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The scope of computer program protection after SAS: are we closer to answers?

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Case: SAS Institute Inc v World Programming Ltd (C-406/10) Unreported May 2, 2012 (ECJ)

***E.I.P.R. 565** *In a much awaited decision, the Court of Justice held that the functionalities of a computer program, including data files and programming languages, generally cannot be protected by copyright. Interfaces can be protected only the extent that they represent the author's creative choices. The court's decision on arti.5(3) of the software directive is more cryptic but probably can be interpreted to mean that the owner of the copyright in a computer program may not prevent a licensee from determining the ideas and principles which underlie the elements of the program so long as the user does not infringe the copyright owner's exclusive rights.*

Introduction

When computer programs entered the House of Copyright in the 1980s--a movement that peaked with the recognition of programs as literary works in a 1991 European Directive followed at the international level by the 1994 TRIPS Agreement and the WIPO Copyright Treaty[1] --something fundamental changed in copyright law because subject-matter not designed to communicate ideas between or among human beings was protected by a form of intellectual property protection (copyright) initially established to protect markets and provide incentives for authors and publishers of books. By this, we do not mean that the ideas had to be "artistic" in nature. Indeed, maps, charts and other technical subject-matter (including designs in a number of countries) can be protected as copyright works. We mean that computer programs are not primarily designed to communicate; they are machine processes designed to make devices (computers, etc.) perform certain tasks.[2] This was seen as potentially debasing or at least radically transforming copyright law and policy, bearing in mind that the software industry dwarfs all other copyright industries combined.[3]

The tragedy has mostly been avoided, in large part because courts have stuck to copyright principles and history and refused to transform copyright's fundamental underpinnings to fit the needs of software.[4] We see an excellent example of this in the decision of the Court of Justice of the European Union (Court of Justice) in *SAS Institute Inc v World Programming Ltd* released on May 2, 2012.[5]

The case stemmed from a reference by the Chancery Division of the High Court of Justice of England and Wales, which was trying to determine whether, under the Copyright, Designs and Patents Act 1988,[6] a defendant was liable for copyright infringement if, by observing a competitor's program (acquired under a "click-through" online licence), it could produce a program performing similar functions. A thorough analysis of Arnold J.'s opinion and of the facts of the case was published in an earlier issue of E.I.P.R.[7]

*E.I.P.R. 566 Questions before the court

Basically, the nine questions referred to the Court of Justice by the High Court boiled down to three and were treated as such (that is, answered in three groupings) by the court.

• does the functionality of a computer program, the programming language and the format of data files used in a computer program in order to exploit certain of its functions constitute a form of expression of that program that is protected by copyright (questions 1-5);

• can a person who has obtained a copy of a computer program under a licence, without the authorisation of the owner of the copyright in that program, observe, study or test the functioning of that program in order to determine the ideas and principles which underlie any element of the program, if that person carries out acts covered by that licence with a purpose that goes beyond the framework established by the licence? (questions 6 and 7);

• is the reproduction, in a computer program or a user manual for that program, of certain elements described in the user manual for another computer program protected by copyright an infringement of that right in the latter manual? (questions 8 and 9).

The exclusion of ideas

The court relied on the nuanced Opinion of Advocate General Bot,8 who had found that copyright protection did not extend to the functionalities of the program.9 In particular, A.G. Bot had noted that the

"The protection of a computer program is not therefore confined to the literal elements of that program, that is to say, the source code and the object code, but extends to any other element expressing the creativity of its author."10

This rule is incorporated in international instruments. The background history of art.9.2 of the TRIPS Agreement, which states that "copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such", was a Japanese text that would have specifically excluded algorithms.11 There is at least implicit recognition that computer programs are different. Ontologically, first, because they are machine processes; but also economically, because protecting them would produce anti-competitive effects and other inefficient outcomes. As the Court of Justice and the A.G. noted, "to accept that the functionality of a computer program can be protected by copyright would amount to making it possible to monopolize ideas, to the detriment of technological processes and industrial development".12 The TRIPS negotiators' choice to avoid a specific mention of algorithms and to replace it with language borrowed from s.102(b) of the US Copyright Act,13 was seen as a safer alternative. Recital 14 of the Computer Programs Directive was more specific in categorising "logic, algorithms and programming languages" as potential (unprotectable) ideas.14

The court got it right in finding that:

• copyright protection extends to both source and object code, a matter also recognised in art.10.1 of the TRIPS Agreement15 ;

• neither the functionality of a computer program nor the programming language and the format of data files used in a computer program in order to exploit certain of its functions constitutes a form of expression of that program16 ;

• however, if one were "to procure the part of the source code or the object code relating to the programming language or to the format of data files used in a computer program, and if that party were to create, with the aid of that code, similar elements in its own computer program, that conduct would be liable to constitute partial reproduction".17

E.I.P.R. 567 The Court of Justice's decision follows a most interesting discussion of this issue in international, EU and domestic law by Arnold J.18 Reviewing the leading UK cases on the protection of non-literal elements,19 he concluded that the TRIPS exclusion of ideas from the scope of protection of copyright may have changed UK law.20 He (rightly in our view) noted the need to interpret EU law in a manner consonant with TRIPS.21 He then concluded, in a finding that in our view remains intact following the Court of Justice's decision, that:

"[C]opyright in a literary work is the form of expression of the literary work itself. Other things that are conveyed by or described in the literary work, of which 'ideas, procedures, methods of operation and mathematical concept' is evidently a non-exhaustive list, are not

protected. Thus these provisions draw a line between copyright protection and the public domain."22

We might have a small quibble with his last point on this subject. Discussing the parties' arguments with respect to the words "as such" at the end of TRIPS art.9.2, Arnold J. noted that:

"[T]he distinction is one between different kinds of skill, judgement and labour. Skill, judgement and labour in devising ideas, procedures, methods of operation and mathematical concepts is not protected by the copyright in a literary work. What is protected by copyright in a literary work is the skill, judgement and labour in devising the form of expression of the literary work."23

We are not convinced that this is the best way to parse the distinction. It may be difficult or indeed impossible to draw the distinction between the types of "skill, labour and judgment" that gave a work its originality. It may be more appropriate to say that the creative choices that generated such originality are what copyright protects, but only up to a certain level of abstraction (where expression becomes idea). This approach, namely looking for originality, also excludes pedestrian or otherwise non-original elements which are present in the work (mere ideas; parts of the work dictated by function or tools used or applicable standards).

Copyright protects intellectual creations

A major reason for the exclusion of data formats and files from the scope of copyright is the reference to "intellectual creation" as the applicable benchmark. Here, the Court of Justice's opinion explicitly follows in the wake of *Infopaq, Softwarová, FAPL, Painer* and *Football Dataco.*24

One of the authors of this article has argued for years that the notion of intellectual creation contained in the *travaux préparatoires* of the Berne Convention and reflected in several instances in the text of the Convention (especially art.2(5)) is linked to the *creative choices* made by an author, which one might define as choices not primarily dictated by the function of the work, the method or tools used or applicable standards.25 As a rule of thumb, creative choices are those that one can isolate by asking whether two authors in similar situations (tools, direction, budget, etc.) would likely have produced essentially the same thing. It is those choices that create protectable expression and that, at bottom, copyright is meant to incentivise and protect. The rule is somewhat different from the traditional skill, labour and judgment test, but the differences only affect a few mostly marginal cases.26 In the *SAS* case, one would have to find that the *code* (not formats or a language per se) which the Court of Justice found potentially protectable embodies such choices.

The Court of Justice has now reiterated many times the need to show that such an intellectual creation is present to justify copyright protection.27 The opinion of the court in the *SAS* case stays the course:

"It is only through the *choice, sequence and combination* of those words, figures or mathematical concepts that the author may express his creativity in an original manner and achieve a result, namely the user manual for the computer program, which is an intellectual creation."28

E.I.P.R. 568 The court then drew what seems an entirely appropriate conclusion from the previous observation, namely that:

"[T]he reproduction… of certain elements described in the user manual for another computer program protected by copyright is capable of constituting an infringement of the copyright in the latter *manual if … that reproduction constitutes the expression of the intellectual creation of the author* of the user manual for the computer program protected by copyright."29

Application to data formats and other interfaces

While the copyright protection of computer code (source or object) is easily understood for

slavish copying of all or a substantial part of a program, it is still difficult to draw an appropriate line *where more than the algorithm but less than the actual code is taken.* In certain cases, a proper determination can be made on the basis of the need to allow interoperability (and hence competition). This is the level of abstraction issue mentioned above.

That said, the exclusion of *data formats* seems correct as a matter of copyright theory. Samuelson, Vinje and Cornish published a comment on the case after the release of A.G. Bot's Opinion30 with which we largely agree. As we understand their comment, they would exclude data formats from copyright protection because computer program do not contain data formats, they only process them. One might question whether it is always false to state that a computer program *contains* data formats (which would be subject to the usual rules to decide whether copyright protection applies) and that programs are only able to *process* such formats. A data format is prescribed by and as such may be reflected and, arguably at least, "contained", in a program.

Beyond the semantic debate, we believe, however, that their suggestion is correct as a matter of policy. In keeping with the Directive's balance of protection and competition, *data formats should not be protected* whether or not one sees them as per se excluded from copyrightable subject-matter. Before explaining why even data formats that might seem as prima facie protectable by copyright should not be protected, let us note that we also agree with Samuelson, Vinje and Cornish that appropriate distinctions must be drawn between types of interfaces--in other words, conclusions one might draw with respect to data formats need not apply to other types of interfaces.31 For example, an audiovisual user interface may well be protected by copyright as a separate audiovisual work, as was clearly stated in the *Softwarová* case.32 Copying it, as would copying the code that makes it possible, could both be pursued as separate instances of copyright infringement. The Court of Justice had already held in the *Softwarová* case that when deciding whether a graphical user interface is original, the originality criterion cannot be met for the components of the interface which are solely characterised by their technical function.33 It went even further, even though it did it clumsily,34 and adopted the merger doctrine. It held that:

"[W]here the expression of those components is dictated by their technical function, the criterion of originality is not met, since the different methods of implementing an idea are so limited that the idea and the expression become indissociable.35 "

As we see it, the matter is not binary in the sense that we do not believe that an interface is necessarily either expressive (protected) or functional/behaviour of the program (unprotected). This might best be seen instead as a continuum, with some interfaces being almost completely at one or the other of the scale, but others falling somewhere along the axis (say, 60 per cent expressive; 40 per cent functional). In effect, the question of the copyright protection of interfaces was hotly debated during the drafting of the directive and a middle-ground solution was in the end, adopted.36 A court may then decide to either limit infringement to expressive elements if they can be separated from the functional; or it may refuse a finding of infringement if it would amount to protecting the functional elements, as the Court of Justice noted in the *SAS* case.

This is how we would interpret the Court's proviso that:

"[T]he present judgment cannot affect the possibility that the SAS language and the format of SAS Institute's data files might be protected, as works, by copyright under Directive 2001/29 if they are their author's own intellectual creation."37

On data formats, we believe that the explanation above would exclude all or almost all from any copyright infringement claim (we discuss the fate of programming languages below).

Nevertheless, the Court of Justice's statements at [39] and [45] are facially hard to reconcile. On the one hand, the court says clearly that *"[n]either the functionality of a computer program nor the programming language and the format of data files* used in a computer program in order to exploit certain of its functions constitute a form of expression of that program for the purposes of Article 1(2) of Directive" and further

that "to accept that the functionality of a computer program can be protected by copyright would amount to making it possible to monopolise ideas, to the detriment of technological progress and industrial development".38 On the other hand, it says that "the SAS language and the format of SAS's data files *might be protected, as works,* by copyright under Directive 2001/29 if *they are their author's own intellectual creation".*39 How can the court say that functionality, e.g. language and format of data files, is not a form of expression and then say that data formats or a language can be protected as a work if they are their author's own intellectual creation? Ideas, even "original" ones, are not protectable by copyright. This is why we think that data formats and languages should not be protected by copyright.

One way to reconcile the two paragraphs is to say that the intellectual creation test applies to data formats and languages as to any other potential work. However, because they are functional, and may be considered ideas, not expressions, data formats and the SAS language are not protected. Another way to reconcile the above statements is to say that the Court of Justice meant that the actual *code* underlying the language and data formats (in which the language and data formats are written) can be protected, as reflected in [43]:

"[I]f a third party were to procure the part of the source code or the object code relating to the programming language or to the format of data files used in a computer program, and if that party were to create, with the aid of that code, similar elements in its own computer program, that conduct would be liable to constitute partial reproduction."

There is no doubt that computer code is protectable if it embodies an author's creative choices. This is difficult to apply in the case of the SAS language, however, because the "language" is hard to separate from the source code.40 Additionally, one would have to identify whose choices, if any, are embodied in the code (some might be the client's). Finally, the code must be analysed to see if it embodies original expression and if then to ensure there is no merger between idea and expression.

Protecting programming languages

The court's reference to the possibility that a programming language41 might be protected (subject to the intellectual creation test) raises additional normative issues. SAS claimed copyright rights on what it referred to as its programming "language". This would grant SAS an exclusive right on certain building blocks of expression. As Samuelson, Vinje and Cornish suggest:

"[T]he policy reasons for treating a putative language as outside the scope of copyright protection outweigh the policy reasons that would favour treating it as protectable expression. If the former outweigh the latter because free use of a programming language is needed as a building block for constructing new programs, then the programming language should be among the ideas and principles that copyright does not protect in programs."42

Arnold J. arrived at a similar conclusion,43 as did Pumfrey J. in an earlier opinion by the same court.44

The distinction is relatively clear. A sequence of words expressed (even if an in invented language such as in, say, Tolkien's *Lord of the Rings*) is protectable expression. However, linguistics rules (syntax, semantics) are ideas. Likewise, individual words are not themselves protected, which would seem to exclude a new vocabulary as a work in itself. In *Infopaq,* the Court of Justice had said that for copyright to subsist in a literary work, there needs to be a *combination of words* so that a single word could not obtain copyright (at [45] and [46]).45 It would have been ideal if the court had repeated the substance of these two paragraphs at that particular point in the *SAS* case. On the face of [45] of the *SAS* decision, it is not at all clear (and national courts should not easily infer) that a language can be protected by copyright. Thankfully, the court stresses the point much more clearly at [66] and [67] of its *SAS* decision:

"66. In the present case, the keywords, syntax, commands and combinations of commands, options, defaults and iterations consist of words, figures or mathematical concepts which, considered in isolation, are not, as such, an intellectual creation of the

author of the computer program.

67. It is only through the choice, sequence and combination of those words, figures or mathematical concepts that the author may ***E.I.P.R. 570*** express his creativity in an original manner and achieve a result, namely the user manual for the computer program, which is an intellectual creation (see, to that effect, *Infopaq International,* paragraph 45)."

While in those two paragraphs, it refers to [45] in *Infopaq,* it would have been clearer if it had also cited [46] in *Infopaq* to stress the point even more. The fact that it gives the user manual as an example of such literary work seems to rule out that a language as such could be protected by copyright.

Reproduction presupposes access

The question of what amounts to a reproduction is rather interesting. It forces one to demarcate the copying of ideas, what one might call (allowed) inspiration, from reproduction of expressive elements, especially beyond the simple copying of literal elements. A.G. Bot referred to *Infopaq's* broad definition of "reproduction", in keeping with Recital 21 of the Directive.46

As noted above, copying implies *access,* leaving aside the issue of decompilation.47 It is similarly clear that a copyright infringing reproduction can only happen if what is copied is what is protected by copyright. Indeed, it is axiomatic in copyright law that copying presupposes access. To that extent, one cannot disagree with the court.

When access is made possible by reverse engineering, however, a different set of rules might apply.48 The exact extent of the Directive's provision allowing decompilation (a form of reverse engineering) of object code but not "to be used for the development, production or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright"49 is seen as somehow broadening protection.

Though this is a matter for a different article, it strikes us that this is not a foregone conclusion. Substantial similarity of expression (the terminology used in the Directive) is, after all, what copyright protects, and the Directive does refer to any *other* act that would infringe copyright.50 It could perhaps be better understood as saying that decompilation does not create *an additional right* of the user to recopy the code beyond the limited purposes contained in art.6 of the Directive.51 In the same copyright vein, the Directive draws a distinction between reverse engineering to understand the functionality (not copyright-protected) of a computer program, which it allows (art.5(3)), and decompilation of object code, which is only allowed to achieve interoperability, not to justify or excuse additional copying (art.6).52 The High Court also referred questions on this former possibility to reverse engineer the program, and we turn to this issue now.

Rights of a licensee

The issue of whether contracts can limit recourse by a licensed user to statutory exceptions and limitations is not new.53 To a certain extent, it may depend on domestic contract law. The matter here is considered squarely under the terms of art.5(3), which provides that a licensee is entitled to observe, study or test the functioning of a computer program in order to determine the ideas and principles which underlie any element of the program and art.9(1) which adds that any contractual provisions contrary to the exceptions provided for in arts 5(2), 5(3) and 6 of that directive are null and void. The question the court had to answer was whether the *purpose* of the study or observation of the functioning of the computer program has an effect on whether the person who has obtained the licence may invoke art.5(3). In short, the answer is yes.

The court develops its reasoning as follows. It holds that the purpose of art.5(3) is "to ensure that the ideas and principles which underlie any element of a computer program are not protected by the owner of the copyright by means of a licensing agreement" and highlights that this article reflects art.1(2) which sets out the idea/expression dichotomy.54 It then reminds us of the content of arts 9(1) and 5(3).55 It draws from all these that "the determination of those ideas and principles may be carried out *within the framework of the acts permitted by the licence".*56 This is reinforced by Recital 18, which

provides that a lawful user cannot be prevented from performing acts necessary to observe study or test the functioning of the program, provided that these acts do not infringe the copyright in the program, and Recital 17, according to which a contract may not prohibit the acts of loading ad running necessary for the *intended purpose* of the programme.57

The court arrives at a dual conclusion:

First:

"[T]he owner of the copyright in a computer program *may not prevent, by relying on the licensing agreement,* the person who has obtained that licence from determining the ideas and principles which underlie all the elements of that program in *the case* ****E.I.P.R. 571*** *where that person carries out acts which that licence permits him to perform* and the acts of loading and running necessary for the use of the computer program, and on condition that that person does not infringe the exclusive rights of the owner in that program."58

Secondly:

"[C]opyright in a computer program *cannot be infringed* where … the lawful acquirer of the licence *did not have access to the source code* of the computer program to which that licence relates, but merely studied, observed and tested that program in order to reproduce its functionality in a second program."59

In the decision, the latter point qualifies the former and would thus seem to trump the former in the case of discrepancy. Can they be reconciled? Jointly, they could be read as stating that WPL did not infringe when it loaded a program (the copyright of which SAS licensed to them) in order to study, observe and test its behaviour, even if WPL's purpose was to make a functionally compatible program. Any provision in the licence agreement prohibiting this action on WPL's part would be null and void. The decompilation proviso to this rule, whatever its exact impact,60 would not apply as a factual matter here because WPL did not decompile. The court seems to have used the example of decompilation to contrast arts 5(3) and 6 and also because the High Court had addressed decompilation in its questions.

However, the above approach--which we would suggest is the correct one--is not entirely clear from the Court of Justice's reasoning in [59]-[61]. The court discusses at length the *purpose* of the study or observation and stresses that it has to conform to the intended purpose of the program and cannot be done outside the framework of the licence. It notes that the national court had held that WPL did perform acts outside the scope of the licence.61 At [59], it then apparently sets out two cumulative conditions for art.5(3) to apply: (1) the licensee may only perform acts allowed by the licence and acts loading and running necessary to use the program, and (2) the licensee must not infringe the exclusive rights of the holder of the copyright in the program. However, in the end it concludes that WPL did not infringe (which is why we think the interpretation suggested in the previous paragraph is correct).

Because WPL apparently did perform acts outside the scope of the licence, it seemingly does not fit within the two conditions set out by the Court of Justice. This is so unless what the court means in [61] only applies to the second condition and not the first. If one follows this interpretation, since the first condition is not met, WPL would infringe. If the decision is to be interpreted totally logically, WPL infringed as it did not fulfil the first condition of the test. This would be disturbing because it is difficult to reconcile how the court can, on the one hand, say that the purpose of art.5(3) is to ensure that any licensee can discover the ideas behind a program even if the licence agreement says otherwise and, on the other hand, say that the determination of the ideas must be done within the framework of the acts permitted by the licence. It would then be simple for a licensor to prevent such discovery in all cases via the licence agreement but this would be hard to reconcile (teleologically at least62) with the Directive.

Perhaps the facts of the case explain the court's rather convoluted approach on this point. WPL purchased the (cheaper) learning edition of SAS. The licence stated that it was given only for "non-production" purposes. WPL could have purchased the "full edition" at a higher

price without the non-production purposes restriction. If this is what the court considered, the decision is problematic in cases where there is no choice as to the licence (only one contract is available to customers not several types with different types of clauses allowing different uses at different prices) and the licence states that the licensee may not use the program to discover the ideas behind it and/or make competing programs even if all the lawful user does is to observe, study and test the program without committing any act restricted by the directive. This interpretation, which we find difficult to accept or justify in light of the Directive, would basically allow a software company to create its own private (patent-like) protection through a contractual back door. As the court's interpretation of art.5(3) is unclear, one can surmise that national courts, even perhaps the High Court in this case, will refer further questions on it. In the meantime, hopefully courts will be hesitant to allow this type of contractual back door protection to interfere with fair competitive practices allowed (indeed encouraged) under the Directive.

In the end, and for the judgment to make sense, we think that what the Court of Justice meant in effect in [59] and [61] is that a copyright holder cannot grant himself more rights than what the Computer Programs Directive grants him or her. In short, the right holder cannot by contract prevent a competitor from discovering the ideas and principles behind a program so long as the competitor does not infringe his or her exclusive rights. This would thus mean that WPL did not infringe based on the facts as reported.

*E.I.P.R. 572 Conclusion

The functional behaviour of a computer program is not protected by copyright, as Arnold J. had noted in a conclusion now confirmed by the Court of Justice.63 There are good normative grounds to exclude much of the SAS claims. First and foremost, it would unduly limit competition, as the Court of Justice clearly underscored.64 WPL was essentially allowing SAS customers to interface with its own software by allowing them to reuse data (and related scripts or small programs generated by them) formatted per SAS's instructions, which SAS wanted to prevent because the need to reformat data for its customers would create significant switching costs.65 This type of de facto quasi-monopoly due to sunk cost investments is clearly not what copyright was designed to do. Quite the opposite: the Directive states that interoperability (a prerequisite of competition in this type of environment) is an exception (allowing decompilation of object code where necessary).

SAS also clarifies the scope of protection by focusing on the notion of intellectual creation and the embedded notion of creative choices. This is what copyright as enshrined in the Berne Convention was and is about and it excludes functional elements from the scope of copyright protection. A careful analysis of the history and purpose of copyright suggests that this rule should not be fundamentally altered to protect functional aspects of software. However, the court's interpretation of art.5(3) of the Directive is difficult to decrypt and may be interpreted to imply that licensors can prevent the discovery of ideas and principles behind a computer program, a matter which in our view would contradict the Directive's purpose. However, we think that this cannot be what the court in all logic intended. It will be interesting to see what Arnold J. will decide in the case on remand.

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1. The initial "copyright" dates back to the Statute of Anne. The Directive referred to here is Council Directive 91/250 on the legal protection of computer programs [1991] OJ L122/42) (the Computer Programs Directive). It was codified in Directive 2009/24. The substance of the two directives is the same. Like the Court of Justice, we make reference solely to the original version of the directive. The TRIPS Agreement is the Agreement on Trade-Related Aspects of Intellectual Property Rights, April 15, 1994. The WIPO Copyright Treaty was signed on December 20, 1996.

2. They may contain embedded expressive or communicative elements such as the audiovisual interfaces that may be produced separately but those are protected separately. We return to this below.

3. See for example IIPA, *Copyright Industries in the US Economy: the 2011 Report,* Table A5 at p.17, *http://www.iipa.com/pdf/2011CopyrightIndustriesReport.PDF* [Accessed June 6, 2012].

4. Owners of computer programs, in tacit recognition of the limits of copyright's protection, have long since moved (or added) patent protection to their arsenal. See Vaibhav Choudhary, "The patentability of software under intellectual property rights: an analysis of US, European and Indian intellectual property rights" [2011] E.I.P.R. 435, 437-438.

5. *SAS Institute Inc v World Programming Ltd* (C-406/10) May 2, 2012, available at *http://curia.europa.eu* [Accessed June 6, 2012].

6. As amended by the Copyright (Computer Programs) Regulations 1992 and by the Copyright and Related Rights Regulations 2003 to implement the Computer Programs Directive.

7. Pamela Samuelson, Thomas Vinje and William Cornish, "Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?" [2012] E.I.P.R. 158.

8. *SAS Institute Inc v World Programming Ltd,* Opinion of A.G. Bot (November 29, 2011) [2012] E.C.D.R. 1.

9. *SAS,* Opinion of A.G. Bot [2012] E.C.D.R. 1 at [AG53].

10. *SAS,* Opinion of A.G. Bot [2012] E.C.D.R. 1 at [AG50].

11. See D. Gervais. *The TRIPS Agreement: Drafting History and Analysis,* 3rd edn (Sweet & Maxwell, 2008), pp.221-222.

12. *SAS,* Opinion of A.G. Bot [2012] E.C.D.R. 1 at [AG57]; ECJ Decision May 2, 2012 at [40].

13. US Copyright Act, 17 USC §102(b) provides that: "In no case does copyright protection for an original work of authorship 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."

14. Computer Programs Directive Recital 14 reads as follows: "Whereas, in accordance with this principle of copyright, to the extent that logic, algorithms and programming languages comprise ideas and principles, those ideas and principles are not protected under this Directive."

15. *SAS,* ECJ Decision May 2, 2012 at [34] and [38].

16. *SAS,* ECJ Decision May 2, 2012 at [39].

17. *SAS,* ECJ Decision May, 2 2012 at [43].

18. *SAS* [2010] EWHC 1829 (Ch) at [169]-[207].

19. *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2001] 1 W.L.R. 2416, [2001] F.S.R. 11 HL; *Woolley Jewellers Ltd v A & A Jewellery Ltd* [2002] EWCA Civ 1119, [2003] F.S.R. 15; *Baigent v Random House Group Ltd* [2007] EWCA Civ 247, [2007] F.S.R. 24; and for software specifically, *Navitaire Inc v easyJet Airline Co Ltd* [2004] EWHC 1725 (Ch), [2006] R.P.C. 3.

20. *SAS* [2010] EWHC 1829 (Ch) at [205]. The exclusion is contained in TRIPS art.9.2: "Copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such."

21. *SAS* [2010] EWHC 1829 (Ch) at [200].

22. *SAS* [2010] EWHC 1829 (Ch) at [206].

23. *SAS* [2010] EWHC 1829 (Ch) at [207].

24. *Infopaq International A/S v Danske Dagblades Forening* (C-5/08) [2009] E.C.R. I-6569, [2012] Bus. L.R. 102; *Football Association Premier League v QC Leisure; Karen Murphy v Media Protection Services* (C-403/08 and C-429/08) [2012] F.S.R. 1; *Eva-Maria Painer v Standard VerlagsGmbH* (C-145/10) [2012] E.C.D.R. 6; *Football Dataco v Yahoo! UK* (C-604/10) [2012] 2 C.M.L.R. 24. On *Infopaq,* see see E. Derclaye, "Wonderful or worrisome? The impact of the ECJ ruling in Infopaq on UK copyright law" [2010] E.I.P.R. 247. On *Softwarová,* see E. Derclaye, "L'arrêt Softwarová: une révolution en droit d'auteur ou une 'erreur de jugement'?" (2011) 43 *Revue du Droit des Technologies de l'Information* 57.

25. D. Gervais, *La Notion d'œuvre dans la convention de Berne et en droit comparé* (Librairie Droz, 1998); D. Gervais, "Feist Goes Global : A Comparative Analysis of the Notion of Originality in Copyright Law" (2002) 49(4) *J. Copyright. Society of the USA* 949, 965.

26. See E.F. Judge and D. Gervais, "Of Silos and Constellations: Comparing Notions of Originality in Copyright Law" (2010) 27 Cardozo Arts & Ent. L.J. 375. See also E. Rosati, "Originality in a work, or a work of originality: the effects of the Infopaq decision" [2011] E.I.P.R. 746, 754-755. It is not the amount of work (which may trigger a restitutionary impulse or equitable response but is not properly within copyright law) but rather the creative choices of the author that matter here.

27. *Infopaq* [2009] E.C.R. I-6569, [2012] Bus. L.R. 102 at [39]-[45]; *FAPL* [2012] F.S.R. 1 at [97], [98], [155], [156], [159]; *Painer* [2012] E.C.D.R. 6 at [87]-[89], [94], [99]; *Football Dataco* [2012] 2 C.M.L.R. 24 at [37]-[39].

28. *SAS,* ECJ Decision May 2, 2012 at [67] (emphasis added).

29. *SAS,* ECJ Decision May 2, 2012 at [70] (emphasis added).

30. Samuelson et al., "Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?" [2012] E.I.P.R. 158.

31. Samuelson et al., "Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?" [2012] E.I.P.R. 158, 164-165.

32. *Bezpeènostní softwarová asociace -- Svaz softwarové ochrany v Ministerstvo kultury* (C-393/09) [2011] E.C.D.R. 3 at [44]-[46]. See also A. Strowel and E. Derclaye, *Droit d'auteur et numérique: logiciels, bases de données et multimédia, droit belge, européen et comparé* (Bruxelle: Bruylant, 2001), p.204.

33. *Softwarová* [2011] E.C.D.R. 3 at [48].

34. This is because it based it on the originality criterion rather than the idea/expression dichotomy.

35. *Softwarová* [2011] E.C.D.R. 3 at [49]. See also Derclaye, "L'arrêt Softwarová" (2011) 43 *Revue du Droit des Technologies de l'Information* 57.

36. See Strowel and Derclaye, *Droit d'auteur et numérique* (2001), p.199.

37. *SAS,* ECJ Decision May 2, 2012 at [45].

38. *SAS,* ECJ Decision May 2, 2012 at [39] and [40].

39. *SAS,* ECJ Decision May 2, 2012 at [45]. Directive 2001/29 on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society [2001] OJ L167/10) (Infosoc Directive).

40. It is clear that SAS's language is a programming language. See *SAS* [2010] EWHC 1829 (Ch) at [47] et seq., esp. [56].

41. *SAS* [2010] EWHC 1829 (Ch) at [45].

42. *SAS* [2010] EWHC 1829 (Ch) at [162].

43. *SAS* [2010] EWHC 1829 (Ch) at [178-[179], [209].

44. *Navitaire* [2004] EWHC 1725 (Ch); [2005] E.C.C. 30 at [88].

45. "45. Regarding the elements of such works covered by the protection, it should be observed that they consist of words which, considered in isolation, are not as such an intellectual creation of the author who employs them. It is only through the choice, sequence and combination of those words that the author may express his creativity in an original manner and achieve a result which is an intellectual creation. 46. Words as such do not, therefore, constitute elements covered by the protection." See also Samuelson et al., "Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?" [2012] E.I.P.R. 158, 162.

46. *SAS,* Opinion of A.G. Bot [2012] E.C.D.R. 1 at [AG105]-[AG106]. *Infopaq* [2009] E.C.R. I-6569, [2012] Bus. L.R. 102 at [41]-[42]. See also *SAS,* ECJ Decision May 2, 2012 at [65].

47. See fn.59 and accompanying text.

48. *SAS,* ECJ Decision May 2, 2012 at [44] and [60].

49. Computer Programs Directive art.6(2)(c).

50. Computer Programs Directive art.6(2)(c). The Directive does limit decompilation to cases where it is "indispensable" and "necessary". See art.6(1).

51. See *SAS,* Opinion of A.G. Bot [2012] E.C.D.R. 1 at [AG88] and [AG90].

52. See Samuelson et al., "Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?" [2012] E.I.P.R. 158, 161.

53. See Lucie Guibault, *Copyright Limitations and Contracts -- An Analysis of the Contractual Overridability of Limitations* (Kluwer, 2002).

54. *SAS,* ECJ Decision May 2, 2012 at [51]-[52].

55. *SAS,* ECJ Decision May 2, 2012 at [53]-[54].

56. *SAS,* ECJ Decision May 2, 2012 at [55].

57. *SAS,* ECJ Decision May 2, 2012 at [56] and [58] (emphasis added).

58. *SAS* ECJ Decision May 2, 2012 at [59] (emphasis added).

59. *SAS,* ECJ Decision May 2, 2012 at [61] (emphasis added).

60. See the text at fnn.51 and 52 above.

61. *SAS,* ECJ Decision May 2, 2012 at [48]. The licence was strictly for non-production purposes. Arnold J. agreed with SAS's submission: "It seems to me that the essence of the restriction is that the Customer must not use the Learning Edition *to produce anything,* but only to learn about the SAS Language, how to write SAS scripts and how to use the SAS System": *SAS* [2010] EWHC 1829 (Ch) at [286] (emphasis added).

62. See, inter alia, Computer Programs Directive Recital 14: "Whereas, in accordance with this principle of copyright, to the extent that logic, algorithms and programming languages comprise ideas and principles, those ideas and principles are not protected under this Directive."

63. *SAS* [2010] EWHC 1829 (Ch) at [212]-[217].

64. See *SAS,* Opinion of A.G. Bot [2012] E.C.D.R. 1 at [AG57]; ECJ Decision May 2, 2012 at [40].

65. See Samuelson et al., "Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?" [2012] E.I.P.R. 158, 163.