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Visser, D.J.G.; Dunk, F.G. von der; Brus, M.M.T.A.

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Commercial Utilisation from a European Legal Perspective

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A Database from Space: The Legal Protection of Data Created or Collected in Outer Space under the 1996 European Database Directive

D.J.G. Visser[1]

The discovery of a new solar system requires a substantial investment in a telescope or a journey into space. It results, among other things, in the obtaining of a collection of stars with their given names. Is such a collection a protected database?[2]

1. Introduction

For the commercial utilisation of the International Space Station (ISS) it is important to establish whether and to what extend activities in outer space can produce results which are protected by some kind of intellectual property.

[1] Prof. Dr. D.J.G. Visser is Professor of Intellectual Property Law at Leiden University (d.j.g.visser@law.leidenuniv.nl) and attorney-at-law in Amsterdam.

[2] Question asked by the PvdA (Dutch Labour party) during the discussion of the implementation of the European Database Directive into Dutch Law. The question was answered in the negative by the Dutch Minister of Justice. Second Chamber of Parliament (Lower House), 1998–1999, 26 108, nr. 6, p. 5.

Different kinds of intellectual property protection that do or might a apply to activities in outer space are discussed in the contribution of Balsano and Wheeler, elsewhere in this publication.

This contribution focuses on one particular kind of protection that might apply to data created, discovered, collected and/or treated in outer space, for instance on board the International Space Station. As is already mentioned by Balsano and Wheeler, such data are traditionally *not* protected by copyright, mainly because they do not satisfy the originality criterion: there is no 'creative' or 'subjective' human intervention which is required for copyright protection.

The legal protection of raw, corrected and treated or analysed data resulting from activities in outer space was the subject of a study, conducted jointly by ESA and the European Commission in 1993.[3] In this study much attention was paid to the European Database Directive which was by that time still a proposal.

2. The European Database Directive

In 1996 the European Database Directive came into force which introduced a new pseudo-copyright in databases.[4] This Directive was implemented in the Netherlands in 1999, in the Databases (Legal Protection) Act [*Databankenwet*] of July 8, 1999,[5] in Germany in the Information and Communication Services Act [*Informations- und Kommunikationsdienste-Gesetz – IuKDG*] of 22 July 1997,[6] in France in the *Code de la Propriété Intellectuelle* on 1 July 1998[7] and in the UK in 1997, in *The Copyright and Rights in Databases Regulations 1997*.[8]

The most important paragraph of the Database Directive is Article 7:

> Member States shall provide for a right for the maker of a database which shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database.

The definition of this new right contains quite a few vague notions. The requirement for protection is: a *qualitatively and/or quantitatively substantial* investment. The criterion for infringement is (extraction and/or re-utilization of the whole or of) a *qualitatively and/or quantitatively substantial* part of the contents of that database.

[3] Ph. Gaudrat – General Report-EEC DG XII Study – Protection of Remote Sensing Data, 1993.

[4] Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, Official Journal No. L 77 of 27 March 1996, p. 20.

[5] Stb. 1999, 303.

[6] BGB 1997 I p. 1870.

[7] J.O. 151, 2 July 1998, p. 10075.

[8] SI 1997 No. 3032.

3. The ECJ decisions of 9 November 2004

On 9 November 2004 the European Court of Justice rendered its first decisions on a number of key notions in the database right. One of the most important conclusions that can be drawn from these decisions is that the database right only protects substantial investment in the creation of *databases as such*.[9] The database right does not protect the investment in the creation of *the materials contained in* a database from the definition of obtaining.

On of the cases decided by the ECJ on November 9, 2004 concerned a database of the British Horse Racing Board containing lists of horses running in the races. The ECJ ruled:

> [The] investment in the selection, for the purpose of organising horse racing, of the horses admitted to run in the race concerned relates to the creation of the data which make up the lists for those races which appear in the BHB database. It does not constitute investment in obtaining the contents of the database. It cannot, therefore, be taken into account in assessing whether the investment in the creation of the database was substantial. [para. 38]

This decision by the ECJ has met with mixed reactions, approval and criticism. It seems worthwhile to study the consequences of this decision for the protectability of raw, corrected and treated or analysed data resulting from activities in outer space. For more background reading as to the origins of the database protection and the ECJ-decisions reference is made to earlier publications.[10] The protectability of raw, corrected and treated or analysed data resulting from activities in

[9] "The expression '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" (para. 30).

[10] M.J. Davison & P.B. Hugenholtz, Football fixtures, horse races and spin-offs: the ECJ domesticates the database right, *EIPR* (2005/3), 113, P. Bernt Hugenholtz, Program Schedules, Event Data and Telephone Subscriber Listings under the Database Directive – The 'Spin-Off' Doctrine in the Netherlands and elsewhere in Europe, paper presented at Eleventh Annual Conference on International IP Law & Policy, Fordham University School of Law, New York, 14–25 April 2003, available at http://www.ivir.nl/publications/hugenholtz/spinofffordham.html; D.J.G. Visser, The database right and the spin-off theory, in *Ecommerce Law. National and transnational topics and perspectives* (H. Snijders & S. Weatherill, eds.) (2003), 105–10; E. Derclaye, Databases sui generis right: should we adopt the spin-off theory?, *EIPR* (2004), 26(9), 402–13.

outer space, including research onboard the ESA-module, is obviously very relevant for the possible commercialization of those data.

4. Raw data

Is a collection of raw data a database within the meaning of the Database Directive?" According to Article 1(2) of the of this Directive, 'database' shall mean a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means. In its decision in fixtures/OPAP the ECJ (C-444/02) ruled:

> The term database as defined in Article 1(2) [of the Directive] refers to any collection of works, data or other materials, *separable from one another without the value of their contents being affected*, including a method or system of some sort for the retrieval of each of its constituent materials (emphasis added).

On the basis of this definition it is likely that raw data that is collected by some kind of automated recording or measuring apparatus and derive their essential value from the interrelation between the data *do not* constitute a database within the meaning of the Database Directive. In cases where the raw data (also) have a considerable value if taken separately, it can be argued that raw data that is collected by some kind of automated recording or measuring apparatus *do* constitute a database within the meaning of the Database Directive.

The second hurdle the be taken is that the raw data should be arranged in a systematic or methodical way or should be searchable through a search engine. If the data are stored chronologically, geographically or in some other systematic way, which will probably always be the case if they have been collected by some kind of automated recording or measuring apparatus, this condition will probably always be met without a problem.

5. Raw data (found in nature) 'as such'

In recital 46 of the Database Directive it is stated that the new database right "should not give rise to the creation of a new right in the works, data or materials themselves".[11] As Bovenberg[12] points out, this recital might be construed as support for the statement of Gaster[13] that data "discovered nature" are as such not protected under the database right. However, Gaster himself does not give any arguments for his statement. His statement seems to be primarily a reaction to a position paper of the International Council of Scientific Unions.[14]

Even if raw data 'as such' are not protected under the database right, which is probably true, the essential question is when data are no longer data 'as such', but a database. As Bovenberg rightly points out,[15] it would be ad odds with both the text and explicit objectives of the database directive to suggest (whether or not on the basis of recital 46 or the statement made by Gaster) that collections of data "discovered in nature" could not amount to a protected database.

The question is what kind of activity transforms raw data (found in nature) 'as such' into a database protected by the database right.

"Discovered" or "found" in nature suggests that raw data fall from trees like ripe apples and that the collection thereof should therefore not deserve any protection. It is obvious that the kind of discovering or finding data that leads to the compilation of databases on board the International Space Station requires a lot more and therefore does deserve some kind of protection in order to recoup some of the investment. This however obviously is not a strictly legal, but a public policy argument that will be dealt with later on in this contribution.

6. Creating data or obtaining a database?

If a collection of recorded or measured raw data can be regarded as a database within the meaning of Article 1(2) of the Database Directive, the next question is whether the 'recording' or 'measuring' of the data can be qualified as "obtaining, verification or presentation of the contents" of the database as such, or that the 'recording' or 'measuring' of the data should be qualified as the "creation" of the data concerned. The distinction seems to be essential after the decisions by the ECJ mentioned above. If the 'recording' or 'measuring' of the data should be labelled as creation of the data, then no database right exists in the raw data collection. If, however the 'recording' or 'measuring' of the data should be labelled as obtaining a database, then the database containing the raw data can be protected.

"[I]s the derivation of data from naturally occurring phenomena an act of creation or obtaining?". Davison and Hugenholtz seem to be of the opinion that it is an act of creation:[16]

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[11] Recital 46: "Whereas the existence of a right to prevent the unauthorized extraction and/or re-utilization of the whole or a substantial part of works, data or materials from a database should not give rise to the creation of a new right in the works, data or materials themselves".

[12] J.A. Bovenberg, Should Genomics Companies set up Database in Europe? The EU Database Protection Directive revisited. *EIPR* (2001), 364.

[13] J.L. Gaster, *Der Rechtsschutz von Databanken* (1999), 37.

[14] A paper on access to databases submitted by the ICSU at the WIPO Information Meeting on Database Protection held in Geneva, September 17–19, 1997. http://www.codata.org/codata/data_access/WIPO.doc.

[15] Bovenberg, *supra*, note 12, 361.

[16] Davison & Hugenholtz, *supra*, note 10, 113.

> One example may be the recording of meteorological data such as the daily maximum temperature in a particular location. Are those data created or obtained? Similarly, do scientists obtain the genetic sequences of living organisms or do they create them? The strict approach taken by the ECJ in these four cases would suggest that the answer is that such data are created. Meteorological data and genetic sequences are records and representations of natural phenomena, not the phenomena themselves, and it would be difficult for scientists to argue that they have simply collected the data as opposed to creating them.

Davison and Hugenholtz are right in that meteorological data (and astronomical and other scientific data) are records and representations of natural phenomena, not the phenomena themselves. In that sense the data are created, but on the other hand they are indeed representations of *pre-existing* natural phenomena. It could therefore also be argued that scientists do indeed collect information regarding natural phenomena, although they do (necessarily) at the same time 'create' data to represent the information they have collected regarding the natural phenomena.

An essential difference between the 'obtaining' of data regarding horse races and football matches on the one hand and meteorological, astronomical and other scientific data on the other is the following. Organisers of these races and the matches do not only create the data, but they also create the facts (in this case: events) these data represent, whereas scientists do (necessarily) 'create' data in order to represent the natural phenomena that already exist and which are obviously not created by the scientists.

Therefore, it can very well be argued that the collection of data regarding meteorological, astronomical and other scientific phenomena does not amount to the 'creation of data' as meant by the ECJ in its decisions regarding horse races and football matches.

Consequently, the collection of raw data regarding meteorological, astronomical and other scientific phenomena might still result in a protected database.

7. Substantial investment

As the research on board of the International Space Station as any other research in space costs enormous amounts of money, there is little doubt that the collection of data onboard the ISS requires a substantial investment (both quantitatively and qualitatively). It is also clear that this substantial investment is indeed (for large part) directed at and meant for the collection of data and the obtaining of databases.

The opinion of the Dutch Ministry of Justice that a list in which the newly discovered stars are mentioned with their names cannot be protected as a database "the investment is concerned with the research through a telescope or

space journey"[17] and not with the obtaining of a database seems untenable. A space journey is obviously not conducted just for the fun of it; it is conducted to acquire knowledge, including the obtaining of scientific data and databases.

8. Corrected data

As soon as raw data are checked and corrected through human intervention some additional quantitative of qualitative investment is added, which might often be substantial. In the William Hill/BHB-case the ECJ ruled that verification in the phase of the creation of the data themselves 'does not count' as far as the establishment a the substantial investment is concerned:

> The expression 'investment in (...) the (...) verification (...) of the contents' of a database in Article 7(1) of the directive must be understood to refer to the resources used, with a view to ensuring the reliability of the information contained in that 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.

As far as raw data regarding meteorological, astronomical and other scientific phenomena is concerned it could be argued that the correction of mistakes made in the course of the measuring of a single fact is concerned is to be considered as verification in the course of the creation of data. Other corrections, for instance of mistakes that occur in the process of collecting the data or processing them from one format to another, arguably take place in the phase of the obtaining of the database and are relevant for the database protection.

9. Treated or analysed data

Data which have been treated or analysed, can form a database in which a substantial investment has taken place in the obtaining, the verification and the presentation. If the analysis creative human intervention and subjective decisions the database can also be protected under copyright.

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[17] Second Chamber of Parliament (Lower House), 1998–1999, 26 108, nr. 6. p. 5.

10. Public policy arguments

Recital 7 of the Database Directive reads as follows:

> Whereas the making of databases requires the investment of considerable human, technical and financial resources while such databases can be copied or accessed at a fraction of the cost needed to design them independently;

It is clear that research in space, including the making of databases with scientific information on board a space station requires the investment of enormous human, technical and financial resources, while such databases can be copied or accessed just as easily as databases created on earth.

It has been suggested that the ECJ's decision to limit the scope of the database right excluding the investment in the creation of the material, might well in part be due to the specific circumstances of the cases it had to decide. The protection of databases produced by the organisers of horse racers and football leagues could be considered as not so very important form the point of view the general interest of society. It was in fact all about protecting sports betting data for an industry that probably will be able to make a lot of money any way. Maybe this is to cynical an explanation, but it can not be ruled out that the facts of the case seriously influenced the Court in deciding that these kinds of databases were not to be protected under the new database right.

Therefore, it is quite possible that the ECJ did not intend to exclude from protection databases in which the line between the creation of the material and the obtaining of the database could be drawn in the same way as in these cases regarding sports betting data, but could also be drawn quite differently. As Derclaye points out, there is a public policy argument to be made, (especially in the case of databases which are considerably more important to society then collections of sports betting data):

> Governments do not have sufficient resources to make all scientific discoveries. This might have been the case in the past but not anymore. The aim of the Directive is to encourage the development of databases. If the state does not act and companies know that the results of their endeavours will not be protected, they will either not invest or will keep their (unpatentable) results for themselves if they can (as trade secrets). Thus, when one is confronted with the presentation of naturally occurring elements (such as the human genome) which require considerable sums, not easily available, and the data are vital to society, the enterprise making the investment should on the one hand be rewarded for its endeavours through protection but, on the other, should not prevent mankind form benefiting from.[18]

[18] E. Derclaye, *supra*, note 10, 411.

Derclaye refers to this as a balancing act. It is clear that this balancing act also is needed for databases created in space, for instance onboard the ISS. This is of course also the same balancing act that applies to al forms of intellectual property that monopolise scientific information on earth and especially in space, in the light of the concept of the common heritage of all mankind of the Outer Space Treaty.[19]

However, in order to do a proper balancing act regarding databases containing scientific information collected in space it is necessary not to deprived these kinds of databases form protection from the start. Its seems desirable that these kinds of databases are indeed protected by the database right. At the same time limitations to this right, as contained in Article 9 of the Database directive[20] and as prescribed by competition law, as well as a limitation in time to 15 years protection, do apply.

11. Summary and conclusion

Collections of scientific data collected by some kind of automated recording or measuring apparatus can derive their essential value merely from the interrelation between the data.

In such cases the database in which these data are contained arguably does not meet the requirement that the data should be *separable from one another without the value of their contents being affected.* These collections can therefore arguably not be considered databases within the meaning of the Database Directive.

In cases where these scientific data (also) have a considerable value if taken separately, it can be argued that these data collected by some kind of automated recording or measuring apparatus *do* constitute a database within the meaning of the Database Directive.

The obtaining of meteorological, astronomical and other scientific data regarding existing natural phenomena can arguably not be regarded as the creation of

[19] See also the comments of Balsano and Wheeler on the need to balance public and private interests in their contribution elsewhere in this publication.

[20] Art. 9, Database Directive: "Member States may stipulate that lawful users of a database which is made available to the public in whatever manner may, without the authorization of its maker, extract or re-utilize a substantial part of its contents:

(a) in the case of extraction for private purposes of the contents of a non-electronic database;

(b) in the case of extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved;

(c) in the case of extraction and/or re-utilization for the purposes of public security or an administrative or judicial procedure.

material comparable to the obtaining of data regarding horse races and football matches by the organisers of these races and matches. Therefore, the decision by the ECJ in the BHB/William Hill and fixtures cases will arguably not affect the protectability of databases containing meteorological, astronomical and other scientific data. This conclusion seems to be in conformity with public policy arguments that scientific databases which can not be created without private investment, require protection in order to give an incentive to produce these databases. Which is indeed the very basis of the existence of intellectual property protection.

Although the database right is fully harmonised on a European level, and no divergences or digressions on a national level can exist, further clarification is obviously required. On an international level the existence of a European database right without such a right existing in for instance the US may give rise to complications and the need for further global harmonisation.