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**Datasheet for the decision
of 14 January 2011**

Case Number: T 1548/07 - 3.5.05

Application Number: 00976100.8

Publication Number: 1232615

IPC: H04L 12/66

Language of the proceedings: EN

Title of invention:
Data Transmission

Applicant:
Nokia Corporation

Headword:
Data Transmission/NOKIA

Relevant legal provisions:
EPC Art. 52(1), 54, 56
EPC R. 115(2)
RPBA Art. 15(3)(6)

Relevant legal provisions (EPC 1973):
EPC Art. 106, 107, 108

Keyword:
"Oral proceedings held in the absence of the appellant"
"Novelty - yes"
"Inventive step - no"

Decisions cited:
J 0010/07

Catchword:
-



Case Number: T 1548/07 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 14 January 2011

Appellant:

Nokia Corporation
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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 12 January 2007
refusing European patent application
No. 00976100.8 pursuant to Article 97(1) EPC
1973.

Composition of the Board:

Chair: A. Ritzka
Members: P. Corcoran
F. Blumer

Summary of Facts and Submissions

- I. This is an appeal against the decision of the examining division to refuse the European patent application No. 00 976 100.8, originally filed as international application PCT/FI00/00972 and published as WO 01/37507. The decision was announced in oral proceedings held on 15 November 2006 and written reasons were dispatched on 12 January 2007.
- II. The decision under appeal was based on a main request comprising claims 1 to 37 filed with the letter dated 12 October 2006 and an auxiliary request comprising claims 1 to 37 filed during oral proceedings on 15 November 2006.
- III. According to said decision, claim 1 of the main request was not allowable due to the lack of an inventive step over the disclosure of the following document:
- D1: "Wireless Transaction Protocol Specification",
Version 30 April 1998, pages 1-71, Wireless
Application Protocol Forum, 1998.
- This objection was found to apply to the further independent claims 2, 32, 33, 34, 35, 36 and 37. The corresponding claims of the auxiliary request were also found to lack an inventive step over the disclosure of D1.
- IV. Notice of appeal was received at the EPO on 8 March 2007 with the appropriate fee being paid on the same date. A written statement setting out the grounds of appeal was received at the EPO on 10 May 2007.

- V. In said written statement the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request on which said decision was based.
- VI. In particular, the appellant submitted that the subject-matter of claim 1 was rendered novel over D1 by the feature relating to the transmission of data in the form of a plurality of data messages wherein each message represented a service data unit.
- VII. The appellant made further submissions to the effect that the claimed invention involved an inventive step over D1. In these submissions the appellant referred *inter alia* to the segmentation and concatenation processes disclosed in D1 (cf. D1: 8.14 Segmentation and Reassembly (Optional); 8.5 Concatenation and Separation; 9.5 Structure of Concatenated PDUs).

According to the appellant, D1 required the length of the data and the maximum datagram size to be known at the beginning of the transaction to decide whether concatenation or segmentation should be used. Regardless of whether concatenation or segmentation were used or not, D1 taught that only one SDU could be transmitted per transaction. With respect to the segmentation process of D1, it was submitted that the total amount of data which could be transmitted within a single transaction was limited to 256 PDUs (packets).

The present invention allowed the transmission of a plurality of messages, i.e. SDUs, inside the same transaction (cf. written statement: Sections entitled "The problem" and "The solution", pp.3 and 4). The

claimed invention thus provided a transaction protocol enabling the transmission of large amounts of data within one transaction thereby overcoming the problem associated with the protocol of D1, i.e. that it enabled only a limited amount of data to be transferred per transaction.

VIII. In a communication accompanying a summons to oral proceedings to be held on 14 January 2011 the board gave its preliminary opinion that the applicant's request was not allowable.

IX. Reference was made in said communication to the following textbook extract which was considered to reflect the general knowledge of the skilled person of relevance to the subject-matter of the present application:

D8: G. Coulouris, J. Dollimore and T. Kindberg, "Distributed Systems: Concepts and Design", 2nd edition, Chapter 12, pp.353-375, Addison Wesley Publishing Co., 1994, ISBN 0-201-62433-8.

X. Objections under Article 84 EPC were noted in relation to the independent claims of the appellant's request. Notwithstanding its reservations about the extent to which claim 1 of the appellant's request complied with the requirements of Article 84 EPC, the board considered that said claim could be interpreted as specifying a method of carrying out a transaction between a first entity (i.e. the "sender" of claim 1) and a second entity (i.e. the "receiver" of claim 1) according to which the following steps were performed:

(i) a plurality of logical data units ("messages" representing service data units) are transmitted from the first entity (the "sender") whereby each logical data unit is transmitted in the form of one or more data packets;

(ii) the second entity (the "receiver") issues an acknowledgement of the receipt of data packets so as to provide a reliable connection;

(iii) the second entity (the "receiver") is notified of the last data packet in each logical data unit so as to indicate transmission of the corresponding logical data unit; and

(iv) the second entity (the "receiver") is notified of the last logical data unit of the transaction.

The board was of the opinion that the term "message" as used in claim 1 had substantially the same meaning as in D1. According to Section 6.3.1.6 of D1, a "service data unit" (SDU) was "a complete unit of data" or "message" submitted for transmission without any manipulation of its content. It was noted in this regard that there did not appear to be any identifiable difference in technical terms between a "message" and a "service data unit" and that both terms effectively denoted a logical unit of information for transmission.

XI. On the basis of the foregoing interpretation of claim 1 a preliminary opinion concerning compliance with the novelty and inventive step requirements of Article 52(1) EPC was given.

The board noted that it was not inclined to concur with the appellant's interpretation of D1 according to which only a single message could be transmitted per transaction. In the board's opinion, D1 did not teach such a limitation. Section 8.1.5.5 of D1 referred to "the last message of the transaction" and Section 8.8.1 thereof stated that a unique transaction identifier (TID) was assigned to each transaction and used to identify messages belonging to the same transaction. These passages of D1 appeared to imply that a transaction might comprise the transmission of more than a single message.

The board was of the opinion that D1 disclosed at least implicitly a method of carrying out a transaction having all of the features of claim 1. It was additionally noted that even if the appellant's interpretation of D1 were to prevail, the modifications to the protocol of D1 required to arrive at the subject-matter of claim 1 did not appear to involve the exercise of inventive skill.

XII. With a letter of reply dated 9 December 2010, the appellant notified the board of its intention not to attend the scheduled oral proceedings and made some brief submissions in response to the issues raised in the board's communication.

In particular, the appellant contested the board's opinion that the terms "message" and "service data unit" denoted substantially the same thing in the context of D1. It was submitted that in D1 it was not possible to transmit a plurality of SDUs within the

same transaction. It became evident from reading the whole of section 8 of D1 that the plurality of "messages" referred to therein related to PDUs not SDUs. On this basis the appellant argued that the novelty of claim 1 was established by the feature of "transmitting data in the form of a plurality of data messages each message representing a service data unit".

XIII. The appellant has requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 37 filed with the letter dated 12 October 2006.

The further documents on which the appeal is based, i.e. the text of the description and the drawings, are as follows:

Description, pages:

1, 3-6, 8, 12-45 as published;

2, 2a, 7, 9-11 as filed upon entry into the regional phase before the EPO.

Drawings, sheets: 1/9-9/9 as published.

XIV. Claim 1 of the appellant's request reads as follows:

"A method of carrying out a transaction over a link between a sender (2, 12) and a receiver (2, 12), the method comprising the steps of:

transmitting data in the form of a plurality of data messages each message representing a service data unit and comprising at least one data packet,

receiving from the receiver acknowledgement of receipt of data packets so as to provide a reliable connection;

notifying the receiver of the last data packet in each data message so as to indicate transmission of the corresponding service data units; and

notifying the receiver of the last data message."

Claim 2 is a further independent claim directed towards substantially the same method of carrying out a transaction over a link between a sender and a receiver as claim 1 specifying the method steps from the perspective of the receiver entity.

Claim 32 is a further independent claim directed towards a mobile terminal.

Claim 33 is a further independent claim directed towards a gateway.

Claims 34, 35 are further independent claims directed towards a data transmission system.

Claims 36, 37 are further independent claims directed towards a computer program product.

- XV. Oral proceedings were held as scheduled on 14 January 2011 in the absence of the appellant who had been duly summoned. After deliberation the chair announced the board's decision at the end of the oral proceedings.

Reasons for the Decision

1. *Admissibility*

1.1 The appeal complies with the provisions of Articles 106 to 108 EPC 1973 which are applicable according to J 0010/07, point 1 (cf. Facts and Submissions, item IV. above). Therefore it is admissible.

2. *Non-attendance at oral proceeding*

2.1 In the present case, the board decided that it was appropriate to proceed by holding the oral proceedings as scheduled in the absence of the appellant as foreseen under Rule 115(2) EPC.

2.2 The appellant who had been duly summoned could reasonably have expected that during the oral proceedings the board would consider the objections and issues raised in the communication annexed to the summons (cf. Facts and Submissions, item IV. above) which form the basis for the present decision. In deciding not to attend the proceedings, the appellant effectively chose not to avail of the opportunity to present its observations and counter-arguments orally but instead to rely on its written case which corresponds to that presented in the written statement setting out the grounds of appeal and the letter dated 9 December 2010 (cf. Article 15(3) RPBA).

2.3 In the present case, the board was in a position to announce a decision at the conclusion of the oral proceedings as foreseen by Article 15(6) RPBA. The reasons on which this decision was based do not

constitute a departure from grounds or evidence previously put forward which would require that the appellant be given a further opportunity to comment.

3. *Interpretation of claim 1*

3.1 Notwithstanding its reservations about the extent to which claim 1 complies with the requirements of Article 84 EPC, the board finds that the definition of the matter for which protection is sought according to said claim is sufficiently clear for the question of compliance with the novelty and inventive step requirements of the EPC to be decided upon.

3.2 It is further noted in this regard that the interpretation of claim 1 set forth in the board's communication (cf. Facts and Submissions, item X. above) and on which the present decision is based has not been disputed by the appellant.

4. *Disclosure of D1*

4.1 D1 which is found to represent the closest prior art to the subject matter of claim 1 discloses a method of carrying out a transaction between a first entity (a client or "initiator") and a second entity (a server or "responder"). Reference is made in this regard to Sections 1. and 4.1 of D1 (cf. pages 6 and 9 respectively).

4.2 According to Section 5.1 of D1 (cf. D1: p.12), the basic unit of exchange in the protocol to which the specification of D1 relates is a logical unit of data termed a "message". In Section 6.3.1.6 of D1 (cf. D1:

p.19) the term Service Data Unit is used to denote such a logical unit of data which is submitted by a higher layer to the WTP layer for transmission without manipulation of its content. D1 further discloses that a message comprises at least one data packet (i.e. "PDU") and may also comprise a plurality of data packets, e.g. a message can be segmented and transmitted as a plurality of data packets (cf. D1: Section 8.14.1) or a plurality of data packets can be transmitted in a single service data unit (cf. D1: Section 8.5.1). D1 is thus found to disclose transmitting data in the form of a message, said message representing a service data unit and comprising at least one data packet.

4.3 According to D1, reliability is achieved *inter alia* through the use of acknowledgements (cf. D1: 5.1 Protocol Features). The receipt of data packets is acknowledged so as to provide a reliable connection (cf. D1: 8.14.3 Procedure for Packet Groups).

4.4 D1 likewise discloses that, where a message is transmitted as a plurality of data packets, the receiver is notified of the last data packet in the message so as to indicate transmission of the corresponding message (cf. D1: 8.14.3 Procedure for Packet Groups, in particular first sentence on p.38).

5. *Appellant's submissions*

5.1 The appellant has submitted that D1 teaches that only a single message representing a service data unit (SDU) can be transmitted within a transaction.

- 5.2 According to Section 5.1 of D1 (cf. D1: p.12), the basic unit of exchange in the disclosed protocol is a logical unit of data termed a "message". In Section 6.3.1.6 of D1 it is stated that a "service data unit" (SDU) is "a complete unit of data" or "message" submitted by a higher system layer for transmission to its destination without any manipulation of its content.
- 5.3 Section 8.1.5.5 of D1 refers to "the last message of the transaction" and Section 8.8.1 states that a unique transaction identifier (TID) is assigned to each transaction and that the main use of this identifier is to identify messages belonging to the same transaction.
- 5.4 In its communication, the board expressed the opinion that the passages of D1 referred to in 5.2 and 5.3 above imply that a transaction may comprise the transmission of more than a single message representing a service data unit. In response the appellant asserted that it is evident from reading the whole of Section 8 of D1 that the "messages" referred to therein relate to PDUs not SDUs.
- 5.5 The board is not convinced by the appellant's assertion that the term "message" as used in Section 8 of D1 relates to PDUs. Section 8.14, for example discusses the segmentation of a message into a plurality of packets. It would appear from this that the term "packet" rather than "message" relates to PDUs.
- 5.6 Nevertheless, the board finds that it cannot be conclusively established from D1 that the "messages" referred to in Section 8 thereof represent service data units, in particular because it is not clear whether

the usage of the terms "message" and "service data unit" as effective synonyms in Section 6 entitled "Elements for Layer-to-Layer Communication" (cf. Section 6.3.1.6) is applicable in the context of Section 8 entitled "Protocol Features".

5.7 The passages of D1 referred to in 5.2 and 5.3 above when read in combination suggest that a transaction might comprise the transmission of more than a single message representing a service data unit. However, in the given circumstances, such an interpretation of D1 is essentially speculative. On this basis the board concludes that while D1 does not necessarily exclude the possibility of the transmission of a plurality of messages representing service data units per transaction it does not provide a clear and unambiguous disclosure of such a transmission.

6. *Novelty*

6.1 In view of the foregoing, it is found that D1 is not prejudicial to the novelty of claim 1 inasmuch as it does not clearly and unambiguously disclose the transmission of a plurality of messages representing service data units inside the same transaction as recited in said claim.

7. *Inventive step*

7.1 Claim 1 is distinguished from the disclosure of D1 by the features which specify the transmission of a plurality of messages representing service data units inside the same transaction and the notification of the receiver of the last data message of the transaction.

- 7.2 The aforementioned distinguishing features achieve the technical effect of enabling the transmission of more logical units of data (i.e. "messages" representing service data units) within one transaction than the protocol of D1.
- 7.3 The objective technical problem underlying the claimed invention as defined in claim 1 may thus be formulated as how to provide a transaction protocol which overcomes the limitation on the number of logical units of data which can be transmitted per transaction according to the protocol of D1.
- 7.4 In the board's judgement neither the recognition of the underlying technical problem nor the claimed solution require the exercise of inventive skill for the reasons which follow.
- 7.5 The concept of a "transaction" in the field of data processing typically includes a plurality of related operations. A single "transaction" may comprise a plurality of sub-transactions and transactions may be structured as nested transactions. Reference is made to the textbook extract D8 (cf. Facts and Submissions, item IX. above) as evidence of the general knowledge of the skilled person in the above respect, in particular the following passages thereof:
- 12.2 Conversations between a client and a server;
 - 12.4 Transactions, p.359 et seq.;
 - 12.5 Nested Transactions, p.370-371.
- 7.6 A protocol such as that disclosed in D1 which is limited to the transmission of a single logical data

unit (i.e. a "message" representing a service data unit") per transaction only supports the execution of very basic transactions which require no more than the exchange of a single logical unit of data. A protocol with such a limitation would be inherently unsuitable for many practical applications and, in the board's judgement, the skilled person could be expected to recognise the inherent shortcomings of such a protocol on the basis of his general knowledge as evidenced by D8.

- 7.7 In the given context, it represents an obvious desideratum to adapt the protocol of D1 to permit the execution of more complex transactions which require the transfer of more than one logical unit of data. On this basis, the skilled person could be expected to pose the objective technical problem as formulated in 7.3 above without the exercise of inventive skill.
- 7.8 The skilled person could also be expected to recognise without the exercise of inventive skill that the solution to the aforementioned objective technical problem lies in the adaptation of the protocol of D1 to permit the transmission of a plurality of logical data units (i.e. messages representing service data units) within the scope of a single transaction thereby permitting the execution of more complex transactions.
- 7.9 In the context of adapting the protocol of D1 to permit the transmission of a plurality of messages within the scope of a single transaction, the board judges that an obvious requirement arises to notify the recipient of the last message of the transaction. In the absence of such a notification the recipient would have no way of

knowing that no further messages relating to the current transaction were to be expected and such a situation would make it impossible to conclude the transaction satisfactorily.

- 7.10 The board notes in this regard that the requirement to provide a notification of the last message of a plurality of messages is analogous to the requirement to provide a notification of the last packet group of a plurality of packet groups as described in Section 8.14.3 of D1 according to which the recipient is provided with a notification of the last data packet of each group by means of the GTR flag and likewise provided with a notification of the last group of packets by means of the TTR flag.

In general, where a transmitted information stream comprises a plurality of logical elements an obvious need arises to delimit the elements of the information stream by providing the recipient with appropriate notifications reflecting the logical structure of the transmitted data. Otherwise, the recipient would not be able to recognise the logical structure of the received data and process it in an appropriate manner.

- 7.11 The board thus finds that, in the given context, notifying the receiver of the last message of the transaction represents an obvious technical measure to ensure that the logical structure of the transmitted data is delimited in a manner which allows it to be processed in an appropriate manner by the receiver.
- 7.12 In view of the foregoing, the board judges that neither the recognition of the underlying technical problem nor

the claimed solution require the exercise of inventive skill. Claim 1 of the appellant's request is therefore found to lack an inventive step. This finding likewise applies to the further independent claims of the request.

8. In the absence of an allowable request the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:

K. Götz

A. Ritzka