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**Datasheet for the decision
of 3 June 2009**

Case Number: T 0193/06 - 3.5.05

Application Number: 04250977.8

Publication Number: 1471695

IPC: H04L 12/56

Language of the proceedings: EN

Title of invention:
Method for flow control in a communication system

Applicant:
LUCENT TECHNOLOGIES INC.

Opponent:
-

Headword:
Method for flow control/LUCENT

Relevant legal provisions:
EPC Art. 52(1), 54(1), 54(2), 56, 84, 123(2)
EPC R. 43(1)
RPBA Art. 15(3)(6)

Relevant legal provisions (EPC 1973):
EPC Art. 111(1), 113(1), 116(1)
EPC R. 71(2)

Keyword:
"Transitional provisions of the EPC 2000"
"Lack of support / missing essential features (main and first
auxiliary requests)"
"Novelty (main and first auxiliary requests - no; second
auxiliary request - yes)
"Inventive step (second auxiliary request - yes)"

"Lack of clarity / lack of support / lack of conciseness (dependent claims of second auxiliary request)"
"Remittal for further prosecution (yes)"

Decisions cited:
T 616/08

Catchword:
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Case Number: T 0193/06 **-** 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 3 June 2009

Appellant:	LUCENT TECHNOLOGIES INC. 600 Mountain Avenue Murray Hill NJ 07974-0636 (US)
Representative:	Sarup, David Alexander Alcatel-Lucent Telecom Limited Unit 18, Core 3, Workzone Innova Business Park Electric Avenue Enfield EN3 7XU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted 5 August 2005 refusing European application No. 04250977.8 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

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

C0792.D

Summary of Facts and Submissions

I.   This is an appeal against the decision of the examining
        division dated 5 August 2005 to refuse the European
        patent application No. 04250977.8 published as
        No. 1471695.

II.   The decision under appeal was based on a set of
        claims 1-10 filed with the letter of 8 June 2005. The
        examining division found that the following prior art
        documents were prejudicial to the patentability of the
        claimed subject-matter:
             Dl: EP 1 061 698 A;
             D2:   WO 02/052800 A.
        In particular, the subject-matter of claim 1 was found
        to lack novelty, or at least inventive step, over D1.
        D2 was found to be prejudicial on the same grounds.

III.   Notice of appeal was filed with the letter of
        22 September 2005 which was received on
        28 September 2005 on which date the appeal fee was paid.
        In the statement setting out the grounds of appeal
        filed with the letter of 22 November 2005 which was
        received on 28 November 2005, the appellant requested
        that the decision under appeal be set aside and a
        patent granted on the basis of the claims on file, i.e.
        claims 1-10 filed with the letter of 8 June 2005 on
        which the decision under appeal was based. The
        appellant made no request for oral proceedings.

IV.   On 20 March 2009 the board issued a summons to oral
        proceedings to be held on 3 June 2009. In an annex
        accompanying the summons, the board expressed its
        preliminary opinion that the appellant's request was

C0792.D

not allowable. In particular, the board raised objections under Articles 84 and 52(1) EPC.

V.   With a letter of reply dated 5 May 2009, the appellant maintained the claims on file as a main request and additionally filed two auxiliary requests. In said letter it was further stated that the appellant's representative would not be attending the scheduled oral proceedings. Cancellation of the oral proceedings and continuation of the procedure in writing were further requested.

VI.   In a communication from the board sent by telefax on 7 May 2009 and by post on 12 May 2009, the appellant was informed that the date fixed for the oral proceedings was maintained.

VII.   The appellant has requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of one of the following requests:

       Claims 1-10 of a main request filed with the letter of 8 June 2005;

       Claims 1-10 of a first auxiliary request filed with the letter of 5 May 2009;

       Claims 1-5 of a second auxiliary request filed with the letter of 5 May 2009.

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

Description, pages:

1-8 as originally filed;

3a filed with the letter of 29 July 2004;

9 filed with the letter of 24 January 2005.

Drawings, sheets: 1/2-2/2 as originally filed.

VIII.   Claim 1 of the main request reads as follows:

"A method of flow control, comprising:
sending a flow control message (S22) from a first
communication device (120)
indicating the first communication device (120)
can accept more data based on an amount of data
output by the first communication device (120)
CHARACTERIZED IN THAT
said sending of the flow control message is
further based on an available data storage capacity
of the first communication device (120, S14)".

Claim 1 of the first auxiliary request reads as follows:

"A method of flow control, comprising:
sending a flow control message from a first
communication device (120) indicating the first
communication device (120) can accept more data
based on an amount of data output by the first
communication device (120) since the sending of
the last flow control message and an available
data storage capacity of the transmission buffer
of the first communication device (120)".

Claim 1 of the second auxiliary request reads as
follows:

"A method of flow control, comprising:

sending flow control messages from a first
communication device (120) to a second
communication device (130) at a variable rate, the
flow control messages indicating the first
communication device (120) can accept more data
from the second communication device (130),
CHARACTERIZED IN THAT,

the variable rate for sending flow control
messages being determined based on a comparison
between a measure of data outputed [*sic*] from an
output buffer of the first communication device
(120) since a previous flow control message was
sent and a dynamically adapted threshold level,
the dynamically adapted threshold level being
established as a function of data fill in the
first communication device (120) output buffer".

IX.   Oral proceedings were held as scheduled on 3 June 2009.
Nobody attended the hearing on behalf of the appellant.
At the end of the oral proceedings, after deliberation
on the basis of the appellant's written submissions and
requests, in particular those of 22 September 2005,
22 November 2005 and 5 May 2009, the chair announced
the board's decision.

C0792.D

Reasons for the Decision

1.   *Procedural and legal matters*

1.1   *Non-appearance at oral proceedings*

1.1.1 According to Article 116(1) EPC 1973, oral proceedings
      shall take place either at the instance of the European
      Patent Office if it considers this to be expedient or at
      the request of any party to the proceedings. In the
      present case the appellant did not make a request for
      oral proceedings but the board nevertheless considered it
      expedient to convene oral proceedings in order to discuss
      and settle as far as possible all outstanding questions
      relevant to a final decision.

1.1.2 Neither the appellant nor its representative attended the
      oral proceedings to which the appellant had been duly
      summoned (cf. Facts and Submissions, points IV. and V.
      above). The appellant requested cancellation of the oral
      proceedings and continuation of the procedure in writing.

1.1.3 The need for procedural economy requires that the board
      should reach its decision as quickly as possible while
      giving the appellant a fair chance to argue its case. The
      appellant gave no reasons to support the request to
      cancel the oral proceedings and to continue the procedure
      in writing. The board judged that despite the appellant's
      stated intention not to attend the twin requirements of
      fairness and procedural economy were nevertheless best
      served by holding the oral proceedings as scheduled in
      the absence of the appellant (Rule 71(2) EPC 1973). The

request to cancel oral proceedings and to continue in writing was therefore rejected.

1.1.4 Article 15(3) RPBA stipulates that the Board shall not be obliged to delay any step in the proceedings, including its decision, by reason only of the absence at the oral proceedings of any party duly summoned who may then be treated as relying only its written case. Allowing an appellant to delay a decision by filing amended requests which do not comply with the requirements of the EPC and not attending oral proceedings at which these requests could be discussed, would also be contrary to Article 15(6) RPBA, which stipulates that a Board shall ensure that each case is ready for decision at the conclusion of the oral proceedings, unless there are special reasons to the contrary. An appellant's request to continue the procedure in writing without giving reasons for not attending the oral proceedings already arranged is not considered to be such a special reason.

1.1.5 The appellant 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 to oral proceedings (cf. Facts and Submissions, point IV. above). In deciding not to attend the oral 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 (Article 15(3) RPBA).

1.1.6 The board concludes that the appellant had an opportunity
to present comments on the grounds and evidence on which
the board's decision, arrived at during oral proceedings,
is based. The right to be heard under Article 113(1) EPC
1973 has thus been satisfied despite the appellant's non-
attendance at the oral proceedings.

1.2   *Transitional law issues*

1.2.1 In its decision of 28 June 2001 pursuant to Article 7 of
the Act revising the EPC of 29 November 2000 ("Revision
Act"), the Administrative Council of the EPO specified
transitional provisions applicable to the amended and new
provisions of the revised EPC. This decision does not
include any provisions relating to Articles of the EPC
which were not amended under Article 1 Revision Act (see
T 616/08).

1.2.2 The board understands that, as a general rule, in
accordance with Article 7(1) Revision Act, Articles not
amended under Article 1 of said Act remain applicable to
European patent applications pending at the time of entry
into force of the Act, i.e. 13 December 2007. However,
situations arise where the transitional provisions
stipulate the application of an amended Article of the
revised EPC which in turn requires or implies the
application of an unamended Article, i.e. an Article
which has not been subject to amendment under Article 1
Revision Act. In such situations, the board takes the
view that the aforementioned general rule does not
exclude the application of the relevant provisions of the
revised EPC in respect of the unamended Article and,
likewise, any Implementing Regulations associated with

said unamended Article, in particular where no adverse legal consequences for the appellant ensue from such an application of the provisions of the revised EPC.

1.2.3 Accordingly, the board considers it appropriate to evaluate compliance with the novelty and inventive step requirements of Article 52(1) EPC, as amended under Article 1 Revision Act and applicable to the present case under the aforementioned transitional provisions, by applying Articles 54(1), 54(2) and 56 of the revised EPC.

1.2.4 Likewise, the board considers it appropriate to evaluate amendments to the claims pursuant to Article 123 EPC, as amended under Article 1 Revision Act and applicable to the present case under the aforementioned transitional provisions, by applying Article 84 of the revised EPC and, consequently, Rule 43 of the revised Implementing Regulations.

1.2.5 In the present case, the application of the revised version of the EPC in respect of Articles 54(1), 54(2), 56 and 84 is essentially a formal matter having no material effect on the outcome of the proceedings.

Main request

2.   *Preliminary observations*

2.1   Claim 1 of the main request is directed towards a method of flow control which comprises sending a flow control message from a first communication device indicating the first communication device can accept more data based on an amount of data output by the first communication

C0792.D

device. The characterising part of the claim specifies that *"said sending of the flow control message is further based on an available data storage capacity of the first communication device"*.

2.2   The application discloses that a flow control message is sent when a packet counter exceeds a dynamically established packet count threshold (cf. [0012], in particular, col.3 l.57 - col.4 l.2 of the published application). The packet counter counts the number of packets removed from the transmission buffer since the last flow control message was sent (cf. col.4 l.2-5). The packet count threshold is established based on the current status of the transmission buffer. In the context of the application, the term "status" may denote either occupancy, i.e. the number of packets currently stored in the buffer, or availability, i.e. the number of additional packets that could be stored in the buffer (cf. [0012], col.4 l.12-15; [0014], [0015]).

2.3   The stated aim of the invention is to regulate the sending of flow control messages so as to make efficient use of the available bandwidth between two communication devices (cf. in particular, [0006] and [0009]). The solution is based on dynamically adjusting the frequency with which flow control messages are sent. This is achieved by setting a threshold value to reflect the current buffer status (cf. col.3 l.3-13 and [0018]) and by sending a flow control message when the amount of data removed from the transmission buffer since the last flow control message was sent exceeds the current threshold.

3.   *Article 84 EPC*

3.1   According to the description, the sending of a flow
        control message is based on a specific amount of data,
        viz. the amount of data output from the transmission
        buffer since the sending of the last flow control message.
        The indefinite term "*an amount of data output ...*" which
        is used in the characterising part of claim 1 can in
        principle refer to any amount of data output by the
        communication device. In the board's judgement, this
        formulation represents a generalisation which is not
        supported over its full breadth by the description.

3.2   The expression "*based on an available data storage
        capacity of the first communication device*" is likewise
        found to represent a generalisation which is not
        supported over its full breadth by the description.
        The relevant passages of the description disclose a
        specific available data storage capacity, i.e. the
        available storage capacity of the transmission buffer of
        the communication device.

3.3   According to the description (cf. in particular, [0012]
        and [0017]), the sending of a flow control message is
        based on a comparison of a packet counter with a
        dynamically adjustable threshold. The value of this
        threshold depends in turn on the available storage
        capacity of the transmission buffer.

        Thus, the description only discloses an indirect
        relationship between the sending of a flow control
        message and an available storage capacity of the
        communication device. There is no identifiable disclosure

of an embodiment where the sending of the flow control
message is directly based on an available storage
capacity of the communication device.

Claim 1, on the other hand, specifies in general terms
that the sending of the flow control message is "based on
an available storage capacity of the first communication
device". This wording defines the matter for which
protection is sought in terms which encompass both an
indirect and a direct relationship between the sending of
a flow control message and an available storage capacity
of the communication device.

Such a definition of the matter for which protection is
sought is unduly broad having regard to the disclosure.
The wording of the claim in this respect represents a
further generalisation which is not supported over its
full breadth by the description.

3.4   In the board's judgement, the use of a dynamically
        adjustable threshold value to control the frequency of
        sending flow control messages constitutes an essential
        aspect of the invention (cf. [0009]). However, due to its
        broad wording, claim 1 of the present request does not
        provide a definition of the technical features relating
        to this essential aspect of the invention. In particular,
        the wording of the claim fails to express that the
        sending of the flow control message depends on the result
        of a comparison between the amount of data output from
        the communication device and a dynamically adjustable
        threshold value. On this basis, the board finds that the
        wording of said claim 1 does not define all essential
        technical features of the claimed invention contrary to

the requirements deriving from Article 84 and Rule 43(1) EPC.

3.5   In view of the foregoing, the board concludes that claim 1 of the main request does not comply with the requirements of Article 84 EPC.

4.   *Article 52(1) EPC*

4.1   Without prejudice to the foregoing objections, the board additionally finds that the subject matter of claim 1 of the main request, independent of its lack of compliance with the requirements of Article 84 EPC, does not comply with the requirements of Article 52(1) EPC as detailed below. In particular, the disclosure of D2 is found to be prejudicial to the novelty of said claim.

4.2   D2 discloses a method of flow control, comprising sending a flow control message from a first communication device, i.e. the base station subsystem (BSS), indicating the first communication device can accept more data based on an amount of data output by the first communication device. According to D2, flow control messages are sent based on the value of R_Dif which depends, *inter alia*, on the amount of data output by the communication device, i.e. the transmission rate R (cf. D2: p.7 l.31-36, p.11 l.7-24 and equations on p.11 l.22, p.11 l.30, p.12 l.10 and p.13 l.30).

4.3   The parameter B_Def which determines a target value for D, the amount of data currently buffered in BF2 (cf. D2: p.12 l.25-29) corresponds to an available data storage capacity of the communication device.

In particular, it is noted that the coefficient (1-
(D/B_Def)) which appears in the equation on p.12 l.10 of
D2 reflects "an available storage capacity" of the output
transmission buffer BF2 with respect to a particular data
flow. When the current occupancy D approaches the target
value B_Def, the value of this coefficient approaches
zero. When the current occupancy D approaches zero, the
value of this coefficient approaches unity.

Hence, the sending of the flow control message which is
based on B_Def (cf. D2: p.12 l.5-18) is "further based on
an available data storage capacity of the first
communication device" as recited in the characterising
part of claim 1.

4.4   In view of the foregoing, D2 is found to disclose all of
the features of claim 1 of the main request and on this
basis is judged to be prejudicial to the novelty of said
claim.

5.   *Observations re. the appellant's submissions*

5.1   The appellant has submitted that D2 does not disclose or
suggest establishing a threshold based on an available
storage capacity and has further argued that the
parameter D of D2 does not define "an available data
storage capacity" of the communication device (cf.
statement of grounds p.5 l.3-6).

5.2   The board notes that claim 1 of the present request
      merely recites in general terms that the sending of a
      flow control message is based on an available storage
      capacity of the communication device. The wording of the
      claim does not specify the establishment of a threshold
      based on an available storage capacity of the
      communication device. Hence, the appellant's submission
      that D2 does not disclose or suggest establishing a
      threshold based on an available storage capacity is found
      to be without merit because this alleged distinction over
      D2 finds no expression in the wording of the claim.

5.3   As to the submission that the parameter D of D2 does not
      define "an available data storage capacity" of the
      communication device (cf. letter of 5 May 2009, p.3), the
      board notes that the novelty objection detailed in 4.
      above is based on the premise that it is the parameter
      B_Def, or alternatively the coefficient (1 - (D/B_Def)),
      rather than the parameter D which defines an available
      data storage capacity of the communication device in D2.
      Hence, the appellant's submission in this regard is
      likewise found to be without merit.

6.   Due to the deficiencies noted under 3. and 4. above,
      claim 1 of the main request is found not to comply with
      the requirements of Articles 84 EPC and 52(1) EPC. The
      request is therefore not allowable.

7.   *Obiter Dictum re. main request*

7.1   For the sake of completeness, the board notes that the
      parameter D referred to by the appellant (cf. 5.1 and 5.3
      above) represents the amount of data currently buffered

in BF2 (cf. D2: p.12 l.12-13). Insofar as the parameter
indicates the current "occupancy" of the transmission
buffer BF2 rather than its current "availability", it
does not explicitly define an available data storage
capacity of the communication device. However,
"occupancy" and "availability", in the sense in which
these terms are used in the present application,
represent complementary measures of buffer usage, i.e.
the higher the occupancy, the lower the available storage
capacity and *vice versa*. The board considers that, in the
given context, the occupancy level of a buffer as
specified by the parameter *D* corresponds implicitly to an
available data storage capacity of the buffer.

7.2   It is further noted that even if the distinction between
        "occupancy" and "availability" were conceded to be
        relevant for the purpose of establishing novelty,
        selecting one of these measures of buffer status over the
        other is essentially a matter of design choice. Thus,
        even if the appellant's submissions relating to the
        parameter *D* had been found relevant for the purpose of
        establishing novelty over D2, the board would not have
        been inclined to acknowledge an inventive step based on
        this alleged distinction.

First auxiliary request

8.   Claim 1 of the first auxiliary request differs from
        claim 1 of the preceding request in that it further
        specifies that the amount of data output by the first
        communication device is the amount of data output "since
        the sending of the last flow control message" and that
        the available data storage capacity is "an available data

storage capacity of the transmission buffer of the first
communication device".

9.   *Article 84 EPC*

9.1   Whereas the amendments to claim 1 of the present request
       are apparently sufficient to overcome the objections
       raised against claim 1 of the main request as detailed
       under 3.1 and 3.2 above, the board finds that they do not
       overcome the further objections set out under 3.3 and 3.4
       above.

9.2   The wording of said claim 1 defines the matter for which
       protection is sought in terms which encompass both an
       indirect and a direct relationship between the sending of
       a flow control message and the available storage capacity
       of the transmission buffer of the communication device.
       The objection detailed in 3.3 above continues to apply to
       claim 1 of the present request, i.e. the claim defines
       the matter for which protection is sought in a manner
       which is not supported over its full breadth by the
       description.

9.3   Likewise, the wording of said claim still fails to
       express that the sending of the flow control message
       depends on the result of a comparison between the amount
       of data output from the communication device and a
       dynamically adjustable threshold value. For this reason
       the objection detailed in 3.4 above continues to apply to
       claim 1 of the present request, i.e. the wording of the
       claim does not define all essential technical features of
       the claimed invention contrary to the requirements
       deriving from Article 84 EPC and Rule 43(1) EPC.

9.4   In view of the foregoing, the board concludes that
       claim 1 of the first auxiliary request does not comply
       with the requirements of Article 84 EPC.

10.   *Article 52(1) EPC*

10.1   Without prejudice to the foregoing objections, the board
       additionally finds that the subject matter of claim 1 of
       the first auxiliary request, independent of its lack of
       compliance with the requirements of Article 84 EPC, does
       not comply with the requirements of Article 52(1) EPC as
       detailed below. In particular, the disclosure of D2 is
       still found to be prejudicial to the novelty of said
       claim.

10.2   As noted in 4.2 above, D2 discloses that flow control
       messages are sent based on the value of *R_Dif* which
       depends, *inter alia*, on the amount of data output by the
       communication device, i.e. the transmission rate *R*. In a
       preferred embodiment the transmission rate is calculated
       as the number of bytes transmitted within the time period
       that determines the repetition rate of the flow control
       procedure (cf. p.11 l.19-26). D2 thus discloses that the
       sending of flow control messages is based on "an amount
       of data output by the first communication device ...
       since the sending of the last flow control message" as
       recited in claim 1 of the present request.

10.3   The parameter *B_Def* referred to in 4.3 above determines a
       target value for the amount of data currently buffered in
       the transmission buffer BF2 (cf. D2: p.12 l.25-29) and
       thus represents "an available data storage capacity of

C0792.D

the transmission buffer of the first communication
device". Accordingly, the sending of the flow control
message which is based on *B_Def* (cf. D2: p.12 l.5-18) is
further based on "an available data storage capacity of
the transmission buffer of the first communication
device" as recited in claim 1 of the present request.

10.4   In view of the foregoing, the board concludes that the
       amendments to claim 1 of the present request do not
       suffice to render its subject-matter novel over the
       disclosure of D2. The objection due to lack of novelty
       based on D2 which was raised against the corresponding
       claim of the main request (cf. 4. above) still applies
       mutatis mutandis against claim 1 of the present request.

11.   Due to the deficiencies noted under 9. and 10. above,
       claim 1 of the first auxiliary request is found not to
       comply with the requirements of Articles 84 EPC and 52(1)
       EPC. The request is therefore not allowable.

Second auxiliary request

12.   *Preliminary observations re. amendments to claim 1*

12.1   The expression "as a function of data fill" which has
       been introduced into claim 1 of the second auxiliary
       request is not used in the application as filed. In the
       description the term "status" is employed to denote
       occupancy or availability of a buffer and it is stated
       that when the buffer is relatively full a lower count
       threshold is set (cf. application: [0009]; [0012], last
       sentence).

The term "fill" is, however, used in the prior art to denote the data occupancy level of a buffer, for example in D1 (cf. D1: [0032], col.9 l.26-29). D2 likewise refers to "the degree of filling in the buffer" (cf. D2: p.5 l.29-31).

Although the expression "as a function of data fill" is not found *verbatim* in the application, the board takes the view that the intended meaning is sufficiently clear for it to be understood by the skilled person in the given context. Furthermore, the disclosure of a threshold level which is established based on the status of the output buffer (cf. description [0014] and [0015]) is found to correspond in substance to a disclosure of a dynamically adapted threshold level established "as a function of data fill" of the output buffer as recited in claim 1. On this basis, the board judges that the passages of the description cited above provide adequate support for the aforementioned claim wording.

The board therefore concludes that the amendment to claim 1 specifying the establishment of a dynamically adapted threshold level "as a function of data fill" complies with the requirements of Article 123(2) EPC because a sufficient basis for this amendment exists in the application as filed.

12.2   The board additionally notes that the present wording of claim 1 contains a linguistic error. The term "outputted" is used instead of the grammatically correct form of the past participle, i.e. "output". The board takes the view that this is a minor error which does not affect the clarity of the claimed subject-matter.

13.   *Claim 1 - novelty*

13.1   D2 relates to a "leaky bucket algorithm" (cf. title of
       published application). This is a method of flow control
       in which flow control parameters relating to a first
       communication device, i.e. the base station subsystem
       (BSS), are determined and a second communication device,
       i.e. the serving GPRS support node (SGSN), is informed of
       the new parameter values such that it can adjust its
       transmission of data to the rate at which the first
       device is able to unload its buffer (cf. D2: p.5 l.27-36;
       p.7 l.31-36; p.10 l.8-11). The flow control parameters
       include a "leak rate" value which is corrected based on a
       degree of filling of the output buffer of the first
       communication device (cf. D2 p.5 l.29-31).

       The flow control algorithm of D2 is repeated at
       predetermined intervals (cf. D2: p.6 l.21-25; p.11 l.25-
       26; p.14 l.28-30). In one embodiment, the sending flow of
       control messages is limited based on a comparison between
       a differential leak rate value, *R_Dif*, and a
       predetermined threshold (cf. D2: p.6 l.13-20; p.14 l.20-
       27). In this embodiment the messages are effectively sent
       at a variable rate because they are only sent on a
       selective basis, i.e. when the predetermined threshold is
       exceeded.

       R_Dif, which is the relative difference between a real
       leak rate value and a leak rate value currently used by
       the SGSN (cf. D2: p.13 l.30), corresponds to a measure of
       the extent to which the real amount of data output
       deviates from an expected value. On this basis, it can be

considered to represent a measure of data output from an
output buffer since a previous flow control message was
sent.

D2 fails to disclose a dynamically adapted threshold
level, in particular a threshold level which is
established as a function of data fill in the first
communication device output buffer. In D2, it is the leak
rate parameter value which is adapted or "corrected" on
the basis of the degree of filling of the buffer whereas
the threshold value is static (cf. D2: p.5 l.29-31 and
p.14 l.20-27).

13.2   Concerning D1, the board notes that this document relates
       to a method and apparatus for controlling congestion in a
       data transport network. D1 discloses that a first
       communication device, i.e. a node in the network,
       evaluates the data occupancy level of a certain portion
       of the network based on the traffic units received from a
       second communication device, i.e. a remote node (cf. D1:
       [0007]). The estimated data occupancy level is compared
       against a dynamic threshold which varies on the basis of
       the rate of release of traffic units from that node. When
       the threshold is exceeded, the node issues a control
       signal that is sent to the remote node (cf. D1: [0008]).
       The control signal provides a notification to the remote
       node to reduce the output of traffic units into the
       network.

       The "control signals" of D1 may be considered as flow
       control messages. However, they are not flow control
       messages indicating that the first communication device,
       i.e. the node emitting the signals, can accept more data

but rather flow control messages indicating that
congestion exists or is developing in a portion of the
network and that a second communication device, i.e. the
remote node which receives the signals, should reduce its
rate of data release into the network (cf. D1: [0024]).

D1 further discloses a dynamically adapted threshold
level which reflects the amount of local data that the
node is desirous of releasing to the network (D1: [0030],
col.8 l.52-54). This threshold level is arguably
established as a function of data fill in the first
communication device output buffer inasmuch as D1
discloses that the threshold level depends on the amount
of local data for release into the network (cf. D1:
[0030], in particular col.8 l.57-col.9 l.2). This implies
that the threshold level is based on the data fill in the
first communication device output buffer.

However, D1 does not disclose a comparison between the
threshold level and a measure of data output from an
output buffer of the first communication device as
recited in claim 1. Instead it discloses a comparison
between the threshold and a data occupancy level of a
portion of the network as indicated by a "virtual buffer"
(cf. D1: [0015], col.4 l.22-27; [0029]; [0032]). The data
occupancy level of the network is estimated based on the
incoming data received by the node (cf. D1: [0007], col.2
l.5-8; [0028], col.8 l.12-18) and clearly bears no
relation to a measure of data output from the output
buffer.

13.3   In view of the foregoing, the board is satisfied that the
       amendments to claim 1 of the second auxiliary request
       distinguish the claimed invention from D2 and thus
       overcome the novelty objections raised against the
       independent claims of the preceding requests. The claimed
       invention is likewise defined in a manner which
       distinguishes it from the disclosure of D1.

14.   *Claim 1 - inventive step*

14.1   The board considers that D2 represents the closest prior
       art to the subject-matter of the present application
       because said document relates to the problem of flow
       control in a base station subsystem at the air interface
       of a wireless access network similar to the preferred
       embodiment of the present application (cf. D2: p.1 l.29-
       36; application: [0001]-[0003]). Moreover, D2 is
       concerned with substantially the same technical problem
       as that addressed by the application, i.e. efficiently
       regulating the sending of flow control messages with the
       aim of preventing buffer underflow/overflow (cf. D2: p.4
       l.34 - p.5 l.15; application: [0006]; [0009]).

       The flow control method of D2 differs from that of
       claim 1 in that the sending flow of control messages in
       D2 is determined based on a comparison between a measure
       of data output from an output buffer since a previous
       flow control message was sent, i.e. *R_Dif*, and a <u>static</u>
       preset threshold (cf. 13.1 above). Claim 1, on the other
       hand, specifies a comparison between a measure of data
       output from an output buffer since a previous flow
       control message was sent and a dynamically adapted
       threshold level.

This difference reflects the fact that the method of the present application represents an alternative approach to regulating the sending of flow control messages which is based on a different set of parameters to that of D2. The objective technical problem may be formulated as how to provide an alternative method for regulating the sending of flow control messages.

The flow control method of D2 is primarily concerned with determining the extent to which the real leak rate from the BSS deviates from a previously calculated value stored at the SGSN. The relative magnitude of this deviation is compared to a predetermined static threshold value in order to determine whether or not a flow control message should be sent to the SGSN such that it can update its parameter values and adjust its transmission rate accordingly (cf. D2: p.5 l.27-36; p.7 l.31-36; p.14 l.20-27). If the relative deviation does not exceed a certain predetermined threshold there is no need to send a flow control message to the SGSN because the parameter values which it is currently using are considered to be sufficiently close to the real values.

There is no teaching or suggestion in D2 to the effect that the threshold value to which the relative deviation is compared should be dynamically adapted or, more specifically, that its value should depend on the degree of filling of the output buffer. Neither can the board identify any motivation which would induce the skilled person to make such modifications to the teaching of D2.

The board notes that the concept of a dynamically adapted threshold is known *per se* and the use of such a threshold in the context of congestion control is disclosed in D1 (cf. 13.2 above). However, D1 relates to a flow control method which aims to solve a different technical problem, i.e. to prevent or reduce congestion in a data transport network as opposed to preventing or reducing buffer underflow/overflow. Given the different technical problems addressed by D2 and D1, the board considers it implausible that the teachings of the documents can be combined to arrive at the subject-matter of claim 1. In particular, there is no evident motivation for the skilled person to introduce modifications to the "leaky bucket" flow control method of D2 based on an isolated feature, i.e. the dynamically adapted threshold, disclosed in the context of the network congestion control method of D1.

14.2   As noted in 14.1 above D1 is primarily concerned with reducing congestion in a data transport network rather than preventing buffer underflow/overflow. In D1, a network node sends flow control messages to a remote node based on a comparison between the data occupancy level of the network and a dynamically adapted threshold level reflecting the amount of data which the node wishes to release into the network. The effect of sending the flow control messages is to cause the remote node to reduce the rate at which it releases data into the network.

The method disclosed in D1 differs from the method of claim 1 in the following respects (cf. 13.2 above):

(i) The flow control messages do not indicate that the first communication device, i.e. the node emitting the messages, can accept more data but rather indicate that the node which receives the signal should reduce its rate of release into the network because congestion exists or is developing in a portion of the network;

(ii) The sending of the flow control messages is based on a comparison between a dynamic threshold and a measure of the data occupancy level on the network which is, in turn, based on or derived from the data <u>received</u> by the node.

These differences reflect the fact that D1 relates to a method of flow control designed for a different operational context to that of the present application and which aims to solve a different technical problem, *viz.* reducing congestion in a data transport network as opposed to preventing buffer underflow/overflow. In the board's judgement, D1 is too remote from the subject matter of claim 1 to provide a plausible starting point for an inventive step objection against said claim.

14.3 In view of the foregoing, the board concludes that the prior art of record is not prejudicial to the inventive step of the invention as now defined in claim 1 of the second auxiliary request.

15. *Deficiencies in the dependent claims*

15.1 The board notes that there are deficiencies in the dependent claims of the second auxiliary request as detailed below.

15.2 The expressions "the available storage capacity" (claim 2)
      and "the available data capacity" (claims 3 and 4) lack
      an antecedent basis in view of the amendments to
      independent claim 1 and thus render the definition of the
      matter for which protection is sought unclear.

15.3 The expressions "an amount of unused data storage in the
      first communication device" (claim 3) and "the amount of
      data stored in the first communication device" (claim 4)
      are not specifically limited to the unused data storage
      or the data stored in the output buffer of the
      communication device. The wording of claims 3 and 4 in
      this respect thus represent generalisations which are not
      supported over their full breadth by the description.

15.4 Insofar as "the amount of data output" recited in claim 5
      is intended to correspond to the "measure of data
      outputed [*sic*]" recited in claim 1, the subject-matter
      of claim 5 appears to be redundant. The unnecessary
      repetition in a dependent claim of subject-matter which
      is already present in an independent claim constitutes a
      lack of conciseness in the formulation of the claims as a
      whole, contrary to the requirements of Article 84 EPC.

15.5 In view of the foregoing, the board finds that the
      dependent claims of the request do not comply with the
      requirements of Article 84 EPC.

16.   *Conclusions*

16.1 Claim 1 of the second auxiliary request defines the
      matter for which protection is sought in a manner which,
      in the board's judgement, overcomes the objections under

Article 84 EPC upheld against the preceding requests.
Moreover, in view of the clarifying amendments to the
claim, the board finds that the available prior art is no
longer prejudicial to the patentability of the claimed
subject-matter.

16.2   Notwithstanding the board's findings in respect of
       claim 1 of the second auxiliary request, the request as a
       whole is not allowable in view of the deficiencies in the
       dependent claims as detailed under 15. above.

16.3   Despite these deficiencies, the board takes the view that
       the request could, without undue difficulty, be amended
       to comply with the requirements of the EPC. Such
       amendment would require appropriate adaption of the
       dependent claims. The minor linguistic error in claim 1
       as noted in 12.2 above should also be corrected.

16.4   The board notes that the appellant's non-attendance at
       the scheduled oral proceedings was not conducive to
       procedural efficiency because, in principle, it would
       have been possible to amend the remaining deficiencies in
       the request during oral proceedings had the appellant
       attended or been represented.

16.5   Nevertheless, the board accepts that the amendments filed
       with the letter dated 5 May 2009 represent a *bone fide*
       attempt to address the objections raised in the
       communication accompanying the summons to oral
       proceedings. Given that claim 1 of the second auxiliary
       request effectively overcomes those objections, the board
       concludes that a dismissal of the appeal due to the

remaining deficiencies in the request would not be
justified.

16.6   Under the given circumstances, the board judges that the
       most appropriate course of action is to remit the case to
       the first instance for further prosecution pursuant to
       Article 111(1) EPC 1973. The purpose of the remittal is
       to provide an opportunity for the dependent claims of the
       second auxiliary request to be amended such that the
       request as a whole may be brought into conformity with
       the requirements of the EPC.

Order

For these reasons it is decided that:

1.   The decision under appeal is set aside.

2.   The case is remitted to the department of first
       instance for further prosecution.

The Registrar: The Chair:

A. Vottner   A. Ritzka

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