

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

**Datasheet for the decision
of 17 July 2007**

Case Number: T 1606/06 - 3.5.03

Application Number: 02000568.2

Publication Number: 1207704

IPC: H04Q 3/00

Language of the proceedings: EN

Title of invention:

DNS-based determination of a telephone number for contacting a target entity

Patentee:

Hewlett-Packard Company

Opponent:

Siemens AG

Headword:

DNS determination of telephone number/HEWLETT-PACKARD

Relevant legal provisions:

EPC Art. 52(1), 54, 56

Keyword:

"Novelty (yes)"
"Inventive step (yes)"
"Acceleration request granted"

Decisions cited:

-

Catchword:

-



Case Number: T 1606/06 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 17 July 2007

Appellant: Siemens AG
(Opponent) Postfach 22 16 34
D-80506 München (DE)

Representative: -

Respondent: Hewlett-Packard Company
(Patent Proprietor) 3000 Hanover Street
Palo Alto
CA 94304 (US)

Representative: Lippich, Wolfgang
Samson & Partner
Patentanwälte
Widenmayerstrasse 5
D-80538 München (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 25 July 2006
rejecting the opposition filed against European
patent No. 1207704 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: D. H. Rees
R. Moufang

Summary of Facts and Submissions

I. This is an appeal against the decision of the opposition division to reject the opposition by the sole opponent against European Patent No. 1 207 704.

II. The independent claims as granted read as follows:

"1. A method of determining a telephone number ('B-telnb') for contacting a target entity (B) over a telephone system, the target entity (B) being identified by a number string ('B-Webtel'); said method comprising the steps of:

a) - storing in a domain-name-system, DNS, type of distributed database system, records each associated with a corresponding domain name and each holding a telephone number ('B-telnb') of an entity (B) associated with the domain name, each said domain name being related to a respective number string ('B-Webtel') from which it can be derived by a process including parsing at least a substantial portion of the number string ('B-Webtel') into at least a part of said domain name;

b) - applying said process to the said number string ('B-Webtel') identifying the target entity (B) whereby to form the related domain name; and

c) - supplying the domain name formed in step b) to the DNS-type distributed database to retrieve the telephone number ('B-telnb') held in the corresponding said record."

"5. A computer program product intended for use with a computing resource (46;53) having connectivity to a

computer network (50), to determine a telephone number ('B-telnb') for contacting a target entity (B); the computer program product being arranged to provide the computing resource, when executing the computer program, with:

- first means (46) for forming, from a number string ('B-Webtel') identifying the target entity (B), a domain name by a process (120) including parsing at least a substantial portion of the number string into at least a part of said domain name;
- second means (46) operative to use the network connectivity of the computing resource to supply said domain name to a domain-name-system, DNS, type of database system and to receive back a resource record including a telephone number ('B-telnb'); and
- third means (70,71) operative to make available the telephone number ('B-telnb') received back by the second means, to functionality [sic] for setting up a telephone connection to the target entity (B)."

"7. A server of a domain-name-system, DNS, type of distributed database system, the server holding at least one resource record (RR) for providing a mapping from a domain name associated with the record to a telephone number ('B-telnb') that is held in the record and is usable for contacting a target entity over a telephone system; at least a substantial portion of the domain name being in the form of a number string ('B-Webtel'), identifying the target entity (B), that has been parsed into plural domain-name labels to be supplied to the DNS-type distributed database system for retrieval of the telephone number held in the corresponding record."

- III. The opponent (appellant) had requested the revocation of the patent on the ground that the claimed subject-matter was not novel or did not involve an inventive step (Articles 100(a), 52, 54 and 56 EPC).
- IV. In oral proceedings held on 5 July 2006 the opposition division decided to reject the opposition. The written reasons were dispatched on 25 July 2006.
- V. The following documents discussed in the opposition procedure remain relevant to the present decision:
- E04: IETF (Internet Engineering Task Force) RFC (Request for Comments) 1034, "Domain Names - Concepts and Facilities", 1987
- E05: IETF RFC 1035, "Domain Names - Implementation and Specification", 1987
- E06: IETF RFC 1101, "DNS Encoding of Network Names and Other Types", 1989
- E07: IETF RFC 1183, "New DNS RR Definitions", 1990
- E08: IETF RFC 1528, "Principles of Operation for the TPC.INT Subdomain: Remote Printing -- Technical Procedures", 1993
- E09: IETF RFC 1529, "Principles of Operation for the TPC.INT Subdomain: Remote Printing -- Administrative Policies", 1993

E10: IETF RFC 1530, "Principles of Operation for the TPC.INT Subdomain: General Principles and Policy", 1993

The following document was submitted by the respondent in the appeal procedure. It is a more comprehensive selection of pages of a book than that originally submitted by the appellant as E03 in the opposition procedure.

PR04:J. Biala, "Mobilfunk und Intelligente Netze," 2. neu bearbeitete Auflage, Verlag Vieweg, 1995, ISBN 3-528-15302-4, table of contents, pages 37, 39 to 45, 49 to 51, 53, 68 to 71, 82, 83 and 341 and index.

VI. Notice of appeal was filed and the appropriate fee paid on 13 September 2006. The statement of grounds of appeal was submitted on 4 December 2006. On the same day the appellant made a request for accelerated processing. In response to a communication from the board the appellant submitted reasons for the request together with various supporting documents.

VII. In a response the respondent (proprietor) gave reasons for rejecting the opposition. It was stated that, "The respondent does not formally oppose the expediting request." Nonetheless it was argued that the request was unfounded.

VIII. The following is a summary of the appellant's arguments relating to novelty and inventive step, as presented in the statement of grounds of appeal.

- (a) The subject of the patent is telephone number translation (starting from a "number string"), which was known *per se* at the priority date from E03. From E03 it was also known that the telephone number sought for could be held in a distributed database.
- (b) The subject of the invention is that the distributed database should be constructed as a DNS-type database in which the telephone numbers are held. DNS-type databases are characterised by the fact that the "key" takes the form of a domain name, so that this also has to be the case for the database of the invention. The domain names are generated from the number strings by parsing at least part of the string.
- (c) The invention is about the choice of a database and therefore is a computer-implemented invention (CII), which requires special considerations.
- (d) The decision did not deal properly with the "skilled person". It should also have taken a position with respect to the contemporary discussion of the patentability of CIIs with respect to inventive step ("trivial patents").
- (e) As to the skilled person, the first issue is his knowledge, which depends on his field. This is determined by the problem which is solved by the invention. The skilled person may also seek the help of a person skilled in another field. The qualification which can be expected of the skilled person depends on the workers who generally

concern themselves with problems of the sort solved by the invention. As to the skilled person's creativity one can say that he can be trusted to attempt to improve solutions known to him as a skilled person, and that he will take up proposals known from the state of the art and adapt them to his needs.

- (f) With respect to the closest prior art which is E03 the objective problem to be solved is to find an alternative distributed database, with the help of which number strings can be transformed to telephone numbers. The skilled person for this problem is a graduate computer scientist, and he can be expected to get the help of a telecommunications graduate. Network technology - in particular that of telecommunications networks and the Internet - had long been part of university education and therefore a high average standard of knowledge could be expected.
- (g) (1) Translation of telephone numbers and (2) distributed databases of the DNS type were both part of the average knowledge of the skilled person at the priority date as can be seen (by reference to the grounds of opposition) from E03 and E04 to E10 (various citations). With respect to (1), E03 gives a clear indication of the increasing use for Intelligent Network services of distributed databases of whatever sort (i.e. also "DNS type") and that data processing is becoming ever more important in telecommunications, see the glossary entries for "Datenbank" and "Datenverarbeitung" on page 341 of E03. As to (2)

there was an absolutely clear statement that DNS databases could be used to store arbitrary data types, and there was even a record format already defined for storing telephone numbers, see E06 and E07.

- (h) With this background the only basis for patentability of the invention is the supposition that for the computer scientist skilled person it would not have been obvious to even consider a DNS-type distributed database. However the skilled person would have recognised the need to call on the help of the person skilled in the field of the patent, namely a telecommunications scientist. At least from this person the first skilled person would have been made aware of the discussions about the integration of telephone systems and the Internet with help of the DNS, which were already long-running at the priority date.
- (i) Once this minimal hurdle is overcome, it would be a matter of course for the computer scientist to familiarise himself with the state of the discussions. So he would learn not only what was said in E06 and E07, already cited, but also the concrete example in E08 which shows how one goes from a number string to the domain name required for DNS queries.
- (j) It is irrelevant for the question of obviousness whether the skilled person actually chose this database. The opponent has already pointed out that among other reasons this was not done because

the control by the USA of the DNS made it politically unacceptable.

- (k) It is also irrelevant whether DNS might be considered inappropriate for the task because it might be "too slow". This is a question of the progress made by an invention, and its advantages. These however are not criteria for an inventive step; at the choice of the legislator the only criterion is obviousness.
- (l) It follows, if this line of argument is employed strictly, that the claimed subject-matter is not new, although the appellant is aware that this does not correspond to the practice of the EPO, according to which there is only a lack of novelty if the invention is fully disclosed by a single written piece of prior art.
- (m) At any rate an inventive step is lacking. In the light of the discussion of CIIs in particular and the patent system in general, the tendency of the EPO to restrict the skilled person's knowledge and abilities to what is published in writing, in this case the lack of a written indication of DNS type databases in E03, should be countered by giving a higher importance to the appropriate evaluation of the skilled person.

IX. In the light of the decision arrived at by the board it is not necessary to summarise the arguments put forward by the respondent. Those that are relevant to the decision appear in the reasoning below.

- X. The appellant requests that the decision under appeal be set aside. The board infers that the appellant intends to maintain its request in opposition that the patent be revoked completely. The appellant has not requested oral proceedings.

The respondent requests that the appeal be rejected and makes a conditional request for oral proceedings.

Reasons for the Decision

1. *The request for accelerated processing*

- 1.1 The appellant stated that in May 2004 the ITU-T Study Group 2 had been presented with a paper which asserted that a licence for the family of International Patent Application PCT/GB96/03045 (evidently what was meant was PCT/GB96/03054) could be necessary for the use of a technology which the paper proposed, said licence being offered under "R&ND" (Reasonable and Non-Discriminatory) conditions. The patent in suit is a member of that family. It was alleged that the members of the study group had continued their work in the belief that the patent or patents in question would be found not to be valid. The decision of the opposition division to uphold the patent therefore threatened to cause a delay in the work of the study group. It was therefore in the general interest to resolve the appeal as quickly as possible.

- 1.2 While not formally opposing the request for accelerated prosecution of the appeal, the respondent argued that the grounds put forward by the appellant were not well-

founded. The document submitted by the appellant to show that the members of the study group did not consider the patent to be valid did not actually do so. Moreover patents covering elements of standards were commonplace and the ITU-T did not disapprove of such patents. The R&ND licence system was designed to deal with this situation fairly. It would be contrary to the ITU's patent policy and code of practice for the members of the study group to judge whether the patent was valid and base its decision to proceed or not on that judgement. Moreover the patent in suit was of only peripheral relevance to the standard. If the study group had suspended its work this had to do with political issues concerning the control of the proposed top-level domain.

- 1.3 The conditions under which appeal processing may be accelerated are laid out in the "Notice from the Vice-President Directorate-General 3 dated 19 May 1998 concerning accelerated processing before the boards of appeal," published in the Official Journal EPO, July 1998 on pages 362 and 363. Since according to this notice reasons have to be given, it is necessary for the board to assess whether the reasons given in this specific case suffice.
- 1.4 It is a matter of common knowledge that members of standardisation study groups are often employed by manufacturers in the fields of the proposed standards and that they are sent to take part because of the benefits which accrue to manufacturers when there are stable and popular standards to work to. It follows however that the members also represent potential competitors in the resulting market. Hence the question

of who owns what intellectual property in the area is clearly of interest to such a study group (it is normally a condition of membership in such a group that relevant intellectual property must be declared) and it is very plausible that the options chosen for the standard may be affected. This will still be the case even if there is an R&ND licence policy in effect. Thus even if the appellant has perhaps rather over-dramatised the situation, the board considers it very plausible that there is a legitimate interest in accelerated processing, analogous to one of the examples given in the Notice cited above, namely "- where the decision of potential licensees of the patent in suit, that is the patent which is the subject of appeal, hinges upon the outcome of the appeal proceedings."

1.5 For these reasons and bearing in mind that the respondent did not in fact oppose the request the board decided to expedite the processing of this case.

2. *Novelty and inventive step*

2.1 The invention

2.1.1 The invention relates to the provision of Intelligent Network (IN) services in a switched telecommunications system (paragraph [0001] of the published patent). Specifically it concerns the provision of a "personal number" service by which a user can be accessed through a single unchanging number even when moving between telephones having different real numbers (paragraph [0079]). This service is implemented using the Internet

Domain Name Service (DNS), or a variation thereof (a "DNS-type" system, paragraphs [0025] and [0026]).

- 2.1.2 The DNS system (described in its basic form in documents E04 and E05) is concerned with routing in the Internet. Its primary function is to associate "domain names" (e.g. "mnprox11.epo.nl") with hardware Internet Protocol (IP) addresses (e.g. 145.64.134.231). In normal use the input includes a domain name. The system matches this to one or more "resource records" (RR), the content of which is returned. The content may take a variety of forms, depending on the type of the resource record. Two of the most commonly used types of resource records are "CNAME", which returns another, canonical, domain name for an input alias and "A" ("Address") which for the Internet returns the IP address mentioned above.
- 2.1.3 In the invention a number string is first "parsed" (transformed) into a domain name (paragraphs [0067] to [0078] of the patent). The domain name may take various forms; for example, a country code may determine the top-level domain (e.g. fr, de or uk) or alternatively the top levels of the domain may be fixed (tel.itu.int). As an example, the telephone number "441447456987" may be parsed into "456987.1447.44.tel.itu.int". The DNS is then used to look up the constructed domain name in the DNS database, which has been arranged to contain a resource record which returns the physical or "current roaming" number corresponding to the personal number input (paragraph [0079]).

2.2 The closest prior art

2.2.1 The parties and the board are agreed that the closest prior art document is PR04 (or the originally submitted selection of pages, E03). This document concerns the provision of IN services in a switched telecommunications system and mentions the provision of a personal number service, called "Universal Personal Telecommunication" (UPT), as in the patent (PR04 page 51). Thus when a personal number is dialled it is translated to the number corresponding to the present location of the desired user and a call to that number is set up. The implementation of the lookup mechanism is not discussed in detail but it is pointed out that something very similar is already done for mobile telephony to take roaming into account. It indicates that a similar arrangement would be used. Thus it discloses a system involving a "Home Location Register" (HLR) and a "Visitor Location Register" (VLR) as in GSM (pages 68 to 71). This possibility of implementation of a personal number service is also mentioned in the patent in suit in its discussion of the background of the invention at paragraphs [0016] to [0018].

2.2.2 It is disputed between the parties whether PR04 discloses a UPT service using a distributed, as opposed to a central, database. The only passage of PR04 cited by the appellant for this feature is the entry for databases in the glossary (page 341), where it is stated that, "Despite the fundamental idea of centralisation of information, increasingly there are solutions (including in wireless telephony) with distributed or relational databases," (translation by the board). This statement is not made in the specific

context of UPT, so that it is arguable that UPT and a distributed database are not disclosed in combination, at least by this passage. However, it is clear that the GSM HLR/VLR system is itself a distributed database system, since different mobile units will have different "homes" and there is a HLR/VLR associated with each GSM Mobile Switching Centre. Thus while not necessarily agreeing with the appellant's arguments on this point the board comes to the conclusion that PR04 does disclose a possible implementation of the personal telephone number service using a distributed database.

2.3 Other relevant prior art

2.3.1 The other prior art documents put forward by the appellant are a number of Internet Engineering Task Force (IETF) Requests For Comments (RFCs) concerning aspects of the Domain Name System (DNS).

2.3.2 E04 and E05 give an introduction to the DNS. The relevant disclosure has been discussed above at point 2.1.2.

2.3.3 E06 includes the statement that, "The DNS is extensible and can be used for a virtually unlimited number of data types, name spaces, etc.," (page 1, "Introduction", first sentence). This is the only passage of E06 to which the appellant has referred (see point 2.5.7 below and the grounds of opposition pages 8 and 17).

2.3.4 E07 defines five new resource record types for a variety of experimental purposes. Two of these record types return an X.25 and an ISDN address (i.e. a telephone number) respectively. These may be used in

connection with a further "Route Through" record type for "route binding", where IP packets are routed over an X.25 or ISDN connection.

- 2.3.5 E08, which also has experimental status, describes a method of sending emails to fax machines. The email is in fact sent to a server known to be willing and to possess the required hardware and software to reformat the email as a fax, dial up the fax machine and send the fax. It is presumed that the user knows the telephone number of the recipient fax machine. An email address is constructed from the telephone number. Thus for example "14159682510" is transformed into "remote-printer@0.1.5.2.8.6.9.5.1.4.1.tpc.int". The domain name part of the address is used to look up a mail exchange resource record in the DNS. The domain name of the appropriate server is returned. The email is routed to the server, which then deals with sending the fax.
- 2.3.6 E09 and E10 give further details of the scheme proposed in E08.
- 2.4 Individual features of E07 and E08 could be used for an alternative implementation of the UPT service in the switched telecommunications system of E03. Suppose that the DNS were populated with resource records containing telephone numbers similar to the RR type ISDN in E07, whereby (1) the domain name for each resource record is a personal number transformed in the way disclosed in E08 and (2) the content is the number corresponding to the present location of the desired user. Clearly the DNS supplemented with these new resource records could be used for the required translation. To arrive at the claimed invention a further step would be needed,

namely the automatic parsing of the personal number dialled. As the respondent points out E08 does not disclose automatic creation of the domain name from the fax telephone number; this is apparently done mentally by the user.

2.5 The board's assessment

2.5.1 Firstly it is important to establish the principles on the basis of which the board will decide. The board must therefore address the appellant's remarks with respect to "computer-implemented inventions" ("CIIs").

The appellant argues that the patent in suit concerns a "computer-implemented invention" and mentions the issue of "trivial patents" in this context. There is no explicit statement that the question of inventive step should be treated more strictly in this case than for other types of invention but that appears to be the implication. The board agrees with the arguments put forward by the respondent on this point that there is no basis in the EPC or the case law of the Boards of Appeal for doing so. The only "special" treatment for computer-implemented inventions relates to aspects or features of a non-technical nature; in fact this treatment is only special in the sense that the presence of non-technical features is a problem which does not arise in many fields. The appellant has not argued that non-technical features are involved in this case, so the board considers that the criteria to be applied when assessing the inventive step are the same as for any other invention.

2.5.2 The board does not agree with the appellant's arguments on a number of points, including:

- (a) the criteria for choice and the characterisation of the relevant skilled person;
- (b) the problem to be solved; and
- (c) the average knowledge of the relevant skilled person (frequently called the "common general knowledge").

However it is not necessary for the decision that the board carry out a detailed analysis of these points.

The board notes that the argumentation is contradictory; at one point (see VIII(g) above) the documents E04 to E10 are described as common general knowledge, at another (see VIII(i)) it is said that the skilled person would consult these documents once he or she had consulted someone skilled in another field (namely, according to the appellant's analysis, a telecommunications scientist).

2.5.3 As the appellant clearly recognises (see VIII(h)) a central difficulty in establishing that the claimed invention lacks an inventive step is to make a convincing argument that the skilled person would even consider using a DNS-type database for the personal number or UPT service. The appellant's arguments fail on this critical point.

2.5.4 It is asserted (see VIII(h)) that already at the priority date there had been long-running discussions

about the integration of telephone systems and the Internet with the help of the DNS. The only evidence put forward for this assertion is documents E07 and E08 to E10. However these documents do not demonstrate any "convergence" between telephone systems and the Internet; they merely show isolated examples where the Internet uses the telephone system as a carrier medium. That such examples exist is trivial; dial-up modem access via an Internet Service Provider could also be cited as an example. In particular what these documents do not show is any suggestion or motivation to use the Internet, or even Internet protocols over a dedicated network, to implement a part of the control systems of a telephone network. The respondent has in fact pointed out an indication that this was not contemplated at the time. PR04, a whole book dedicated to wireless and intelligent telecommunication networks, written in 1994 and revised in 1995, does not apparently even mention the Internet or Internet protocols (see the index).

2.5.5 Further, the DNS is not a "type" of database management system (DBMS) in the sense that a relational, object-oriented or Codayl DBMS is. The DNS is defined, as the name indicates, by its function, not its architecture. It is a system for resolving domain names to addresses, not a general DBMS. It is true that the DNS may contain different types of record not directly used for its main purpose, such as the "responsible person" record type suggested in E07. However all the record types discussed in the RFCs submitted are focussed on the problems of routing in the Internet; even the "responsible person" is clearly proposed to be of help in the case that part of the network breaks down, i.e. that routing to or through that part of the network

fails. Telecommunications networks and the Internet are parts of different technical fields, as even the appellant implicitly concedes, and in the board's view the insight that the DNS, which is intimately integrated into the structure of the Internet, can be adapted to provide a control method for a different purpose in a network belonging to a different technical field involves an inventive step.

2.5.6 Thus, even accepting the appellant's definition of the relevant skilled person, the appellant has failed to give a convincing argument that he or she would consider the use of a DNS-type database for the UPT service of PR04. The appellant has therefore also failed to demonstrate that the claimed invention does not involve an inventive step.

2.5.7 Although it is unnecessary for the decision the board notes that, even assuming that the skilled person would consider the DNS, the required adaptation of isolated elements from E07 and E08 to the system of PR04 would not be obvious to the skilled person. On this point the appellant seems to rely on a fallacious notion of what common general knowledge means. It seems to be presumed that any combination of any features known from common general knowledge is obvious. Indeed the appellant apparently goes further to assert that any such combination lacks novelty, i.e. is already known to the skilled person (see VIII(1)). But just because a number of features are commonly known in their own contexts, it is clearly not the case that every particular selection from those features in every particular arrangement is known or obvious. Taken to its logical conclusion this would mean that it would be impossible

to create an invention out of a collection of elements well-known in a particular field; for example it would be impossible to create an inventive circuit using only commercially available electronic components. Such a position is clearly untenable.

2.6 Thus the appellant has failed to demonstrate that the claimed invention lacks novelty or an inventive step and the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

D. Magliano

A. S. Clelland