Reports of Cases

OPINION OF ADVOCATE GENERAL
SZPUNAR
delivered on 10 March 2021 [1]

Case C-13/20

Top System SA
v
Belgian State

(Request for a preliminary ruling
from the cour d'appel de Bruxelles (Court of Appeal, Brussels, Belgium))

(Reference for a preliminary ruling – Copyright and related rights – Directive 91/250/EEC – Legal protection of computer programs – Article 5(1) – Exceptions to the restricted acts – Acts necessary for error correction – Article 6 – Decompilation of a computer program)

Introduction

1. This case provides the Court with a further opportunity to examine the particularities of the legal protection of computer programs. Although it is accepted, both under EU law [2] and in international law, [3] that computer programs are protected by copyright as literary works, they do however differ from such works in several respects. Their specific nature, as protected subject matter, is reflected in the mechanisms of such protection which differ from the general rules of copyright to such an extent that some authors refer to a de facto system of protection *sui generis*. [4]

2. First of all, not only do computer programs have a utilitarian purpose, but that utility is very special: to make computers work. Such a program consists of a series of instructions which, when executed by a computer, enable that computer to perform certain tasks. [5] It follows that, unlike any other category of subject matter protected by copyright, computer programs are not intended to be used by means of human perception. Moreover, the first computer programs were regarded as accessories to the machine itself, with software only gradually securing its independence from hardware. [6]

1 Original language: French.

2 See point 9 of this Opinion.

3 See Article 4 of the WIPO Copyright Treaty, adopted in Geneva on 20 December 1996.

4 See, inter alia, Markiewicz, R., *Ilustrowane prawo autorskie*, Wolters Kluwer, Warsaw, 2018, p. 463. Other authors categorise computer programs as 'text as determined by law', see Vivant, M., Bruguière, J.-M., *Droit d'auteur et droits voisins*, Dalloz, Paris, 2015, p. 183.

5 Janssens, M.-Ch., 'The Software Directive', in Stamatoudi, I., and Torremans, P., *EU Copyright Law. A Commentary*, Edward Elgar Publishing, Cheltenham, 2014, pp. 89 to 148, in particular p. 93.

6 Bing, J., 'Copyright Protection of Computer Programs', in Derclaye, E., (ed.), *Research Handbook on the Future of EU Copyright*, Edward Elgar Publishing, Cheltenham, 2009, pp. 401 to 425, in particular p. 401.

3. It is true that, in some situations, which may be relevant from the perspective of copyright, a person's understanding of a computer program may prove useful, for example in order to develop a rival or complementary program. However, as a rule, it is not the user but rather the computer which 'understands' the program and executes it. The value for the user therefore lies not in the computer program per se, but rather in the functions which that program enables the computer to perform. This puts computer programs more on a par with inventions protected by patent rather than 'traditional' works protected by copyright.

4. That first feature of computer programs leads on to the second: their mode of expression. Although a computer program is intended to be perceived not by people but by the machine, it must be expressed in a way which that machine can understand. That mode of expression is binary code, 'text' consisting of just two symbols, which are usually represented as 0 and 1, but that representation is still a convention for human use. The computer's processor 'reads' those symbols as different values of electrical voltage.

5. Although programs for so-called 'first-generation' computers were often coded directly in binary form, modern programs are much too complex to be created, or even read, in that form. There are therefore programming languages, referred to as 'high-level languages', which contain the different instructions for the computers, coded in the form of expressions close to natural language and, therefore, discernible by people and understandable to those who know those languages. A computer program created in such a programming language constitutes its 'source code'. That source code is then 'compiled', using dedicated software referred to as a 'compiler', into an 'object code' or a 'machine code', that is to say into the form understandable to and executable by a computer. [7]

6. The fact remains that, in practice, computer programs are usually communicated to users only in the form of the object code. This means that those programs can be used by executing them on a computer, but does not allow their content to be known, which is unusual for a work protected by copyright. The question of whether and, potentially, to what extent the user of a computer program is entitled to translate the object code of that program into source code (this process is known as 'decompilation') in order to learn its content lies precisely at the heart of this case.

7. That question leads me to the third feature of computer programs as subject matter protected by copyright: the relationship between that protection and the traditional principle of copyright that copyright protects not ideas but only their expression. That principle reflects the very purpose of copyright, which is to contribute not only to creation, by protecting the creative work of authors, but also to the dissemination and the access to ideas, by preventing their monopolisation, such that those ideas can be the source of further creations. However, the fact that the expression of computer programs, as they are normally disclosed, is imperceptible to people means that the ideas underlying those programs can be concealed, thus affording their authors protection which exceeds that which is justified by the objectives of copyright. [8] Thus, computer programs are the only category of protected works in respect of which access to the underlying ideas, by mere sensory analysis not involving acts subject to the author's exclusive rights, is impossible. [9]

[7] Or, more specifically, for the processor with a specific architecture because object code instructions are specific to each type of processor and will not be executed by a different type of processor.

[8] See, inter alia, Karjala, D.S., 'Copyright Protection of Computer Documents, Reverse Engineering and Professor Miller', *University of Dayton Law Review*, 1994, Vol. 19, pp. 975 to 1020.

[9] Shemtov, N., *Beyond the Code. Protection of Non-Textual Features of Software*, Oxford University Press, Oxford, 2017, p. 28. For further consideration of the idea/expression dichotomy in copyright and its application to computer programs, see, in particular, pp. 102 to 127 of that book.

8. I consider these introductory remarks to be necessary in order to place the present case in the specific context of the protection of computer programs by copyright. Indeed, the key issue in this case, that of the right to decompile a program, cannot arise in relation to any other category of protected subject matter, for the simple reason that neither the decompilation process, nor any similar process, is needed in order to access the content of the works belonging to categories other than computer programs.

Legal context

EU law

9. Article 1 of Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs [10] provides:

'1. In accordance with the provisions of this Directive, Member States shall protect computer programs, by copyright, as literary works within the meaning of the Berne Convention for the Protection of Literary and Artistic Works. For the purposes of this Directive, the term "computer programs" shall include their preparatory design material.

2. Protection in accordance with this Directive shall apply to the expression in any form of a computer program. Ideas and principles which underlie any element of a computer program, including those which underlie its interfaces, are not protected by copyright under this Directive.

3. A computer program shall be protected if it is original in the sense that it is the author's own intellectual creation. No other criteria shall be applied to determine its eligibility for protection.'

10. Under Article 4(a) and (b) of that directive:

'Subject to the provisions of Articles 5 and 6, the exclusive rights of the rightholder within the meaning of Article 2 shall include the right to do or to authorise:

(a) the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole. In so far as loading, displaying, running, transmis[s]ion or storage of the computer program necessitate such reproduction, such acts shall be subject to authorisation by the rightholder;

(b) the translation, adaptation, arrangement and any other alteration of a computer program and the reproduction of the results thereof, without prejudice to the rights of the person who alters the program;'

11. According to Article 5(1) of the directive:

'In the absence of specific contractual provisions, the acts referred to in Article 4(a) and (b) shall not require authorisation by the rightholder where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose, including for error correction.'

[10] OJ 1991 L 122, p. 42.

12. Finally, Article 6 of the same directive, which is entitled 'Decompilation', provides:

'1. The authorisation of the rightholder shall not be required where reproduction of the code and translation of its form within the meaning of Article 4(a) and (b) are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs, provided that the following conditions are met:

(a) these acts are performed by the licensee or by another person having a right to use a copy of a program, or on their behalf by a person authorised to [d]o so;

(b) the information necessary to achieve interoperability has not previously been readily available to the persons referred to in subparagraph (a);

and

(c) these acts are confined to the parts of the original program which are necessary to achieve interoperability.

2. The provisions of paragraph 1 shall not permit the information obtained through its application:

(a) to be used for goals other than to achieve the interoperability of the independently created computer program;

(b) to be given to others, except when necessary for the interoperability of the independently created computer program;

or

(c) 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.

3. In accordance with the provisions of the Berne Convention for the Protection of Literary and Artistic Works, the provisions of this Article may not be interpreted in such a way as to allow its application to be used in a manner which unreasonably prejudices the rightholder's legitimate interests or conflicts with a normal exploitation of the computer program.'

13. Directive 91/250 was repealed, with effect from 24 May 2009, pursuant to Article 10 of Directive 2009/24/EC.[11] However, the facts of the main proceedings remain subject, *ratione temporis*, to Directive 91/250. In any event, the relevant provisions of that directive have not been amended.

[11] Directive of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs (OJ 2009 L 111, p. 16).

Belgian law

14. Articles 4, 5 and 6 of Directive 91/250 were transposed into Belgian law, essentially verbatim, in Articles 5, 6 and 7 of the loi du 30 juin 1994 transposant en droit belge la directive 91/250/CEE du Conseil du 14 mai 1991 concernant la protection juridique des programmes d'ordinateur (Law of 30 June 1994 transposing into Belgian law Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs). [12]

Facts, procedure and questions referred

15. The Selection Office of the Federal Authorities ('SELOR') is a Belgian public institution integrated into the service public fédéral Stratégie et Appui (Policy and Support Federal Public Service), which is responsible for selecting and orienting the future personnel of the authorities' various public services. The Belgian State is designated as a party to the main proceedings.

16. Top System SA, a company governed by Belgian law, develops computer programs and provides various IT services to its customers. It has been working with SELOR for a number of years.

17. Top System is, inter alia, the author of a number of applications developed at SELOR's request, including the SELOR Web Access ('SWA'), which is also called 'eRecruiting'. Those applications comprise, on the one hand, 'tailor-made' components specifically intended to meet SELOR's needs and requirements and, on the other, components taken by Top System from the Top System Framework ('TSF'), a program authored by it. One of the components of the TSF is the DataGridEditor ('DGE'). SELOR has a license to use the applications developed by Top System.

18. On 6 February 2008, SELOR and Top System concluded service agreements, one of which concerns the installation and configuration of a new development environment as well as the integration of the sources of SELOR's applications into, and their migration to, that new environment. Between June and October 2008, there was an exchange of emails about problems affecting certain applications, in particular the eRecruiting application.

19. Proceedings were subsequently brought before the commercial courts in Brussels (Belgium). In particular, on 6 July 2009, Top System brought an action against SELOR and the Belgian State before the tribunal de commerce de Bruxelles (Commercial Court, Brussels, Belgium) for a declaration, in essence, of the decompilation, by SELOR, of the TSF framework software. Specifically, Top System alleged infringement of its exclusive rights in the TSF and requested that SELOR and the Belgian State be ordered to pay damages. The case was referred to the tribunal de première instance de Bruxelles (Court of First Instance, Brussels, Belgium), which found the claim for damages to be unfounded.

20. Top System brought an appeal against that judgment before the referring court. Before that court, SELOR admits to having decompiled part of the TSF – the functionalities of which have been integrated into SELOR's applications – in order to disable a faulty function. SELOR contends that it is authorised to undertake that decompilation, in the first place, contractually, a claim which the referring court dismisses as unfounded, and, in the second instance, pursuant to the provisions transposing Article 5(1) of Directive 91/250. By contrast, Top System, whilst

[12] *Moniteur belge* of 27 July 1994, p. 19315.

disputing the existence of an error in its software, claims that the decompilation of a computer program is permitted, extra-contractually, only under Article 6 of that directive and for the purpose not of error correction but of the interoperability of independent software.

21. It is in that context that the cour d'appel de Bruxelles (Court of Appeal, Brussels, Belgium) decided to stay proceedings and refer the following questions to the Court for a preliminary ruling:

'(1) Is Article 5(1) of [Directive 91/250] to be interpreted as permitting the lawful purchaser of a computer program to decompile all or part of that program where such decompilation is necessary to enable that person to correct errors affecting the operation of the program, including where the correction consists in disabling a function that is affecting the proper operation of the application of which the program forms a part?

(2) In the event that that question is answered in the affirmative, must the conditions referred to in Article 6 [of Directive 91/250], or any other conditions, also be satisfied?'

22. The request for a preliminary ruling was received at the Court on 14 January 2020. Written observations have been submitted by the parties to the main proceedings and the European Commission. In the light of the current circumstances relating to the health crisis, the Court decided to cancel the hearing. The parties replied in writing to questions put by the Court.

Analysis

The first question referred

23. By its first question referred for a preliminary ruling, the referring court asks, in essence, whether Article 5(1) of Directive 91/250 permits a lawful acquirer of a computer program to decompile that program where such decompilation is necessary in order to correct errors affecting its functioning. It is apparent from the order for reference that the doubts entertained by that court concern, inter alia, the argument advanced by Top System that the decompilation of a computer program is permitted only in the situation provided for in Article 6 of that directive [13] and is, therefore, precluded in the situations covered by Article 5 of the directive. In order to reply to that question, consideration must be given to the prerogatives of the holder of copyright in a computer program as compared with those of a lawful acquirer of that program.

The relationship between the rightholder and the lawful acquirer of a computer program

24. First of all, Article 4 of Directive 91/250 lays down the exclusive rights of the copyright holder, rights of a preventative nature, [14] in its computer program. The first of those rights is the right of reproduction, which is defined in particularly broad terms because it covers not only any form of reproduction, whether permanent or temporary, but also acts of reproduction necessary to use a program. Unlike other categories of works, in any case those which are distributed on their own medium, a computer program always requires a reproduction, if only a temporary one, in the computer's memory in order for that program to be used. The rightholder's exclusive rights

[13] That is to say, in order to ensure the interoperability of a computer program created independently from the decompiled program.

[14] The rightholder has the right 'to do or to authorise'.

therefore constitute, as far as computer programs are concerned, greater intrusion into the private sphere of the user than in the case of other categories of protected subject matter, because those rights require de facto the authorisation of the rightholder even simply to use the program. In addition, Directive 91/250 does not include exceptions equivalent to those provided for in Article 5(1) and (2)(b) of Directive 2001/29/EC. [15]

25. Next, Directive 91/250 makes subject to the rightholder's exclusive rights a whole series of acts concerned with the alteration of a computer program, including 'the reproduction of the results thereof'. Here again, the rightholder's rights are particularly extensive as compared with traditional copyright solutions, under which alterations of the work may fall within the exclusive sphere of the author only where the results of the alteration are made public.

26. Thus, the copyright holder's exclusive rights in a computer program cover not only traditional acts of exploitation of the work under copyright, but also the enjoyment of that work in the user's private sphere.

27. Lastly, Directive 91/250 enshrines the right of distribution, with which the present case is not concerned.

28. That broad definition of the rightholder's prerogatives is however limited with regard to the rightholder's relations with a lawful acquirer of its computer program. In accordance with the opening sentence of Article 4 of Directive 91/250, exclusive rights are conferred on the rightholder 'subject to the provisions of Articles 5 and 6' of that directive. Thus, although those articles are presented as exceptions to the exclusive rights, [16] they are in fact a restriction inherent in such rights. In addition, under Article 5(1) of the directive, the acts referred to in Article 4(a) and (b) thereof – that is to say, the reproduction and any forms of alteration of the program – do not require authorisation by the rightholder where they are necessary for the use of the program by the lawful acquirer, including for error correction.

29. However, Article 5(1) of Directive 91/250 contains a reservation of its own: acts carried out by the lawful acquirer of a computer program in the context of using that program are not subject to the rightholder's exclusive rights 'in the absence of specific contractual provisions'.

30. Ultimately, the end result of Article 4(a) and (b) of Directive 91/250 is actually to permit the holder of copyright in a computer program, in its relations with a lawful acquirer of its program, to define by contract, in detailed terms, the rules for use of that program by that acquirer. By contrast, in the absence of such contractual provisions, the acquirer is free to carry out acts subject, as a rule, to the rightholder's exclusive rights, provided that the program in question continues to be used in accordance with its intended purpose, which includes the correction of errors.

31. Furthermore, it is true that, according to the 17th recital of Directive 91/250, 'the acts of loading and running necessary for the use of a copy of a program which has been lawfully acquired, and the act of correction of its errors, may not be prohibited by contract'. However, it must be stated that analysis of the legislative part of that directive leads to the opposite conclusion. Indeed, not only does the directive not contain any explicit provision to the effect of that recital, nor does it allow even an interpretation to that effect. The only potentially relevant

[15] Directive of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society (OJ 2001 L 167, p. 10).

[16] Article 5 of Directive 91/250 is entitled 'Exceptions to the restricted acts'.

provision of Directive 91/250, namely Article 5(1) thereof, treats all the acts listed in Article 4(a) and (b) of the directive in the same way. That provision does not therefore leave any scope for interpretation which would allow certain acts, namely the loading and running of the computer program and the correction of errors, to be exempted from the reservation relating to specific contractual provisions contained in Article 5(1) of that directive. In addition, although the recitals of a directive may guide the interpretation of the provisions reflecting those considerations, they do however lack any legislative force allowing them to replace absent provisions or to lead to an interpretation *contra legem*.

32. This is a fortiori the case since the second sentence of Article 9(1) of Directive 91/250 explicitly provides that any contractual provisions contrary to Article 6 or to Article 5(2) and (3) of that directive are null and void. The fact that the EU legislature did not mention Article 5(1) of the directive in that sentence can therefore only be regarded as intentional.

33. It may be, as the Commission states in its reply to a question put by the Court in this regard, that the 17th recital of Directive 91/250 reflects the wording of the original proposal for that directive.[17] Article 5(1) of that proposal drew a distinction between licensing contracts negotiated between the parties and 'pre-formulated, standard' contracts, in which the freedom of contract of the acquirer of a computer program was limited to whether or not to enter into the contract. According to the Commission, the prohibition mentioned in the 17th recital concerns the second category of contracts only. However, the fact remains that the text of Article 5(1) of Directive 91/250 that was finally adopted does not make that distinction. Accordingly, the provisions of any user licensing agreement for a computer program may govern all aspects of such use, including loading, running and error correction.

34. This is not as irrational as it would appear prima facie. It is, of course, difficult to imagine a user license for a program which entirely prohibits that program's use. However, the use of the program may be restricted, for example, in terms of the number of computers on which the program may be installed and used, such that its loading and its running on additional computers, including by the same acquirer,[18] would be prohibited. This is a fortiori the case in relation to the correction of errors which is not, in normal circumstances, one of the acts necessary for the use of a computer program in accordance with its intended purpose. Error correction may therefore be reserved for the copyright holder without affecting the consistency of a license to use the program.[19]

35. I therefore understand the finding made by the Court in the judgment in *SAS Institut*,[20] that under the 17th recital of Directive 91/250 the acts of loading and running of a computer program necessary for that use may not be prohibited by contract, meaning that a user license entirely prohibiting the acts necessary for such use would be an inherent contradiction.[21] However, that finding cannot, in my view, be interpreted as conferring independent legislative force on that recital.

17 See Proposal for a Council Directive on the legal protection of computer programs (COM(88) 816 final), submitted by the Commission on 5 January 1989.

18 Unlike Article 5(3) of Directive 91/250, Article 5(1) of that directive refers not to the user of a copy of the program but to the acquirer of the program, regardless of the number of copies acquired.

19 Furthermore, contracts for the use of computer programs will be subject to other rules of law, such as provisions of contract law, consumer protection law and competition law. Those rules will restrict the freedom of contract of the parties, thus protecting the acquirers of computer programs from abuse by the holders of copyright in those programs.

20 Judgment of 2 May 2012 (C-406/10, EU:C:2012:259, paragraph 58).

21 Since it is contrary to the very purpose of a contract for the use of a computer program.

36. With regard, more specifically, to the correction of errors, an interpretation to the effect that it is not possible to preclude by contract the right of the acquirer of the program to make corrections would create an imbalance to the detriment of the copyright holders. That imbalance would be all the greater if the Court were to agree with my proposed reply in the present case and take the view that the acquirer should be granted the right to decompile the program for the purpose of such correction without seeking the rightholder's permission to do so in advance. This would deprive that rightholder of any possibility of opposing such decompilation. [22]

37. However, that question does not appear to me to be relevant in circumstances such as those at issue in the main proceedings. It is apparent from the case file that the contract between Top System and SELOR does not contain any provision prohibiting SELOR from correcting errors in Top System's computer programs or, in any case, that company is not relying on such provisions before the referring court. SELOR is therefore entitled, pursuant to Article 5(1) of Directive 91/250, to correct the errors in the programs concerned.

38. Accordingly, it is now necessary to consider whether that provision permits an acquirer of a computer program to decompile that program with the goal of correcting errors in it. I will begin my analysis by providing some clarification about the concept of 'decompilation'.

The concept of 'decompilation'

39. As I have already stated, [23] a computer program, written by the programmer in a programming language that people can understand, must then be transformed into a form which the computer can understand, that is to say into the machine language. That process is carried out using a special program, the compiler, and is called 'compilation'. The version of the program in the programming language is referred to as the 'source code' and the version in the machine language as the 'object code'. That process involves not simply transcribing the program into binary code, but rather 'translating' instructions formulated in functional and abstract terms in the source code into specific instructions for the components of a computer processor with a particular architecture. Some programs written in programming languages that are closer to the machine language ('low-level' languages) are not compiled but rather assembled. This is a process similar to the compilation process and, since Directive 91/250 does not distinguish between those two processes, the view must be taken that compiled programs and assembled programs are to be treated in the same way from a legal perspective.

40. Computer programs are usually distributed only in the form of object code, which people cannot understand. Accordingly, the lawful acquirer of a computer program, in so far as that acquirer wishes to learn the program's contents and make changes to it, inter alia with a view to correcting errors, must transform the object code in its possession into a program form that people can understand, that is to say code written in a programming language. That process, called 'decompilation', consists in reproducing the program's functional instructions from the instructions for the processor recorded in the object code. Decompilation is therefore a kind of 'reverse engineering', that is to say a process by which the finished product is used as the starting point for discovering how a complex tool is constructed, as applied to computer programs.

[22] In addition, it cannot be ruled out that decompilation may be carried out for an unlawful purpose unconnected with the correction of errors.

[23] See point 5 of this Opinion.

41. However, decompilation does not allow the original source code of the computer program in question to be reproduced. During the compilation process, some information contained in the source code that is not essential to the functioning of the computer's processor is lost and it cannot be restored via the decompilation process. Moreover, the same source code may give different results after compilation, depending on the configuration of the compiler. The end result of decompilation is therefore a third version of the program, which is often called the 'quasi-source code'. A program decompiled in that way can, however, be recompiled once more into a functioning object code.

Decompilation as an element of the author's exclusive rights

42. When asked whether the decompilation of a computer program is covered by the author's exclusive rights, as defined in Article 4(a) and (b) of Directive 91/250, the interested parties who submitted observations in this case answered unanimously in the affirmative. The Commission provided a detailed reply in this regard. In its view, in essence, although there is no direct reference to decompilation in those provisions, a number of acts which together make up the decompilation process, such as the reproduction and the alteration of the computer program, are clearly subject to the author's exclusive rights.

43. I agree with that view.

44. Under the first sentence of Article 1(2) of Directive 91/250, protection in accordance with that directive is to apply to the expression in any form of a computer program. In addition, as the Court has already held, both the source code and the object code are two forms of expression of the same computer program and both are protected. [24] Passage from one form to the other therefore means that the program has to be reproduced and altered.

45. As for decompilation, it consists in a transformation of the program in (protected) object code form into 'quasi-source code'. The latter is a reproduction of the program resulting from its alteration; that alteration consists in the translation of the machine language into a programming language. Such reproduction is expressly subject to the exclusive right of the program's author pursuant to Article 4(b) of Directive 91/250.

46. That is, moreover, confirmed by the 19th recital of that directive, which states that 'the unauthorised reproduction, translation, adaptation or transformation of the form of the code in which a copy of a computer program has been made available constitutes an infringement of the exclusive rights of the author'.

47. Lastly, one final confirmation that decompilation falls within the scope of Article 4(a) and (b) of Directive 91/250 can be found in Article 6(1) of that directive. Article 6 of the directive, which is entitled 'Decompilation', refers to the 'reproduction of the code and translation of its form *within the meaning of Article 4(a) and (b)*' [25] of that directive. This is therefore an indirect definition of the concept of 'decompilation' within the meaning of Directive 91/250, and a definition which expressly refers to the exclusive rights of the author of a computer program listed in Article 4(a) and (b) of that directive.

[24] Judgment of 2 May 2012, *SAS Institute* (C-406/10, EU:C:2012:259, paragraphs 37 and 38).

[25] Emphasis added.

48. It must therefore be concluded that the decompilation of a computer program falls within the scope of the exclusive rights of the author of such a program as provided for in Article 4(a) and (b) of Directive 91/250.

The inclusion of decompilation in the scope of Article 5(1) of Directive 91/250

49. The finding made in the preceding point means that the answer to the question whether decompilation is covered by the exception (or, more accurately, the limitation) laid down in Article 5(1) of Directive 91/250 must be in the affirmative. I am in agreement with the Commission in this regard.

50. Under that provision, the lawful acquirer of a computer program is entitled to carry out all the acts listed in Article 4(a) and (b) of Directive 91/250, as those acts are necessary for the use of that program, including for error correction. Accordingly, it is entirely logical that if decompilation or the constituent acts of that process, such as the reproduction and transformation of the code, fall within the scope protected under Article 4(a) and (b) of that directive, those acts must necessarily also fall within the scope covered by Article 5(1) of the directive.

51. The interpretation of those provisions put forward by Top System, namely that decompilation falls within the sphere of the author's exclusive rights pursuant to Article 4(a) and (b) of Directive 91/250 but is excluded from the exemption provided for in Article 5(1) of that directive, cannot be accepted. The construction and the wording of those provisions clearly demonstrate that those two interpretations are mutually exclusive.

The contribution of Article 6 of Directive 91/250

52. Top System submits, however, that Article 6 of Directive 91/250 should command an interpretation of Article 5(1) of that directive that differs from the one I have proposed above. According to that company, Article 6 of that directive forms a sort of *lex specialis* and is the only provision relating to decompilation. In its view, since that provision is *lex specialis*, decompilation is excluded from the scope of Article 5(1) of Directive 91/250. In addition, it argues that, as Article 6 of that directive permits decompilation solely for the purpose of ensuring the interoperability of independently created computer programs, decompilation with a view to correcting errors in a computer program carried out without the authorisation of the copyright holder is prohibited.

53. That line of argument does not, however, stand up to criticism.

54. Indeed, as I have stated, Article 5(1) of Directive 91/250 does not list the various acts which it covers. That provision simply refers to Article 4(a) and (b) of that directive, exempting from the obligation to obtain the copyright holder's authorisation 'the acts referred to' in Article 4(a) and (b), where they are necessary for the use of a computer program. In addition, that provision does not contain any reservation relating to Article 6 of the directive.

55. By contrast, Article 6(1) of Directive 91/250 relates to two specific categories amongst the acts covered by Article 4(a) and (b) of that directive, namely the 'reproduction of the code' and the 'translation of its form', where those acts are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs. This is a different objective from that referred to in Article 5(1) of the directive.

56. There is therefore nothing to indicate that Article 6 of Directive 91/250 constitutes *lex specialis* as compared with Article 5(1) of that directive. The scope of the two provisions is different because they cover different situations. Article 5(1) concerns the acts necessary for the use of the computer program, including for error correction, whereas Article 6 concerns the acts necessary to ensure the interoperability of independently created programs. Both provisions are therefore independent from one another and a relationship of *lex specialis* / *lex generalis* does not exist between them.

57. Top System's argument that Article 6 of Directive 91/250 is the only provision that permits the decompilation of a computer program must therefore be rejected.

The effect of the travaux préparatoires ***for Directive 91/250***

58. The conclusion that Article 5(1) of Directive 91/250 covers the decompilation of a computer program with the goal of correcting errors in it is not invalidated, contrary to Top System's claim, by the guidance provided in the *travaux préparatoires* for that directive.

59. Accordingly, I disagree with Top System's arguments, as developed inter alias in its reply to the questions put by the Court, that the *travaux préparatoires* for Directive 91/250 show that the decompilation of a protected computer program is possible only in the circumstances and for the purposes defined in Article 6 of that directive. The documents cited by Top System show that it was clear from the start of the *travaux préparatoires* that the exclusive rights of authors defined in Article 4(a) and (b) of the directive would cover the decompilation of the protected program. In addition, since Article 5(1) of Directive 91/250 permits a lawful acquirer to perform all the acts listed in Article 4(a) and (b) of that directive, where necessary for the use of the program, including for error correction, this necessarily encompasses decompilation. Thus, the entire debate during the legislative process for Directive 91/250, which resulted in the addition, to the Commission's initial draft, of the current Article 6 of that directive, concerned decompilation conducted *outside* the normal use of a computer program and, therefore, outside the framework of Article 5(1) of the directive. That decompilation was, in fact, for the purpose of the interoperability of programs created by independent authors.

60. It is therefore incorrect to claim, as Top System does, that the question of decompilation is definitively excluded from Article 5 of Directive 91/250. For decompilation to be excluded from Article 5(1) of that directive, it would also have to be excluded from Article 4(a) and (b) of the directive, which would move it entirely outside the exclusive sphere of the copyright holder given the absence of any other provision capable of guaranteeing that rightholder protection against decompilation. Such a conclusion would be absurd.

61. All that the *travaux préparatoires* for Directive 91/250 reveal is that the original idea of including the exception for decompilation for the purposes of interoperability in a specific paragraph of Article 5 of that directive (separate from paragraph 1 thereof) was abandoned in favour of the creation of a new, more detailed article devoted to that exception. However, that in no way affects the scope of Article 5(1) of the directive.

62. It is true that the Council greatly restricted the scope of that new exception. In particular, it dropped the idea, initially presented by the Commission, of permitting decompilation for the purpose of the maintenance of the newly created program that is interoperable with the decompiled program. This can be explained, to my mind, by the fact that, pursuant to the second sentence of Article 9(1) of Directive 91/250, it is not possible to derogate from that exception by

contractual means, unlike in the case of Article 5(1). The goal was therefore to protect copyright holders from abuse. The fact remains that, in such cases, decompilation is carried out for purposes outside the normal use of the program. [26]

63. I therefore share the Commission's view that the *travaux préparatoires* for Directive 91/250 cannot be used in support of conclusions different from those drawn from a literal and schematic interpretation of Article 5(1) of that directive.

Proposed reply

64. I therefore propose that the first question referred for a preliminary ruling be answered to the effect that Article 5(1) of Directive 91/250 is to be interpreted as permitting a lawful acquirer of a computer program to decompile that program where that is necessary in order to correct errors affecting its functioning.

The second question referred

65. By its second question referred for a preliminary ruling, the referring court asks if, in the event that Article 5(1) of Directive 91/250 were to be interpreted as permitting a lawful acquirer of a computer program to decompile that program where that is necessary in order to correct errors, that decompilation must satisfy the requirements laid down in Article 6 of that directive or, indeed, other requirements.

The applicability of the requirements under Article 6 of Directive 91/250

66. Article 6 of Directive 91/250 provides for an exception to the exclusive rights of the holder of copyright in a computer program which allows that program to be decompiled where that is necessary in order to ensure the compatibility of another independently created program with the program. That exception is accompanied by a number of conditions and prohibitions which are listed in that provision.

67. As per my analysis, [27] Article 6 of Directive 91/250 is independent from Article 5 of that directive, in particular from paragraph 1 of the latter article. The exception introduced by Article 6 of the directive differs in its scope and its objectives from the exception provided for in Article 5(1) of that directive, and it differs also in its definition of the acts permitted by it.

68. The requirements laid down in Article 6 of Directive 91/250 cannot therefore apply, directly or by analogy, to the exception provided for in Article 5(1) of that directive.

69. However, that does not mean that the application of the latter exception does not have to satisfy any other requirement.

[26] Furthermore, as I will explain subsequently, Article 5(1) of Directive 91/250 does not, in my view, allow a computer program to be decompiled for the purpose of the maintenance of the decompiled program, save for error correction *stricto sensu* (see points 75 and 76 of this Opinion).

[27] See, inter alia, points 52 to 56 of this Opinion.

The other applicable requirements

70. In the light of the wording of Article 5(1) of Directive 91/250, certain requirements and certain restrictions are inherent in the exception to exclusive rights established by that provision. [28]

71. First of all, that exception benefits only the lawful acquirer of a computer program. That point does not appear to raise any issues in the main proceedings and therefore need not be considered further.

72. Next, the acts performed, here the acts which – together – make up the decompilation of a computer program, [29] must be necessary in order for that program to be used in accordance with its intended purpose and, more specifically, for error correction. The following comments must be made in relation to that condition.

73. First, the concept of an 'error' has to be defined. After all, the very existence of an error in a computer program may be a matter of dispute between the author and the user of that program. [30] Something that may constitute an error from the user's perspective may be an intended function or feature from the point of view of the program's author. Although Directive 91/250 does not provide a definition of that term, one may however be inferred from the wording and the purpose of Article 5(1) of that directive.

74. Under that provision, the acts carried out by the lawful acquirer of a computer program must enable that acquirer to 'use [that program] … in accordance with its intended purpose, including for error correction'. The correction of errors therefore constitutes a use of the program in accordance with its intended purpose.

75. The intended purpose of the computer program is that defined by its author or, as the case may be, that agreed between the supplier and the purchaser of the program when it is acquired. An error is therefore a malfunction which prevents the program from being used in accordance with its intended purpose. The correction of such errors is the only possible justification for acts by the user, including decompilation, which are carried out without the copyright holder's consent.

76. By contrast, any amendment or improvement of the program as compared with its original intended purpose is not a correction of errors that justifies such acts. This includes, inter alia, the updating of the program in line with technological progress. In other words, the technical obsolescence of the computer program is not an error within the meaning of Article 5(1) of Directive 91/250.

77. Since computer programs are not only a category of utilitarian works but are also part of an industry in which technological development occurs at a particularly rapid pace, it is normal for them to become obsolete over time. In addition, addressing such obsolescence by updating computer programs, or even by replacing them with new programs, is part and parcel of the normal exploitation of such programs as subject matter protected by copyright and, therefore, of the prerogatives of the copyright holders.

[28] See, inter alia, Janssens, M.-Ch., op. cit., p. 127.

[29] See points 45 to 47 of this Opinion.

[30] In the main proceedings, Top System denies that there is an error in the program at issue, even though the referring court points to an expert's report that finds that such an error does exist.

78. Secondly, the intervention of the user of the computer program must be necessary from the perspective of the objective pursued. In the present case, the question is whether and to what extent the decompilation of a computer program is necessary in order to correct errors in it.

79. There are certainly errors that can be corrected without access to the program's source code, either 'manually' by the user or with the help of specialised software. However, the parties who submitted observations in the present case appear to be in agreement that such correction more often than not requires amendments in the program's actual code. Since the object code cannot be understood by people, such correction necessitates access to the original source code or the translation of the object code into source code ('quasi-source code').[31] The following question therefore arises: in what circumstances does that need justify the decompilation of the program by its lawful acquirer?

80. Top System submits that such cases are very rare and exceptional. In that company's view, in most situations, either the lawful acquirer of a computer program already has the source code, or the copyright holder can give the acquirer access to it, or the rightholder is responsible for the correction of errors under a maintenance contract.

81. I will set aside the situation in which the lawful acquirer has a non-compiled or already decompiled version of the program, that is to say access to the source code. It is clear that, in that scenario, decompilation is not necessary. The more problematic issues are the relationship between that acquirer and the holder of copyright in the computer program and their mutual obligations. However, the issue here is not the need to decompile the program in order to correct errors, but rather the condition for the application of Article 5(1) of Directive 91/250, namely the absence of contractual provisions precluding it.

82. As a reminder, Article 5(1) of Directive 91/250 applies 'in the absence of specific contractual provisions'. In other words, the contract under which the program is acquired may organise the use of the program, including error correction, such that it restricts the acquirer's ability to carry out acts subject to the rightholder's exclusive rights for the purpose of error correction. That restriction may go as far as an absolute prohibition on the correction of errors by the acquirer.[32] In such a situation, the exception provided for in that provision does not apply and the acts of the acquirer are limited to those permitted under the contract.

83. However, if the contract between the parties does not include such a restriction, the lawful acquirer of a computer program is, in my view, free to carry out the acts listed in Article 4(a) and (b) of Directive 91/250, including the decompilation of the program, where that proves necessary inter alia in order to correct errors. That acquirer has no other obligations towards the holder of copyright in the program. It is therefore not obliged to ask the rightholder to correct the errors, to request access to the program's source code, or to bring legal proceedings seeking an order that the rightholder perform a particular act. By contrast, although those are not obligations under Article 5(1) of the directive, it must be borne in mind that decompilation is a time-consuming and expensive process with uncertain effects. In practice, users will therefore make use of that technique only as a last resort.[33]

[31] See point 41 of this Opinion.

[32] Such a possibility exists, in my view, despite the wording of the 17th recital of Directive 91/250 (see points 31 to 34 of this Opinion).

[33] A number of authors point to this aspect of decompilation. See, inter alia, Bing, J., op. cit., pp. 423 and 424.

84. It will, of course, be for the court having jurisdiction, in the event proceedings are brought, to determine the exact content of the contractual rights and obligations of the parties to the contract under which a computer program was acquired.

85. Although the correction of an error often means that a minute fragment of a computer program's code has to be amended, finding that fragment may mean having to decompile a substantial part, if not all, of the program. Accordingly, such decompilation cannot be regarded as unnecessary for the correction of the error, as that would make the correction impossible and deprive the exception laid down in Article 5(1) of Directive 91/250 of its practical effect. The lawful acquirer of a computer program is therefore entitled, under that provision, to decompile the program to the extent necessary not only to correct an error *stricto sensu*, but also to locate that error and the part of the program that has to be amended.

86. Finally, it must be observed that Article 5(1) of Directive 91/250 makes no mention of restrictions as regards the use of the information obtained from the decompilation of a computer program, such as that referred to in Article 6(2) of that directive. However, it does not follow from that fact that the lawful acquirer of a computer program who has decompiled that program in order to correct errors in it is then free to use the results of that decompilation to other ends.

87. Article 4(b) of Directive 91/250 makes not only 'the translation, adaptation, arrangement and any other alteration of a computer program' subject to the author's exclusive rights, but also 'the reproduction of the results thereof', that is to say, in the case of decompilation, the source code resulting from that decompilation. Thus, any reproduction of that source code for a purpose other than the correction of errors is subject to the authorisation of the copyright holder. Furthermore, Article 4(c) of that directive prohibits the distribution to the public of a copy of a computer program without the consent of the holder of copyright in that program; this also applies to the copies of the source code resulting from decompilation.

88. However, under Article 1(2) of Directive 91/250, information which is not part of the program strictly speaking, that is to say a form in which it is expressed, is not protected. [34]

89. I therefore propose that the second question referred for a preliminary ruling be answered to the effect that Article 5(1) of Directive 91/250 is to be interpreted as meaning that the decompilation of a computer program, pursuant to that provision, by a lawful acquirer, in order to correct errors in that program, is not subject to the requirements of Article 6 of that directive. However, such decompilation may be carried out only to the extent necessary for that correction and within the limits of the acquirer's contractual obligations.

[34] I must point out that, in my opinion, that interpretation does not afford the holder of copyright in a computer program lesser protection than that afforded by Article 6(2) of Directive 91/250 in the case of decompilation for the purposes of the interoperability of independently created programs. When read in the light of Article 1(2) of that directive, Article 6(2) thereof can be interpreted only as meaning that the term 'information' covers only the elements of a computer program that are protected under the directive, that is to say the forms in which it is expressed, and not the 'ideas and principles which underlie' those elements. Furthermore, I would recall that, pursuant to the second sentence of Article 9(1) of Directive 91/250, decompilation on the basis of Article 6 of that directive cannot be excluded by contract, unlike decompilation carried out for the purpose of error correction.

Conclusion

90. In the light of the foregoing considerations, I propose that the Court should answer the questions referred by the cour d'appel de Bruxelles (Court of Appeal, Brussels, Belgium) for a preliminary ruling as follows:

(1) Article 5(1) of Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs is to be interpreted as permitting a lawful acquirer of a computer program to decompile that program where that is necessary in order to correct errors affecting its functioning.

(2) Article 5(1) of Directive 91/250 is to be interpreted as meaning that the decompilation of a computer program, pursuant to that provision, by a lawful acquirer, in order to correct errors in that program, is not subject to the requirements of Article 6 of that directive. However, such decompilation may be carried out only to the extent necessary for that correction and within the limits of the acquirer's contractual obligations.