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THE PROTECTION OF MAPS AND SPATIAL DATABASES IN EUROPE AND THE UNITED STATES BY COPYRIGHT AND THE SUI GENERIS RIGHT¹

KATLEEN JANSSEN AND JOS DUMORTIER[†]

INTRODUCTION

Spatial data and applications play an ever-increasing part in our economy and in our society in general. Electronically generated maps and satellite imagery have become commonplace due to the development of route planners and Google Earth. Local authorities are using satellite and aerial photography to trace violations of building permits or environmental legislation. In the field of leisure, activities such as geocaching, treasure hunting with a GPS device,² and GPS-guided hikes or cycling tours are captivating the interest of the general public.³

While information technology and the Internet have made an enormous contribution to the dissemination of spatial data, they have also caused a considerable increase in the copying of data, maps, route descriptions, hiking trails, etc. In the battle against the illegal copying of spatial data, the data producers turn to several means of protection, such as intellectual property legislation, unfair competition, confidentiality

1. This paper relies on research done in the course of the European FP6 project Walkonweb (<http://www.walkonweb.org>). The goal of this project is to develop a new publishing model for walking and tourist information. This model is elaborated by developing the necessary applications for content creation and dissemination, and by defining a supporting business model.

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2. *E.g.* Groundspeak, Inc. <http://www.geocaching.com> (last accessed Sept. 28, 2006).

3. *E.g.* Lannoo, <http://www.lannoowandelen.be> (last accessed Sept. 28, 2006); Fédération Française de la Randonnée Pédestre, <http://www.ffrandonnee.fr> (last accessed Sept. 28, 2006); Trails.com, Inc., <http://www.trails.com> (last accessed Sept. 28, 2006); About, Inc., <http://walking.about.com> (last accessed Sept. 28, 2006); The Trail Database, <http://www.traildatabase.org> (last accessed Sept. 28, 2006).

and privacy. In addition, contracts between information suppliers and users, and technical measures or devices are other means of exercising control. Of all these means, intellectual property rights, even though they provide one of the most commonly used refuges for the protection of spatial data, are also the most contested protection regime. Spatial data refers to factual situations; accordingly because their value lies in the accurate representation of reality, their eligibility for copyright may be questionable.

The development of ICT has brought the question of copyright of spatial data to the forefront, but it is certainly not a new issue. The protection of traditional analogue maps was also contested because they could be considered either as a depiction of reality or as a compilation of factual data of which the originality might be doubtful. Nevertheless, the change from paper maps to electronic spatial databases has given rise to new challenges.

After determining what is meant by spatial data, this paper will reflect on the protection of maps by copyright in the European Union and the United States, both as pictorial representations and as compilations. It will also look at the consequences for copyright protection of the transfer from analogue to digital maps and spatial databases, and it will address the *sui generis* database right, which is the European solution for protection of spatial databases that do not meet the criteria for copyright protection.

A DEFINITION OF SPATIAL DATA

The terms *spatial data*, *spatial information*, *geographic data* and *geographic information* are often used interchangeably. While *spatial* and *geographic* can often be seen as having the same scope, this is not the case for *data* and *information*. Spatial or geographic data can be defined as “any data with a direct or indirect reference to a specific location or geographical area,”⁴ or “data concerned with the size, area or position of any location, event or phenomenon.”⁵ They can be present in a broad range of products and services, such as city maps, tour guides, nautical charts, navigation systems, census data, cadastre information, satellite imagery, utility and transport networks, etc.

Spatial *information* refers to a higher level of aggregation, indicating that the spatial data, which are merely representations of facts, have

4. Commission of the European Communities, *Proposal for a Directive of the European Parliament and of the Council Establishing an Infrastructure for Spatial Information in the Community (INSPIRE)*, <http://www.ec-gis.org/inspire/proposal/EN.pdf> (accessed Nov. 10, 2006).

5. Douglas D. Nebert, *Developing Spatial Data Infrastructures: The SDI Cookbook*, <http://www.gsdi.org/docs2004/Cookbook/cookbookV2.0.pdf> (Jan. 25, 2004).

been put into a context. It refers to data processed, organized or classified into categories to serve some useful purpose.⁶ The next level on the chain would be *knowledge*, which the addressee derives from the information through his own effort: the contribution of the human mind to the information brought to it.⁷

In a copyright context, it is important that spatial data is represented by points, lines, polygons or image bits. Spatial data are very expensive to collect, store and manipulate, and their value lies in their accuracy and their comprehensiveness. That the creator of this data wants to protect his efforts and his investments in these spatial data is self-explanatory. It is, however, not always easy to determine whether or not he can do this under copyright regulation.

COPYRIGHT ON MAPS AND SPATIAL DATA

FOUNDATIONS OF COPYRIGHT

Traditionally, the purpose of copyright and other intellectual property rights is twofold. On the one hand, the progress of arts and sciences will only be possible if authors are rewarded for their efforts. If there is no incentive for creation, innovation will wither. This is a utilitarian motive. On the other hand, a more natural right motive states that the creator should be able to reap the fruits of his labour and control the exploitation and use of his work.⁸ These objectives are reached by giving the author certain exclusive rights to exploit his work – more strictly, to prevent others from exploiting it – for a limited period of time.⁹

The norms of copyright are embodied in an interlocking network of international treaties, European regulations and national legislation. First, there is the Berne Convention, the oldest international treaty on intellectual property rights, which dates from 1886.¹⁰ All Member States of the European Union and the United States are a member of the Berne Union, entailing that their rules can require Member States to offer more, but not less protection than is required by the Berne Conven-

6. George Cho, *Geographic Information Systems and the Law, Mapping the Legal Frontiers*, 28 (John Wiley & Sons 2001).

7. *Id.* at 31.

8. EUROGI, *Legal Protection of Geographical Information: Copyright and Related Rights. Bottlenecks and Recommendations*, 8 (Eurogi, 1997); Sir Hugh Laddie, Peter Prescott & Mary Vitoria, *The modern Law of Copyright and Designs* vol. 1, 5 (Butterworths Law, 2000).

9. *Id.*

10. See World Intellectual Property Organization, *Berne Convention for the Protection of Literary and Artistic Works*, http://www.wipo.int/treaties/en/ip/berne/trtdocs_wo001.html (Sept. 28, 1979) (including the full text of the convention, which has been revised seven times since then, for the last time in 1971).

tion. Under article 2 of the Convention, literary and artistic works protected by copyright include:

Every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; dramatic or dramatico-musical works; choreographic works and entertainments in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography; works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; *illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science.*¹¹

This list is not exhaustive and what is to be considered as a work eligible for copyright protection can differ between different countries.

Two other international agreements that should be mentioned are the WIPO Copyright Treaty of 1996 and the TRIPs Agreement (Agreement on Trade Related-Aspects of Intellectual Property Rights). The WIPO Copyright Treaty¹² is a protocol to the Berne Convention, which concentrated on finding harmonizing solutions for deficiencies in existing copyright law caused by the advent of software, databases and the digital environment. It included the protection of computer programs as literary works and the protection of compilations of data or other material "which by reason of selection or arrangement of their contents constitute intellectual creations."¹³ The TRIPs agreement¹⁴ also addresses, among other things, the protection of computer programs and compilations.

The institutions of the European Union have also created a substantial body of copyright norms, in the form of a number of directives implemented by the Member States, including the harmonization of the term of protection,¹⁵ the legal protection of software¹⁶ and databases,¹⁷ the

11. *Id.* at art. 2 (emphasis added).

12. See World Intellectual Property Organization, *WIPO Copyright Treaty* http://www.wipo.int/treaties/en/ip/wct/trtdocs_wo033.html#P83_10885 (Dec. 20, 1996) (including the full text of the Treaty).

13. *Id.* at art. 5.

14. See World Trade Organization, *Agreement on Trade-Related Aspects of Intellectual Property Rights*, http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm (Apr. 15, 1994) (including the full text of the Agreement).

15. Directive 93/98/EEC of 29 October 1993 harmonizing the term of protection of copyright and certain related rights, OJ L 290, 24 November 1993, 9, available at http://europa.eu.int/eurlex/pri/en/oj/dat/2003/l_345/l_34520031231en00900096.pdf.

16. Directive 91/250/EEC of the Council of 14 May 1991 on the legal protection of computer programs, OJ L 122, 17 May 1991, 42, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31991L0250:EN:HTML>

adaptation of copyright to the information society¹⁸ and the enforcement of intellectual property rights.¹⁹

WHAT WAS BEFORE : THE COPYRIGHT PROTECTION OF MAPS

GENERAL

As was stated in the Berne Convention, works related to geography or topology can be protected by copyright, if they fulfil the criteria for protection. In general, two conditions need to be met. First, there needs to be a minimal form of originality, and second, this creation has to be expressed in a certain form. Ideas do not warrant copyright protection. The Berne Convention does not determine what the form of the expression should be, nor does it mention explicitly that a work should be original or result from creative endeavour to be protected. Nevertheless, it is generally accepted that originality or creativity is required for works protected by the Convention.²⁰ The national copyright acts do not define originality, and defining its scope has been left to the courts.²¹ In the United Kingdom, the traditional criterion is “skill, judgment and labour,” while the civil law countries regard originality as involving creativity. The United States previously had an approach similar to the one used in the United Kingdom, but judicial interpretation places the U.S. more in line with the civil law approach than the British.²²

Determining the level of originality required for the protection of maps can be a complicated matter. Traditional maps are pictorial representations of geographically related facts that are organized in such manner that the user can readily understand and easily extract the factual information portrayed. They are meant to be a rendition of reality and their most important aim is to depict that reality as accurately as possible. This will entail that, while maps can be protected as “literary” or “artistic” works under most national copyright legislations, this protection will be hindered by the rule that ideas, facts or situations are not

17. Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, OJ L 77, 27 March 1996, 20, available at <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996L0009:EN:HTML>.

18. Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society, OJ L 167, 22 June 2001, 10, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:167:0010:0019:EN:PDF>.

19. Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights, OJ L 195, 2 June 2004, 16.

20. J.A.L. Sterling, *World Copyright Law*, 292 (London, Sweet & Maxwell, 2003).

21. The national requirements for originality will be elaborated upon in the sections on the copyright protection of maps in the United Kingdom, the United States and the European continent.

22. Sterling, *supra* n. 20, at 292.

copyrightable, while the form in which they are expressed is copyrightable.²³ In some jurisdictions, the question has been raised under which denominator a map should be protected. Is it a literary work (i.e. a compilation), or is it an artistic work (i.e. a representation of reality that can be compared to a painting or a photograph)? We will see that in the United Kingdom and the United States, this could be more than a discussion on semantics, as the category of work a map is classified under may determine the interpretation of the originality test for copyright protection.²⁴

PROTECTION OF MAPS IN THE EUROPEAN CIVIL LAW SYSTEMS

In the civil law systems of the European continent, a work is generally regarded as original if it is the author's own intellectual creation and it expresses the author's personality. Necessary for that personal touch of the author, but not sufficient, is the fact that the elaboration of a form is accompanied by a choice between different possibilities: the author has chosen a certain formulation or manner of expression for his work from a choice of many. If there is no option whatsoever, personal touches are impossible.

The classic French theory is the most developed, but similar doctrines have been accepted by courts in Belgium, the Netherlands, Germany and Switzerland.²⁵ The French theory is that an original work "bears the mark of the personality of its author and confers on the created object a specific aspect."²⁶ The French courts have also referred to an "imprint of the personality of the author," "personal imprint," "reflection of the personality of the author," "imprint of creative personal talent," "seal of the personality of the author," etc.²⁷

The traditional French originality test became difficult to maintain for technological works like software and databases. Several courts have tried to adapt the originality requirements to newer types of works such as databases and computer software by elevating the classical test to a higher level of abstraction, namely the concept of creative choice.²⁸ The Supreme Court (Cour de Cassation) has in some cases accepted the criterion of "intellectual creation" rather than "mark of personality," but in general it maintains the traditional approach.²⁹ As for compilations, the

23. George Cho, *Geographic Information Science: Mastering the Legal Issues*, 136 (John Wiley & Sons, 2005).

24. *Cf. infra*.

25. Daniel J. Gervais, *Feist Goes Global: A Comparative Analysis of the Notion of Originality in Copyright Law*, 49 J. Copyright Soc'y U.S.A. 949, 970 (2002).

26. Sterling, *supra* n. 20, at 293.

27. *Id.*

28. Gervais, *supra* n. 25, at 969.

29. Sterling, *supra* n. 20, at 293.

Court made it clear that labour itself was insufficient, and that the choice of the method used by the author of the compilation should be taken into account.³⁰

The protection of maps is not explicitly addressed in every European Copyright Act. For instance, the Belgian copyright legislation does not contain any specific reference to the protection of maps or compilations. The French law includes maps and plans, drawings and plastic works relating to geography as separate categories in its list of protected works,³¹ together with illustrations, implying that a map should be seen as a pictorial representation than as a compilation of facts. The Dutch Copyright Act includes the same references, which are adapted from the Berne Convention.³² These three examples show that the European legislator – and the European judge, as we will see later on – has not been concerned with delineating between artistic and literary works, and with deciding whether a geographic map or other product should be one or the other. The reason for that is quite simple: no matter the type of work, the requirements for copyright protection are the same – an expression and originality, implying an author's own creation showing his personality. Therefore, whether a map is a literary or artistic work is of no importance. Of course, the European courts have to determine the level of originality required for the protection of maps, but in doing that, they only look at the map as a “work,” regardless of its literary or artistic character.

A considerable number of court cases regarding maps can be found. Unfortunately, due to the sometimes very concise character of European judgements, it is not always easy to determine why a court did or did not grant protection to a map, or how it determined whether a map was sufficiently original to be copyrightable.

The Austrian Supreme Court, although it recognized that maps can be subject to copyright, denied copyright in a map of upper Austria because it did not meet the criterion of being a personal intellectual creation.³³ The ‘bare’ representation of geographic facts such as the course of mountain-ranges, rivers, streets or the location of places, was considered by the court to be just as unoriginal as purely conventional representa-

30. Bull. civ. 1, May 2, 1989; JCP G 1990, II, 21392, note A. Lucas; RIDA 1/1990, at 309.

31. *Les Codes en Viguer*, www.legifrance.gouv.fr/WAspad/ListeCodes; *path* English version, select Intellectual Property Code-Legislative Part, search Article Number “L112-2” (accessed Oct. 6, 2006).

32. World Intellectual Property Organization, *WIPO Copyright Treaty*, Article 10, http://www.wipo.int/treaties/en/ip/wct/trtdocs_wo033.html (last updated on Dec. 20, 1996).

33. BKA/RIS Judikatur Justiz, *Gerichtstyp*, [http://www.ris.bka.gv.at/taweb-cgi/taweb?x=D&o=d&v=jus&d=JUST&i=64119&p=2&q=und\(19000101%3C14](http://www.ris.bka.gv.at/taweb-cgi/taweb?x=D&o=d&v=jus&d=JUST&i=64119&p=2&q=und(19000101%3C14) (last updated Jan. 4, 1992).

tions such as common symbols, the use of bold print to indicate mains roads, etc.

French courts have repeatedly recognized the copyright protection of maps. A 1996 judgement of the Court of Appeal of Douai decided that a map consisting of the various wine-producing regions of France, annotated to show the year and very superficial remarks concerning the vintage of each wine domain, was not original because it merely reproduced data trivial both in its presentation in the form of a map and in the remarks concerning the vintages.³⁴ In 1998, the Court of Appeals of Paris addressed the unauthorised use of maps in a travel guide. The maps had been ordered by a publishing company creating a travel guide and were later re-used without permission in a new edition of the guide because they were not original works. The Court of Appeals, however, did find the originality condition fulfilled and awarded copyright protection to the maps in question. The colour combinations and the fonts of the names on the map were considered the result of the personality of the author and therefore sufficiently original to merit copyright protection.³⁵ In a later decision, the same Court of Appeals considered a map of France with signposted long-distance walks (Grande Randonnées) to be original because the use of colours, the shapes of lakes and waterways, the way in which the isle of Corsica was included, made the map an original creation reflecting the personality of the author, worthy of protection by copyright.³⁶ The long-distance walking trails themselves were subject of another dispute before the French Supreme Court. In 1998, the Court made it clear that the making of walking trails is an intellectual creation that draws its originality from the *mise en oeuvre* of geographic, cultural and human criteria that reflect the personality of the author.³⁷

The Belgian Court of Appeals of Antwerp, deciding on the piracy of a street plan, also required personal creativity for a work to be eligible for copyright protection. But, the Court stated that the accuracy with which a city is depicted cannot prevent that the presentation, the elaboration or the lay-out can indicate originality, personal work or own creativity of the author.³⁸ In a later case, the lower court of Brussels was more strict.³⁹ The case concerned the copying of a world map for the background of a photograph. According to the Court, the work had to be an expression of the intellectual effort of the author and his personality. The map in question was definitely the result of an intellectual effort

34. Cour d'appel Douai, Oct. 7, 1996, (1997) 172 R.I.D.A. 190.

35. Société Varenne Entreprises EURL v. Société IDE SA, Cour d'appel Paris, 4 February 1998, unpublished.

36. See EUROGI, *supra* n. 8, at 16.

37. Bull. civ.1, June 30, 1998.

38. Hof van Beroep Antwerpen, Rechtskundig Weekblad, 21 (Feb. 15, 1990).

39. Brussels, *Auteurs en Media*, Ch. 7, 289 (Mar. 17, 1997).

because choices were made as to the scale, the cities mentioned, the font and colours. However, these choices were not enough to express the personality of the cartographer. For that, the form of expression needed to be one that was not used by most others to express the same idea. The choice of scale and colour of the countries on the map was not determinative of the author's personality, as they were standard choices, such as blue and green colours for the countries in the north and red and brown colours for the countries in the south.

While in the cases mentioned above, the court only looked at the maps in question as such, other courts also took into consideration the methods used in the production of maps, judging that they contributed to the original character of the cartographic products. A Dutch lower court held a city map to be copyrighted, mainly because the process of generalisation typically involved in map-making added to the elements required for originality. Similarly, in a case concerning the unauthorised reproduction of maps of the Ordnance Survey of Baden-Württemberg, the German Supreme Court ruled that generalisation is a process in which there is room for individual (according to the court, the cartographers) input since generalisation demands great accuracy and an excellent 'feel' for geography on the part of the cartographer.⁴⁰

PROTECTION OF MAPS IN THE UNITED KINGDOM

For a work to be protected under United Kingdom copyright regulations, it has to be a fixation in a tangible form, and it has to be original. The means of the fixation is irrelevant and could be a manuscript, a tape recording, a film, a computer memory, etc.⁴¹ In its turn, the originality test entails two basic requirements. On the one hand, the work cannot be merely a copy of a previous work, and on the other hand, it must be the result of the investment of sufficient individual skill, judgment or labour.⁴² Sterling states that skill and judgment on the one hand, and mere labour on the other hand, imply different qualities of contribution and should be distinguished. Skill and judgment imply the application of personal choice of some intellectual contribution akin to creativity. Mere labour does not carry this implication. Furthermore, it may be that some types of skill may be classed as "creative" whereas others may not.⁴³ In any case, the originality test of skill, judgment and labour is lower than the creativity requirement of the civil law systems even though some scholars find that, presumably due to the European harmonization efforts in copyright, the interpretations of originality in the Eu-

40. EUROGI, *supra* n. 8, at 16.

41. Laddie et al., *supra* n. 8, at 71.

42. Sterling, *supra* n. 20, at 304.

43. *Id.* at 306.

ropean continent and in the United Kingdom are moving towards each other.⁴⁴

Under the 1956 Copyright Act, maps were by definition artistic works, while the Act of 1911 classified them as literary works. Prior to 1911, the qualification by the owner would be decisive. If the owner of any alleged copyright described it as a map, it would seem that it was entitled to be treated as a literary work, while a description of the map as an engraving would result in the protection as an artistic work.⁴⁵ Since the 1988 Copyright, Designs and Patents Act, the discussion has been rekindled, because contrary to the uniform originality test on the European continent, the requirements for sufficient originality of a map in the United Kingdom may differ depending on whether the map is seen as a pictorial representation of reality, i.e. an artistic work, or as a compilation of facts.

If a map falls under the category of artistic works, it will be protected by copyright if it shows sufficient skill, judgment and labour. There is no need for creativity or a reflection of the author's personality. If a map is seen as a compilation, the matter is not that straightforward. Originally, compilations were also protected if they demonstrated substantial skill, judgment and labour, but since the 1996 European Database Directive, compilations that also fall under the directive's definition of a database are subject to a higher originality test of "constituting the author's own intellectual creation by reason of the selection or arrangement of the contents."⁴⁶ For compilations other than database, the originality test remained the same.

If a map can be fairly easily assumed as a compilation of factual data, can it also be classified as a database? The Database Directive and the 1988 Copyright Act define a database as a collection of independent works, data or other materials which are arranged in a systematic or methodical way and are individually accessible by electronic means.⁴⁷ To be independent, the works, data or other materials should be capable of being, or intended to be, appreciated or useful in isolation.⁴⁸ According to the European Court of Justice, the criterion of independence of the materials should be understood as meaning "that the data or materials must not be linked or must at least be capable of being separated without losing their informative content, which is why sound or pictures from a film are not covered. One possible approach to interpretation is to focus not only on the mutual independence of the materials from one another

44. *See. e.g. id.* at 307.

45. *Geographia Ltd. v Penguin Books Ltd. and others*, [1985] F.S.R. 208, Ch. D.

46. *Supra* n. 10, at Article 3. For the protection of databases by the sui generis right, *cf. infra*.

47. *Id.* at art. 1.2; Section 3A of the 1988 Copyright Act.

48. *Laddie et al.*, *supra* n. 8, at 1064.

but on their independence within a collection.”⁴⁹ According to a recent judgment of the German Civil Court of Munich (Landgericht München), the data within a map is individually accessible as the user can focus on one point on the map and can determine the coordinates of that specific point.⁵⁰ For each of these points, he can find out the altitude or the vegetation, etc. The second requirement that should be examined when determining if an analogue map is a database is the systematic or methodical arrangement. This requirement is not very demanding. The European Court of Justice made it clear that “[i]t is sufficient if a structure is established for the data and they are organized only following application of the appropriate search programme, and thus essentially through sorting and, possibly, indexation.”⁵¹ According to Laddie et al., any method of arrangement with an index would be included.⁵² This would entail that any map that includes a legend could be considered as a database. Such a legend would also ensure that the individual elements of the map could be located without searching through all the contents which Laddie et al., argue is sufficient to satisfy the criterion of “individual accessibility of the elements of the database.”⁵³ Hence, if a map is a database, as the Court of Munich accepted, it will need to be “the author’s own creation” to be protected. If it does not fulfil the conditions for being a database but is still considered as a compilation, skill, judgment and labour would suffice for protection, as it also would for an artistic work. Both requirements are fundamentally different in kind. The intellectual creation refers only to the arrangement or selection of the contents, so the skill and labour involved in gathering or verifying the data is not relevant. In addition, skill and labour do not require the demonstration of the personality of the author.⁵⁴

Unfortunately, there is very little British case law available addressing the nature and protection of maps. The opportunity for a milestone case presented itself in the dispute between the Automobile Association (AA) and Ordnance Survey, the government agency responsible for the official surveying and topographic maps of Great Britain. Ordnance Survey claimed to have discovered unauthorised copying of its maps by the AA: its experts had identified unique “fingerprints” in the publications of AA atlases, town plans and fold-out maps, which proved that the AA had

49. *Fixtures Marketing Ltd. v. Oy Veikkaus Ab*, C-46/02, 9 Nov. 2004, paragraph 36, OJ C 6, 8 (Jan. 2, 2005).

50. Michael Rosler-Goy, *Datbankenschutz gilt auch für Landkarten*, KN 2006, no. 2, 66.

51. *Fixtures Marketing Ltd.*, C-46/02, 9 Nov. 2004, paragraph 37, OJ C 6, 2.

52. Laddie et al., *supra* n. 8, at 1065.

53. *Id.* at 1066.

54. Hasan A. Deveci, *Databases: Is Sui Generis a Stronger Bet Than Copyright?*, 12 Intl. J. of L. & Info. Tech., 178, 197 (2004).

used Ordnance Survey's maps as a source. Unfortunately – at least for the purposes of legal research and theory – the dispute was settled mere hours before the parties were expected in the courtroom. AA and Ordnance Survey agreed on a payment of 20 million pounds over two years and a contract for AA to become a licensee of Ordnance Survey. The payment covered backdated royalty payments, interest on these amounts, Ordnance Survey's costs and an advance on future royalties.⁵⁵

PROTECTION OF MAPS IN THE UNITED STATES

The United States Copyright Act of 1976 establishes two fundamental prerequisites for copyright protection: fixation and originality.⁵⁶ First, a work can only be protected if it is fixated in a tangible medium of expression. This medium of expression may be one “now known or later developed” and the fixation is sufficient if the work “can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”⁵⁷ Originality, in its turn, contains two aspects: an independent creation by the author and a modest quantum of creativity.⁵⁸ The Supreme Court stated that “the *sine qua non* of copyright is originality” but “the requisite level of creativity is extremely low; even a slight amount will suffice.”⁵⁹ The level of creativity necessary and sufficient for “copyrightability” has been described as “very slight”, “minimal”, and “modest.”⁶⁰ According to Sterling, the test of originality under the Federal Copyright Act approximates to the civil law concept of originality, as it is constituted by creativity.⁶¹

The 1976 Copyright Act contains an explicit reference to maps under the §101 definition of pictorial, graphic and sculptural works, which include “two-dimensional and three-dimensional works of fine, graphic and applied art, photographs, prints and art reproductions, maps, globes, charts, technical drawings, diagrams and models.”⁶² On the other hand, it protects compilations, which are defined in §101 of the Copyright Act as “a work formed by the collection and assembling of pre-existing materials or of data that are selected, coordinated or arranged in such a

55. Guardian Unlimited, *The Guardian Digital Edition*, www.guardian.co.uk/uk_news/story/0,3604,447171,00.html (last updated Mar. 6, 2001); Ordnance Survey News Release, *Centrica and Ordnance Survey settle AA copyright case*, www.ordnancesurvey.co.uk/oswebsite/media/news/2001/march/centrica.html (accessed on Oct. 10, 2006).

56. C. Joyce, W. Patry, M. Leaffer and P. Jaszi, *Copyright law* 71 (5th ed., Lexis Publishing 2000).

57. 17 U.S.C.S. §102 (2006).

58. Joyce, *supra* n. 56, at 90.

59. *Feist Publications v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991).

60. *See e.g. West Publishing Co. v. Mead Data Central*, 799 F.2d 1219, 1223 (8th Cir. 1986).

61. Sterling, *supra* n. 20, at 304.

62. 17 U.S.C.S. § 101 (2006); Pub. L. No. 94-553, 90 Stat. 2541 (2006).

way that the resulting work, as a whole, constitutes an original work of authorship” which emphasizes the originality in selection and arrangement.⁶³ American jurisprudence and doctrine also have questioned whether maps are to be protected as compilations or pictorial representations, mainly because of the rejection of the “sweat of the brow” theory in *Feist*.⁶⁴

The 1991 Supreme Court decision *Feist Publications v. Rural Telephone Service Co.* held that telephone directories were not copyrightable because they were insufficiently original to merit protection.⁶⁵ Applying the principle of originality as a requirement for copyright protection to the telephone directories, it stated that, in order to be protected, the selection, coordination, or arrangement of data in a compilation must meet a minimum level of creativity.⁶⁶ The theory of “sweat of the brow” could not be supported because it would lead to protecting not only the compilation, but also the underlying facts.⁶⁷ Compilations might be original because the “author typically chooses which facts to include, in what order to place them, and how to arrange the collected data so that they may be used effectively by readers.”⁶⁸ The copyright in such a factual compilation is, however, ‘thin.’ A “subsequent compiler remains free to use the facts contained in another publication to aid in preparing a competing work, so long as the competing work does not feature the same selection and arrangement.”⁶⁹

Before *Feist*, maps were almost always seen as factual compilations based on objectively verifiable data, protected under the “sweat of the brow” doctrine.⁷⁰ This was based on the view of the courts regarding the purpose of maps: to present facts.⁷¹ A map’s only value was in the presentation of an objectively verifiable reality.⁷² The originality of the style or manner of presentation was not nearly as important to the reality that was presented.⁷³ Traditionally, the “sweat” that was required involved

63. *Id.*

64. *Feist Publications*, 499 U.S. 340.

65. *Id.* at 362-363.

66. *Id.* at 348.

67. Michelle R. Silverstein, *The Copyrightability of Factual Compilations: An Interpretation of Feist Through Cases of Maps and Numbers*, 1996 Ann. Surv. Am. L. 147, 148 (1996).

68. *Feist Publications*, 499 U.S. at 347.

69. *Id.* at 349.

70. Silverstein, *supra* n. 67, at 175-178; David B. Wolf, *Is There Any Copyright Protection For Maps After Feist?*, 39 J. Copy. Socy. 224, 227 (1992).

71. *Id.*

72. Dennis.S. Karjala, *Copyright in Electronic Maps*, <http://homepages.law.asu.edu/~dkarjala/Articles/Jurimetrics1995.html> (accessed Nov. 19, 2006).

73. Wolf, *supra* n. 70, at 227.

the charted terrain to be directly observed.⁷⁴ Combining existing information in the public domain without actually directly observing the information "in the field" was deemed insufficient, since "almost anybody could combine the information from several maps onto one map, but not everybody can go out and get that information originally and then transcribe it into a map."⁷⁵ One of the most cited map cases in this respect was the Second Circuit's decision in *General Drafting Co. v. Andrews* from 1930.⁷⁶ The case dealt with the copyright infringement of four automobile maps.⁷⁷ The court held that the maps were clearly the subject of copyright as compilations and that the elements of copyright "consist in the selection, arrangement, and presentation of the component parts."⁷⁸ The court actually did recognize the pictorial originality of the map saying that "considerable variation in road meanderings, shore lines, position of town and population symbols, and general scale are usual in order to accommodate the printed matter which is 'hand-stamped' on the final map" and that "consequently the maps of each map maker possess a final individual appearance and style."⁷⁹ Yet, the copying of this appearance and style did not infringe the copyright of the plaintiff, but the fact that the defendant did not make his map "after an independent investigation of the original sources," instead using the plaintiff's map as a basis for its activities, did infringe the copyright of the plaintiff.⁸⁰

The "direct observation" requirement was rejected by the Court of Appeals for the Ninth Circuit in *United States v. Hamilton* in 1978.⁸¹ The court found no reason for treating maps differently from other copyrighted material: "recording by direct observation is only one measure of a cartographer's skill and talent, and originality should not be made synonymous with a requirement that features of a copyrighted map be observed and recorded directly before they will be entitled to copyright protection."⁸² There is no fundamental difference separating a map from

74. Dale P. Olson, *Copyright Originality*, 48 Mo. L. Rev. 29 (1983).

75. *Amsterdam v. Triangle Publications*, 93 F. Supp. 79, 82 (E.D. Penn. 1950).

76. *General Drafting Co. v. Andrews*, 37 F.2d 54 (2nd Cir. 1930).

77. *Id.*

78. *Id.* at 55 (noting that the court explained the process of map making based on maps of the Geological Survey. The plaintiff obtained two sets of topographical maps, gained detailed information concerning road conditions through personal interviews with the county engineers, and recorded this information on the Geological Survey maps. The roads were classified according to their availability for automobile travel, and their actual condition was verified in many cases. The process of selection included the tracing only of information that was considered relevant for motorists on the final version of the map).

79. *Id.*

80. *Id.* at 56.

81. *U.S. v. Hamilton*, 583 F. 2d 448 (9th Cir. 1978).

82. Olson, *supra* n. 74, at 49.

other subject matter, and there is no special protection attached to maps, so there should be no criteria for assessing originality than the traditional criteria of skill, judgment and labour. *United States v. Hamilton* was one of the very few cases before *Feist* that paid attention to the pictorial aspect of maps: “[e]xpression in cartography is not so different from other artistic forms seeking to touch upon external realities that unique rules are needed to judge whether the authorship is original.”⁸³ It recognized the aspects of originality in maps that make them more like photographs and drawings than like directories.⁸⁴

In 1990, the Court of Appeals of the Fifth Circuit denied any protection to the pictorial form of a map in *Kern River Gas Transmission Co. v. Coastal Corp.*⁸⁵ Regarding maps of gas transmission lines based on independent surveys layered over a U.S. Geological Survey topographic map, the court decided that the maps used the only effective way of expressing the idea of the location of pipelines and therefore were not eligible for copyright.⁸⁶ The Court applied the merger doctrine, which provides that when the expression of an idea is inseparable from the idea itself, the expression and idea have merged, as such prohibiting copyright protection.⁸⁷ Thus, when there is essentially only one way to express an idea, “copying the expression will not be barred, since protecting the expression in such circumstances would confer a monopoly of the idea upon the copyright owner free of the conditions and limitations imposed by the patent law.”⁸⁸

Feist limited the “copyrightability” of maps that only include standard features of which the selection or arrangement did not show any creativity. Because of this, map makers would see their maps unprotected against unauthorized copying unless there were other means to avoid misappropriation. One of the possible solutions was to consider maps as pictorial representations. The first major map case after *Feist*, *Mason v. Montgomery Data Inc.* of the Fifth Circuit,⁸⁹ held that maps are pictorial, graphic works which should be protected for their expressive transformation of facts. It applied *Feist* in requiring creativity for the maps in question as a compilation, but it also considered the maps to show sufficient creativity to warrant protection “as pictorial and graphic works of authorship.”⁹⁰ It acknowledged that courts historically have treated maps as compilations, but stated that the Copyright Act of 1976

83. *Hamilton*, 583 F. 2d at 452.

84. Wolf, *supra* n. 70, at 224.

85. *Kern River Gas Transmission Co. v. Coastal Corp.*, 899 F. 2d 1458 (5th Cir. 1990).

86. *Id.* at 1464.

87. Cho, *supra* n. 6, at 136.

88. *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971).

89. *Mason v. Montgomery Data Inc.*, 967 F.2d 135 (5th Cir. 1992).

90. *Id.* at 142.

categorized maps as “pictorial, graphical and sculptural works” and that maps “have an inherent pictorial or photographic nature that merits copyright protection.”⁹¹ The Court rejected the application of the merger doctrine. It held that, in determining whether the merger doctrine is applicable, a court should examine whether the idea in question can be expressed in various ways. Thus, the court must first identify the idea that the work expresses and then attempt to distinguish that idea from the author’s expression of it.⁹² If the court can distinguish idea and expression, the work is copyrightable.⁹³ If this is not the case, the merger doctrine applies and the expression will not be protected.⁹⁴ In *Mason*, the Court found that a comparison with maps created by Mason’s competitors proved, beyond dispute, that the idea embodied in the map could be expressed in different ways, e.g. by differences in the placement, size or dimensions of surveys, tracts, or other features.⁹⁵

Considering the vulnerability of maps for misappropriation, Karjala finds it “not surprising that some courts have tried to circumvent *Feist* by developing new theories of copyright originality.”⁹⁶ Silverstein does not agree, stating that treating a map as a pictorial representation may provide a solution for the protection of maps after *Feist*, but in many cases, a map will still not show enough originality because the transformation of factual data to a map will still be no more than a graphical representation of that data, of which the most important value still lies in the accuracy and exactness.⁹⁷ As a map is a representation of reality, and there is only one true interpretation of what the land looks like, any creating or authoring of individual numbers or names on a map would render the map technically incorrect.⁹⁸ Yet, map-making always entails making choices in selecting the elements that need to be included and the way to best represent them. There is a creative effort, even though the map’s main purpose is accuracy. The creativity lies in the selection of the data, and therefore in the process of creating the map, however, and not in the final product itself. Karjala calls this the “sweat of the brain” theory.⁹⁹ If this theory would be successful and the intellectual creativity would lie in selecting the sources, but would not show on the resulting map, *Feist* would be rendered meaningless. *Feist* requires ex-

91. Cho, *supra* n. 23, at 142.

92. *Id.* at 138-139.

93. *Id.*

94. *Id.*

95. *Mason*, 967 F. 2d at 139.

96. Karjala, *supra* n. 72.

97. Michelle R. Silverstein, *The Copyrightability of Factual Compilations: An Interpretation of Feist Through Cases of Maps and Numbers*, 1996 Ann. Surv. Am. L. 147, 195 (1996).

98. *Id.* at 185-186.

99. Karjala, *supra* n. 72.

pressive creativity in the end product, independent of the manner or methodology by which the product was created.¹⁰⁰

Hence, treating maps as pictorial representations might not be the best protection against misappropriation. Therefore, other suggestions have included interpreting *Feist* in a very strict way, limiting it to strictly directories, or moving towards a *sui generis* protection, comparable to the European database right, particularly in the light of the replacement of analogue maps by digital maps and spatial databases.¹⁰¹ In the following sections, we will take a closer look at the protection of spatial databases by copyright and the European *sui generis* database right.

WHAT IS NOW: THE PROTECTION OF DIGITAL MAPS AND SPATIAL DATABASES

If copyright protection for traditional maps was seen as problematic due to the incongruity of the originality requirement and the need for accuracy of the maps, the issue is even more pressing for digitally generated maps and spatial databases. Today, maps are not drawn by cartographers. They are instead stored as digital files in databases, which raises the dual dilemma as to whether these databases of factual information are given protection under copyright law and if the images that are generated from these databases can still be protected as a map from a pictorial point of view.

Spatial databases all have in common, according to Cho, that they should be accurate, contain as little minor variations in definitions and presentations of form and structure as possible, avoid discrepancies between the real world and depictions of it, and have the means to standardize the presentation of facts.¹⁰² The continued search for interoperability and the increased use of standards will severely limit the scope for creativity and originality, both in the presentation of spatial data or in the selection of data. In any case, the level of creativity will be less than for a traditional map, as the purpose will not be to select elements that should be included, but to create a database that is as complete as possible and to include all possible elements.¹⁰³ In a comprehensive database, there may be "nothing left to select."¹⁰⁴

In the switchover from traditional analogue maps to digital maps, a few different situations may arise. Paper maps may be digitized to digital maps or to electronic databases, or electronic databases could be gen-

100. *Id.*

101. See e.g. Karjala, *supra* n. 72.

102. Cho, *supra* n. 23, at 139.

103. *Id.*

104. Karjala, *supra* n. 72.

erated independently from existing maps, and possibly be represented in a pictorial form. According to Karjala, a map that exists in pictorial form and is deemed copyright protected would not lose its protection when the information it portrays is digitised and stored in an electronic database, as the digital fixation would simply constitute a copy of the protected work.¹⁰⁵ However, many spatial databases are collections of data that have never existed in a pictorial form as a whole. As a result, it will be very difficult to protect them as graphical, sculptural or pictorial works, in which case protection as a database will be the only option.

PROTECTION OF DATABASES IN THE EUROPEAN UNION

Copyright

As we have seen above, databases are protected by copyright in the European Union if they constitute the “author’s own intellectual creation by reason of the selection or arrangement of the contents.”¹⁰⁶ As this originality test was harmonized by the 1996 database directive, it is applicable in all Member States of the European Union. It is the same level of originality as is required by the Software Directive and the Terms of Protection Directive.¹⁰⁷ It is a typical European compromise, higher than the British ‘skill and labour’, but lower than the German ‘Überdurchschnittlichkeit.’¹⁰⁸ According to Laddie et al., the “own intellectual creation” entails that there must be something which has the author’s creativity stamped upon it.¹⁰⁹ The originality requirement is only satisfied if the database demonstrates some character embedded in the author’s personality.¹¹⁰

In practice, the level of originality that is required for a database

105. *Id.*

106. Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, OJ L 77, 27 Mar. 1996, 20, <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996L0009:EN:HTML>; Article 3.1 of the database directive. Article 3.1. of Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, OJ L 77, 27 Mar. 1996, 20, <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996L0009:EN:HTML>.

107. Directive 91/250/EEC of the Council of 14 May 1991 on the legal protection of computer programs, OJ L 122, 17 May 1991, 42, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31991L0250:EN:HTML>; Directive 93/98/EEC of 29 October 1993 harmonizing the term of protection of copyright and certain related rights, OJ L 290, 24 November 1993, 9, http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_345/l_34520031231en00900096.pdf.

108. Paul B. Hugenholz, *Implementing the European Database Directive, Intellectual Property and Information Law*, 187 (Kabel and Mom ed., Kluwer, 1998).

109. Laddie et al., *supra* n. 8, at 1068-1069.

110. *See* Devעי, *supra* n. 54.

will depend on the interpretation of the national courts.¹¹¹ For example, the Austrian Supreme Court (Oberste Gerichtshof) held a website containing information on holiday houses in the Caribbean with links to independent websites to be original, because a systematic arrangement was reached by giving a description of the houses per island. The Court applied the classic originality test: whether there was an intellectual creation of the author. The database needed to be individual in style, stand out from everyday, commonplace works. Personal characteristics needed to be visible, especially in the arrangement and the intellectual processing. The Court stated that the arrangement of the individual websites was individual, because it linked information in such a manner that an illusion was created that the dream of a luxurious stay in the Caribbean could come true by renting the offered villas.¹¹²

In 2001, the Belgian Supreme Court (Hof van Cassatie), confirmed that copyright only protected the structure of the database and not the content. It upheld a Court of Appeal decision that awarded protection to a card system with collected and methodically arranged data on over 500 sculptures in Brussels.¹¹³ The district court of Mannheim in Germany found that a CD-ROM containing an anthology of poetry could be protected as the selection and the arrangement of the poems made the list a personal creation of the author. Fourteen poems were chosen from 3,000 anthologies, containing approximately 20,000 poems.¹¹⁴ A 2002 ruling from the Munich Court of Appeal stated that a hit chart of music titles based on sales numbers and radio playing time was not original, as the criteria used were standard criteria for such a compilation and did not show an "own intellectual creation."¹¹⁵ A database only containing names and addresses of farmers and more specific information was not original, according to the Dutch District Court of Zutphen, as it did not express any personal vision of the author.¹¹⁶

A database containing files on pharmaceutical products was considered eligible for copyright by the French Court of Appeal of Paris, because it was not merely a simple compilation of information in the public

111. See IviR, Inst. for Information Law, *The Database Right File*, <http://www.ivir.nl/files/database/index.html> (last updated July 8, 2006) (providing an extensive overview of European case law).

112. C. Villas, *Oberste Gerichtshof*, <http://www.rechtsprobleme.at/doks/urteile/datenbank-website.html> (July 10, 2001).

113. *Art Research & Contact v. B.S., Hof van Cassatie*, Arr. Cass. 2001, no. 5, 872, <http://www.cass.be> (May 11, 2001).

114. Landgericht Mannheim, GRUR-RR 2004 Heft 7, ZUM-RD 2004, 547 (Jan. 23, 2004).

115. Oberlandesgericht Munich, 29 U 4008/02, <http://www.jurpc.de/rechtspr/20030279.htm> (Oct. 10, 2002).

116. Rechtbank Zutphen, http://zoeken.rechtspraak.nl/zoeken/dtluitspraak.asp?searchtype=ljn&ljn=AU7454&u_ljn=AU7454 (last accessed Nov. 30, 2005).

domain, but contained an intellectual contribution in the organization and classification of the files. Every file was created based on official information from the pharmaceutical laboratories; the comments were organized and integrated according to precise editing and classification rules; and a list of keywords was included.¹¹⁷ The same Court decided on the contrary that the publication of obligatory announcements on public procurement, edited according to the rules of the procurement legislation and ordered and paid for by the principals commissioning the contract, did not satisfy the requirement of originality or a personal effort of the author.¹¹⁸ The Court of Appeal of Versailles found originality and a reflection of the author's personality in a database holding a comparative guide on car models because of the combination of tabled objective information on the one page, and arguments on the cars' benefits and drawbacks on the other page.¹¹⁹

The case law seems to indicate that the threshold for protection of databases by copyright is relatively low, and that a limited personal contribution, distinguishing the database from obvious, commonplace arrangements and selections, is sufficient for copyright protection. Spatial databases might hence be protected by copyright in many cases. However, as the arrangement of spatial data in a database will often be based on standard structures needed for interoperability, the main criterion for the arrangement will most likely lie in the geographic location of the data, and the database is only valuable if it is as complete as possible, there is little room for originality or an intellectual creation in the selection or arrangement of the data. As a result, spatial databases are prime candidates for protection by the *sui generis* database right, which protects the investment in a database, and not creativity.

Sui Generis Database Right

The European authorities were aware that, even if the copyright protection for databases was harmonized for all the Member States of the European Union, the originality requirement would remain a major

117. *Société Grup Cosmetics Martin v. SAS OCP Repartitions*, Cour d'appel Paris, Chambre 4, sec. B (Sept. 9, 2005), http://www.lexisnexis.com/fr/droit/results/docview/docview.do?risb=21_T751138038&format=GNBFULL&sort=DECIDEDDATE,D,H,COURT SORT,A,H,THEME,A,H&startDocNo=1&resultsUrlKey=29_T751138041&cisb=22_T751138040&treeMax=false&treeWidth=0&csi=268081&docNo=2.

118. *STE Groupe Moniteur v STE OMP Observatoire des Marchés Publics*, Cour d'appel Paris, Chambre 4 sec. B available at <http://www.lexisnexis.com/fr/droit/results/listview/listview.do?risb=21T751196699&startDocNo=1&sort=null&format=GNBLIST&BCT=G1> ((June 18, 1999).

119. *SARL RL Polk Marketing Systems v SAS Jato Dynamics*, Cour d'appel Versailles, Chambre 12 sec. 2 (Sept. 8 2005), http://www.lexisnexis.com/fr/droit/results/listview/listview.do?risb=21_T751204705&startDocNo=1&sort=null&format=GNBLIST&BCT=G1

impediment for the protection of databases.¹²⁰ Databases that had taken a lot of money and effort to create and maintain, but were not original, would have to rely on unfair competition rules for protection, which differed greatly between the Member States. In addition, stimulating the database producers to produce databases by awarding them a new means of protection against piracy should help the European information industry catch up with the American competitors.

To ensure that non-original databases would have some form of protection and the development of the information market would not be hampered, a new right was created in the database directive: the *sui generis* database right. Its purpose is to protect the investment necessary for the obtaining, verification and presentation of the contents of a database. The development and commercialization of a database demand a considerable investment: 1) data has to be collected; 2) permission has to be obtained for their storage and use in the database; 3) the collected data has to be selected, processed and organized; 4) instruments have to be made to find separate elements of the database; and 5) the contents of the database have to be verified and updated.¹²¹ When the database contains works that are protected by copyright themselves, permission from the rightholders is needed (e.g. for full-text inclusions, translations, printing, downloading, etc.).

The protection of databases by the *sui generis* right is independent from copyright protection of both the database itself and its contents. On the one hand, the database can be protected regardless if its elements are protected by copyright or not. Of course, if some or all of the contents of a database are protected by copyright, the database maker has to ensure that he obtains permission to use those elements from the authors or rightholders involved. On the other hand, the protection of the structure of the database by copyright does not exclude it from eligibility for protection by the *sui generis* right. Both systems are hence independent, yet complementary.

Object of Protection

The concept of a database has already been elaborated upon in a previous section, so we will not address this here once more. However, the criterion that makes a database eligible for protection by the *sui generis* right does deserve our attention. A database can only be protected by the database right when there is a substantial investment in the obtaining, verification or presentation of its contents. "Substantial investment" was not defined in the database directive or in most trans-

120. See e.g. *supra* n. 17.

121. Hendrik Vanhees, *De juridische bescherming van databanken*, Antwerpen, Kluwer, 6 (2001).

posing national legislations. In its recitals, the directive only gives the example of a compilation CD, which would not qualify for protection, because it “does not represent a substantial enough investment to be eligible under the *sui generis* right.”¹²² It was left to the national courts, and ultimately to the European Court of Justice, to determine the scope of the criterion.

Financial, Material or Human Investment

For a database to be eligible for protection there has to be a substantial investment. This investment should concern the obtaining (the searching for, the collection of and the containing of the necessary permissions for the inclusion of protected elements), verification (verification of the accuracy of the collected data and updates), or the presentation of the contents of the database.¹²³ The nature of the investment can be financial, material or human:¹²⁴ “whereas such investment may consist in the deployment of financial resources and/or the expending of time, effort and energy.”¹²⁵ In the end, it may be possible to lead all investments back to a financial one. Nevertheless, the enumeration of all these types of investment by the lawmakers seems to suggest that the concept of investment must be interpreted broadly.¹²⁶ Examples of investments that have been recognized by the courts include the employment of a number of persons to collect and/or type in data, and the acquisition of computer equipment. In some cases a substantial investment has even been recognized on the basis that several hours were needed to build the database.¹²⁷

Investment in the Obtaining, Verification or Presentation of the Contents of the Database

Whether the nature of the investment is financial, material or human, it has to be an investment that is relevant¹²⁸ (i.e. made with a view to the development of the database itself): “a substantial investment in either the obtaining, verification or presentation of the contents.”¹²⁹

122. *Supra* n. 17, at recital 19.

123. Hendrik Vanhees, *Het auteursrecht: recente ontwikkelingen en toepassingen in X* (ed.), *Privaatrecht in de reële en virtuele wereld*, Antwerpen, Kluwer, 331 (2002).

124. Estelle Derclaye, *Database sui generis right: what is a substantial investment? A tentative definition*, 1 *Int. Rev. Intell. Prop. & Comp. L.* 3 (2005).

125. *Supra* n. 17, at recital 40.

126. *Supra* n. 84, at 1.5.

127. *Id.*

128. Björn Coene, *Sui generis bescherming voor databanken*, NJW, no. 98, 118 (2005).

129. *Supra* n. 17, at art. 7.1.

The European Court of Justice considerably raised the bar for an investment to qualify for protection in four joined cases of November 2004.¹³⁰ According to the Court, the investment in the “obtaining, verification or presentation of the contents of a database must be understood, generally, to refer to investment in the creation of that database as such.” This means that the investment cannot concern the creation of data, but only the treatment of the data with a view to arranging them in a database. However, it is not very clear whether this means that *post factum* the investment should be sufficiently specific to the result, or that *ex ante*, the intention should already be there that the result of the investment should be a database.¹³¹

The ECJ adopts the view that any investment in creating data is to be disregarded in determining whether a database maker has made a substantial investment in obtaining, verifying or presenting the contents of the database. It discounts investment in collecting data that is indivisibly linked to its creation.¹³² By making a distinction between “created” and “obtained” data, the ECJ embraces one of the main arguments underlying the so-called spin-off theory.¹³³ This theory states that investments that are made by the maker of a database for another purpose do not count towards the creation of a database with the elements created for that other purpose: “there would appear to be no reason to grant protection to data compilations that are generated quasi ‘automatically’ as by-products of other activities.”¹³⁴ Common examples of this are databases with schedules of sports matches, or listings of television programmes. These data were not created with the purpose of incorporating them in a database, but with the purpose of organising a sport events calendar or a schedule for television programmes. Such information products are “therefore unlikely to attract the protection of the database right because investment in those items is primarily attributable to the creation of the information contained therein rather than on obtaining, presenting or verifying that information.”¹³⁵

According to the ECJ, investment in the obtaining of contents of the database should be understood to “refer to the resources used to seek out existing independent materials and collect them in the database. It does

130. *British Horse Racing Board Ltd. and others v. William Hill Organisation Ltd.*, C-203/02, par. 30 (Nov. 2004) (hereafter “BHB decision”).

131. *Supra* n. 88.

132. Mark J. Davison And Paul.B. Hugenholtz, *Football fixtures, horse races and spin-offs: the ECJ domesticates the database right*, *European Intellectual Property Review*, no.3 (2005).

133. *Id.*

134. Stephen M. Maurer, Paul B. Hugenholtz & Harlan J. Onsrud, *Europe’s database experiment*, *Science* 789-790 (2001).

135. *Id.*

not cover the resources used for the creation of materials which make up the contents of a database."¹³⁶ After all, the purpose of the *sui generis* right is not to promote the creation of materials capable of being collected subsequently in a database, but the establishment of storage and processing systems for existing information.¹³⁷

The expression "investment in the verification of the contents" refers to the "resources used, with a view to ensuring the reliability of the information contained in the database, to monitor the accuracy of the materials collected when the database was created and during its operation. The resources used for verification during the stage of creation of materials which are subsequently collected in a database do not fall within that definition."¹³⁸

Finally, the investment in the presentation of the contents refers to "the resources used to enable the database to process the data (i.e. what is done with a view to the systematic or methodical ordering of the elements included in the database and the organisation of their individual accessibility)."¹³⁹ This includes the making of indexes or thesauri to enable the user to search for and access separate elements of the database.

The interpretation of the ECJ may considerably limit the possibility of protection by the *sui generis* right of spatial databases with e.g. cadastral information, walking trails or tourist information. The basic purpose of cadastral information lies with land administration, the registration of property rights and taxation. A large part of the investment will lie in creating the data on the dimensions of the parcel, the ownership and other rights on the parcel, and the applicable tax regulations. Are these costs that qualify as a substantial investment needed for database protection? Another example may be databases containing walking trails, created by publishers of tourist information. Creating a walking trail is a process that takes considerable time, effort and resources, as the publisher will have to send out an author to map out a trail, find out whether a trail passes on private property, write a description of the trail, add information on sights, catering and accommodation, etc. Collecting these walks in a subsequent database does not require much additional effort, probably entailing that such a database will most likely not be protected by the database right.¹⁴⁰ Yet, where former paper-based information on walking trails is digitized, or where a substantial investment has been made in the user-interface or the presentation

136. *Supra* n. 120, at 42.

137. *Id.* at 31.

138. *Id.* at 42.

139. BHB decision, C-203/02, at par. 35.

140. Of course, the walking trails themselves may be protected by copyright, if they pass the originality test.

of the database, protection may be possible under the interpretation of the Court of Justice.

The mere fact that a database is a spin-off of the original purpose for which the data was created is not a reason in itself to deny protection by the *sui generis* right. “[T]he fact that the creation of a database is linked to the exercise of a principal activity in which the person creating the database is also the creator of the materials contained in the database does not, as such, preclude that person from claiming the protection of the *sui generis* right, provided that he establishes that the obtaining of those materials, their verification or their presentation, in the sense described in paragraphs 31 to 34 of this judgment, required substantial investment in quantitative or qualitative terms, which was independent of the resources used to create those materials.”¹⁴¹ Maybe the search for data is easy and does not require an investment of the maker of the database, as he collected them himself, while the systematic or methodical arrangement, the organization of their accessibility or the verification of their accuracy may take a separate investment eligible for protection by the *sui generis* right.¹⁴²

Qualitatively or Quantitatively Substantial Investment

The investment in the obtaining, verification or presentation of the contents of the database has to be substantial. Again, the directive and national legislations do not provide a criterion for the needed level of substantiality. They only state that the substantiality can be assessed both in a quantitative and a qualitative way.¹⁴³ As for the quantitative investment, it is relatively easy to determine how many financial or material resources a database has taken, and even the investment of time and human effort can be measured (e.g. in man-hours or months); however, the qualitative nature of an investment is harder to determine. If we would consider a qualitative investment as an investment of an intellectual nature, we would encounter two problems. On the one hand, it is difficult to assess whether the intellectual effort or conceptualisation is of such a level that it deserves protection. On the other hand, this intellectual investment bears the great risk of being identified with the originality requirement for copyright protection. In that case, the two systems of protection would be superimposed. Some authors therefore recommend that the term “qualitative” should be interpreted restrictively.¹⁴⁴

141. BHB decision, C-203/02, at par. 35

142. *Id.* at par. 36.

143. *Supra* n. 17, at art. 7.1

144. Derclaye, *supra* n. 124, at 27-28.

Level of Substantiality

The Directive does not offer any criteria to determine whether an investment is high enough or important enough to be considered as substantial (i.e. the required level of substantiality is undetermined). This raises two questions. First, we have to wonder whether substantiality should be appreciated absolutely or relatively. According to Derclaye, no difference should be made between different makers of databases (e.g. between small and large companies). She believes that the criterion should be applied uniformly, and that the size of the undertaking making the database should not matter. This does not mean that only big companies would benefit from the *sui generis* right, since the level of investment does not necessarily have to be high.¹⁴⁵

This raises the second question: should the level of substantiality be high or low? A number of national court cases have tried to answer this question. The High Court of England obviously found that there was a substantial investment for a database that cost four million pounds per annum and the maintenance involved eighty employees and extensive computer hardware and software.¹⁴⁶ In Belgium, there are a small number of cases that discuss the level of investment. In the first case, the court found that there was a substantial investment as the claimant had employed two people on a full-time basis for around ten years, who collected and verified the information, which was enough to justify protection. In the second case the investment was deemed substantial because the buyers of the database had to pay 30.000 Belgian francs (ca. 750 euros) to benefit from the product. The court judgments differ in approach, but it seems that, in general, the courts of the Member States seem to favour a low level of investment and it is rare that a database does not qualify because of the lack of a substantial investment. The limit appears to be constituted by the simple alphabetical classification of data. In most cases, a few hours of work were already sufficient to attract protection.¹⁴⁷

The rulings of the European Court of Justice may have a considerable impact on the protection of spatial databases in the European Union. One can wonder whether this is a reaction to the criticism on the database directive and the database right from opponents claiming that access to information was excessively limited by the database right, and that the protection of databases led to the protection of the underlying

145. *Id.*

146. However, the ECJ found that while the investment may have been substantial, it could not be taken into account, as it did not concern the creation of the database "as such."

147. Derclaye, *supra* n. 124, at 20-24.

facts and hence to monopolies on information.¹⁴⁸ However, the true impact will have to be seen in how the national courts will follow the Court of Justice's interpretation, for instance in determining how big an investment should be for it to be qualified as substantial.

PROTECTION OF DATABASES IN THE UNITED STATES

Copyright

The effect of the *Feist* ruling on traditional paper maps may still be a point of discussion, but this is clearly not the case for spatial databases. As was stated above, *Feist* rejected the "sweat of the brow" doctrine, requiring a minimum level of creativity for the copyright protection of databases.¹⁴⁹ The case concerned annual white and yellow pages telephone directories, assembling names, addresses and telephone numbers of all customers requesting phone service, in an alphabetical order.¹⁵⁰ *Feist* copied the listings of Rural Telephone Company, Inc. and included them in its own directories, which covered a larger area than Rural's. Rural sued for copyright infringement, claiming protection by copyright. The United States Supreme Court, however, decided that protection could not be awarded, as "copyright rewards originality, not effort" and there was nothing original about the Rural directory.¹⁵¹ The court found insufficient creativity in the selection of the directory material and in its coordination and arrangement: "there is nothing remotely creative about arranging names alphabetically in a white pages directory."¹⁵² The directory was considered as a "garden-variety white pages directory", of which the selection of listings "could not be more obvious."¹⁵³

Feist made it clear that copyright only applies to the creative elements of the compilation, and not to the underlying facts. Hence, another party can lift the facts from the database and use them in a separate database, as long as its arrangement is different from the original database.¹⁵⁴

In the years after *Feist*, the lower courts have tried to apply its terms to other cases regarding databases and other sorts of compilations. As *Feist* did not say anything about the level of creativity that is required

148. See Maurer, Hugenholtz, & Onsrud, *supra* n. 134, at 789-790; Paul A. David, *The Digital Technology Boomerang: New Intellectual Property Rights Threaten Global "Open Science,"* available at <http://www-econ.stanford.edu/faculty/workp/swp00016.pdf> (Oct. 12, 2000).

149. *Supra* n. 59.

150. *Id.*

151. *Id.* at 364.

152. *Id.* at 362-363.

153. *Id.* at 362-363.

154. Charles C. Huse, *Database Protection in Theory and Practice: Three Recent Cases*, 20 Berkeley Tech. L.J. 23, 24 (2005).

to obtain copyright protection, the courts mostly had to decide on what made the selection and arrangement of data sufficiently creative. According to Smith Ekstrand, a closer examination of the appellate decisions dealing with the issue of creativity shows uncertainty about what the Supreme Court actually meant.¹⁵⁵

A directory of Chinese-American businesses was deemed original, as the author's decision to exclude certain kinds of information from the directory was considered sufficiently creative, indicating "thought and creativity in the selection of businesses."¹⁵⁶ In *CCC Information Services v. Maclean Hunter Market Reports*, Maclean Hunter's Red Book predicting the value of used cars was seen as a creative compilation, because the components of the compilation were creative selections based on experience and expertise, such as the selection of optional car features or the car models to be included in a price compilation.¹⁵⁷ On the contrary, the creator of horse racing charts containing historical information on winning numbers "exercise[d] neither selectivity in what he report[ed] nor creativity in how he report[ed] it."¹⁵⁸ All publishers of these charts used exactly the same format, and the information in the charts did not vary in the slightest between the publishers. The Court also did not accept copyright in *Matthew Bender & Co., Inc. v. West Publishing Co.*¹⁵⁹ The arrangement of litigant information, addition of counsel names, procedural developments and editing, and the addition of citations in case law texts were deemed not sufficiently creative. The Court stated that "[c]reativity in selection and arrangement, therefore, is a function of (i) the total number of options available, (ii) external factors that limit the viability of certain options and render others non-creative and (iii) prior uses that render certain selections 'garden variety'.¹⁶⁰ The Seventh Circuit accepted copyright protection in *Assessment Techs. of Wisc., LLC v. WIREdata, Inc.* for a database consisting of 456 fields grouped into 34 separate tables for property-tax data.¹⁶¹ According to the court, the unique and complex organization of that database showed at least minimal creativity. In *Nautical Solutions Mktg., Inc. v. Boats.com*, a database holding descriptions of yachts for sale was not held eligible for copyright protection, because the descriptions used industry-standard

155. Victoria Smith Ekstrand, *Drawing Swords After Feist: Efforts to Legislate the Database Pirate*, 7 *Commun. L. & Policy* 317, 328 (2002).

156. *Key Publications, Inc. v. Chinatown Today Publ. Enterprises, Inc.*, 945 F.2d 509 (2d Cir. 1991).

157. *CCC Info. Services v. Maclean Hunter Mkt. Reports*, 44 F.3d 61 (2d Cir. 1994).

158. *Victor Lalli Enterprises, Inc. v. Big Red Apple, Inc.*, 936 F.2d 671 (2d Cir. 1991).

159. *Matthew Bender & Co. Inc. v. West Publ. Co.*, 158 F.3d 674 (2d Cir. 1998).

160. *Id.* at 682-683.

161. *Assessment Techs. of Wis., LLC v. WIREdata, Inc.*, 350 F.3d 640, 643 (7th Cir. 2003); For a more elaborated report on this case, see Huse, *supra* n. 154, at 36-37.

headings such as accommodations, sails and rigging, and galley.¹⁶²

According to Smith Ekstrand, while there is evidence to suggest confusion about protections for compilations after *Feist*, the limited amount of case law shows that there is no significant problem in the application of the *Feist* approach.¹⁶³ However, some believe that the United States should follow in the footsteps of the European Union and create a new form of protection for databases.

Proposals for Protection of Databases by a Database Right

Since the introduction of the European database directive in 1996, a number of bills have been introduced in the U.S. Congress, some of which were based on the database directive, while others were based more on misappropriation and unfair competition principles.¹⁶⁴ The first attempt was introduced in 1996 as the Database Investment and Intellectual Property Antipiracy Act.¹⁶⁵ The bill proposed to prohibit any extraction, use or re-use of a substantial portion of the database for a term of twenty-five years. The bill did not survive the stiff opposition from education, library and research interests.¹⁶⁶ The next year, a new bill was introduced for the Collection of Information Antipiracy Act¹⁶⁷, which was in many ways comparable to the previous bill and again met criticism of adversely affecting the public's access to information contained in databases. The bill reappeared under the same name and in much the same form in 1998, and was yet again refused.¹⁶⁸

The next attempt was made in 1999 under an alternative approach. The Consumer and Investor Access to Information Act provided protection to owners of compilations from commercial misappropriation by competitors.¹⁶⁹ This bill was only intended towards potential competitors and not to the end-users, and only prohibited certain conduct that could be qualified as unfair business practices. The next version of database protection legislation dates from 2003.¹⁷⁰ The Database and Collections of Information Misappropriation Act prohibited the "making available in commerce to others a quantitatively substantial part of the

162. *Nautical Solutions Mktg., Inc. v. Boats.com*, 2004 U.S. Dist. LEXIS 6304 (M.D. Fla. Apr. 1, 2004).

163. Ekstrand, *supra* n. 155, at 334.

164. Samuel E. Trosow, *Sui Generis Database Legislation: A Critical Analysis*, 7 Yale J. L. & Tech. 94 (2004-2005).

165. H.R. 3531, 104th Cong., 2d Sess. (1996) (this bill was introduced by Rep. Carlos Moorhead, chairman of the House Subcommittee on Courts and Intellectual Property).

166. Trosow, *supra* n. 164.

167. H.R. 2652, 105th Cong. §1 (1997) (Coble).

168. H.R. 354, 106th Cong. (1998).

169. H.R. 1858, 106th Cong. (1999).

170. H.R. 3261, 108th Cong. (2003).

information in a database generated, gathered, or maintained by another person, knowing that such making available in commerce is without authorization of that person,” under a number of conditions. According to Trosow, the differences with the previous bills were minimal and any need that might exist for database legislation was still not fulfilled. A last alternative bill was introduced in 2004, but also never reached completion.¹⁷¹

Whether or not database legislation should be introduced in the United States, still remains under discussion. Proponents keep insisting that unfair competition and misappropriation rules do not suffice to protect databases against unauthorized copying, while opponents believe on the one hand that the introduction of a database right would unreasonably limit access to information,¹⁷² or on the other hand, that the current protection under *Feist* has not caused any major problems so far, or at least not enough problems to warrant legislation.¹⁷³

CONCLUSION

The protection of spatial databases by intellectual property rights seems to be a challenge on a number of levels. On the one hand, spatial data – and their collection in spatial databases – are very likely not original enough to warrant copyright protection, because they are meant to be a representation of reality, depicting this reality as accurately as possible, leaving no room for any personal touch or creativity. However, their creation is very expensive and spatial data producers are obviously looking for a way to protect their data from unauthorized copying.

In the European Union, a solution might be found in the protection of databases by the *sui generis* database right, but the curtailing of this right by the European Court of Justice, may also have jeopardized the creation of spatial data, as the biggest investment of manpower and financial resources will in most cases concern the creation of the data for other purposes (e.g. land administration, environment, town planning, etc.), and not the “obtaining, verification or presentation” of the contents of a database, as interpreted by the Court of Justice.

In the U.S., there is no such thing as a database right, even though the idea has been on the legislator’s table more than once. Following *Feist*, spatial databases can only be protected by copyright if they show a

171. H.R. 3872, 108th Cong. (2004).

172. Amar A. Hasan, *Sweating in Europe: The European Database Directive*, 9 Comp. L. Rev. & Tech. J. 479 (2005); YiJun Tian, *Reform of Existing Database Legislation and Future Database Legislation Strategies: Towards a Better Balance in the Database Law*, 31 Rutgers Computer & Tech. L. J. 347 (2005).

173. See Trosow, *supra* n. 164; Ekstrand, *supra* n. 155; Maurer, Hugenholtz, & Onsrud, *supra* n. 134, at 789-790; David, *supra* n. 148.

minimum level of creativity. Investment or efforts, no matter how high, are not sufficient to warrant copyright protection.

However, all is not lost for spatial databases in either legal regime. The European database right requires a substantial investment in the obtaining, verification or presentation of the contents of the database. From the examples of some judgments of the national courts, we can see that this substantial investment does not have to be very high, which puts the requirement immediately into perspective. On the other hand, the originality requirement for copyright protection in the U.S. requires a minimum level of creativity, but as we can gather from the case law that was mentioned above, this minimum level is also fairly low, only excluding very commonplace compilations, such as purely alphabetical listings. As a result, while spatial data themselves may not be protected, due to their factual nature, spatial databases should be able to count on a fair level of protection, balancing between the need for data producers to protect their investment and the access of the public to the underlying facts.

