel's command codes was dictated by the proclivities of technicians and limited by significant hardware, compatibility, and industry requirements. In particular, the record contains substantial evidence supporting the conclusion that Mitel's values should be excluded from protection against infringement under the scenes a faire doctrine.

External factors frequently dictated Mitel's selection of particular values to activate the range of call controller functions. For example, many of the values were selected by Mitel's product management department in response to customer demand or to ensure compatibility with equipment already installed in the central offices of Mitel's customers. Frequently, the values were divided in equal increments across a numerical range, and the descriptions and the value increments were matched in ascending steps. Standard programming conventions such as "1" for "on" and "0" for "off" determined some of the descriptions and values. App't App., Vol. III at 757. In addition, some of the values for the set of command codes that were actually copied were dictated by the need for compatibility with older-model Mitel call controllers or the limits on the capabilities of the controller itself. Id. Other values were dictated by the limits inherent in the public telephone networks that the call controllers accessed. For example, the vice president of Iqtel, Don Jorgenson, testified that the phone company is able to recognize touch-tone numbers only when the tone lasts 40 milliseconds or longer. Id. Thus, the minimum length of time that a technician can set a touch-tone to last using Mitel's command code X02 ("DTMF[7] Dialing Rates") or Iqtel's command code 17L ("DTMF Tone Length) is 40 milliseconds.

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[7] DTMF stands for "Dual Tone Multiple Frequency" and is merely the acronym for what most of us know as "touch-tone" telephone dialing.

App't App., Vol. II at 283, 456. In sum, although Mitel's values constitute non-arbitrary original expression, they are unprotectable as scenes a faire because they were dictated by external functionality and compatibility requirements of the computer and telecommunications industries.

Consideration of Mitel's motion for a preliminary injunction did not require the district court to conduct an exacting examination and analysis of every component of every command code. Rather, the district court must determine upon the evidence before it whether the plaintiff is substantially likely to succeed on the merits of its action. The record in this case contains ample evidence that Mitel is not substantially likely to succeed on the merits. The doctrines of originality and scenes a faire render Mitel's command codes unprotected by copyright. Therefore, we need not consider whether Iqtel's copying of Mitel's command codes constituted fair use under 17 U.S.C. § 107.

CONCLUSION

Mitel has failed to demonstrate that its command codes contain expression that is original and goes beyond the necessary incidents of the ideas which the codes express. We therefore conclude that the district court did not abuse its discretion in denying Mitel's motion for a preliminary injunction. The decision of the district court is AFFIRMED.