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Datasheet for the decision
of 29 October 2020

Case Number:	T 0755/20 - 3.5.05
Application Number:	11729565.9
Publication Number:	2583413
IPC:	H04L12/24, H04L12/28, H04L29/08, H04L29/06
Language of the proceedings:	EN

Title of invention:
METHOD AND SYSTEM FOR EFFICIENT USE OF A TELECOMMUNICATION
NETWORK AND THE CONNECTION BETWEEN THE TELECOMMUNICATIONS
NETWORK AND A CUSTOMER PREMISES EQUIPMENT

Applicant:
Deutsche Telekom AG

Headword:
Implicit authentication in an NGN system using the line ID /
Telekom

Relevant legal provisions:
EPC Art. 56, 83, 84
RPBA 2020 Art. 11, 12(6), 13(1)

Keyword:
Claims - clarity (yes)
Sufficiency of disclosure - (yes)
Inventive step - (no)
Remittal - (no)
Amendment to appeal case - amendment overcomes issues raised
(yes)

Decisions cited:
T 0197/10

Beschwerdekammern

Boards of Appeal

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Case Number: T 0755/20 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 29 October 2020

Appellant:	Deutsche Telekom AG
(Applicant)	Friedrich-Ebert-Allee 140
	53113 Bonn (DE)
Representative:	Schwöbel, Thilo K.
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	50676 Köln (DE)

Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 8 January 2020 refusing European patent application No. 11729565.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	P. Tabery
	D. Prietzel-Funk

Summary of Facts and Submissions

I.   The appeal is against the decision of the examining
        division to refuse European patent application
        No. 11729565.9.

II.   The examining division made reference to, *inter alia*,
        the following documents:

> **D1**   "Telecommunications and Internet converged
>   Services and Protocols for Advanced Networking
>   (TISPAN); NGN Security; Security Architecture",
>   European Telecommunications Standards Institute
>   (ETSI)DRAFT TS 187 003 V3.2.0, 15 June 2010,
>   XP014055854
>
> **D2**   "Telecommunications and Internet converged
>   Services and Protocols for Advanced Networking
>   (TISPAN); NGN Functional Architecture",
>   European Telecommunications Standards Institute
>   (ETSI) DRAFT; ETSI ES 282 001 V3.0.0, 9
>   February 2009, XP014057066
>
> **D3**   "Telecommunications and Internet converged
>   Services and Protocols for Advanced Networking
>   (TISPAN); NGN Functional Architecture; Network
>   Attachment Sub-System (NASS)", European
>   Telecommunications Standards Institute (ETSI)
>   STANDARD; ETSI ES 282 004 V3.4.1, March 2010,
>   XP014046256
>
> **D4**   "Telecommunications and Internet converged
>   Services and Protocols for Advanced Networking
>   (TISPAN); Resource and Admission Control Sub-
>   System (RACS): Functional Architecture",

European Telecommunications Standards Institute
(ETSI)STANDARD; ETSI ES 282 003 V3.4.2, April
2010, XP014046255

D5   Rebecca Copeland: "Converging NGN Wireline and
Mobile 3G Networks with IMS: Converging NGN and
3G Mobile - Chapter 'Network Admission'", 22
December 2008 (2008-12-22), Auerbach
Publications 2008, ISBN: 978-1-42-001378-8
pages 117-155

III.   The examining division decided that the patent
application did not disclose the claimed invention in a
manner sufficiently clear and complete for it to be
carried out by a person skilled in the art (Article 83
EPC). In an obiter dictum, the decision made reference
to an assessment of novelty and inventive step
(Articles 54(1) and 56 EPC) which had been provided in
the summons and the brief communication dated
3 December 2019 for an earlier claim set.

IV.   In its statement setting out the grounds of appeal, the
appellant (applicant) requested that a patent be
granted based on the claims as originally filed. On an
auxiliary basis, the appellant requested that a patent
be granted based on the claims considered in the
impugned decision. On an auxiliary basis, the appellant
requested that the case be remitted to the department
whose decision was appealed for further prosecution.

V.   The board issued a summons to oral proceedings. In an
annex to the summons, the board set out its provisional
view of the case (Article 15(1) RPBA 2020).

The board considered that the **main request** was not admissible since it related to a request that was no longer maintained (Article 12(6) RPBA 2020).

With respect to the **auxiliary request**, the board asserted that claim 1 would meet the requirements of Article 84 EPC and thus its wording was not open to interpretation, contrary to the decision under appeal. On the other hand, the board raised an objection pursuant to Article 84 EPC against independent claim 7. Further contrary to the decision under appeal, the board expressed its view that claim 1 would meet the requirements of Article 83 EPC.

In addition to what had been decided by the examining division, the board gave its preliminary opinion on inventive step of claim 1 of the auxiliary request. In the board's opinion, claim 1 failed to meet the requirements of Article 56 EPC. In the absence of a technical effect caused by either of the distinguishing features, no objective technical problem existed which could be used to support an inventive step.

VI.   In a reply dated 25 September 2020, the appellant submitted a new main request, replacing the previous main and auxiliary request.

VII.   Oral proceedings were held on 29 October 2020. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 6 of the main request submitted with the letter dated 25 September 2020.

VIII.   Claim 1 reads as follows (features labelled by the board):

Method for efficient establishing and/or configuring of
a connection between a telecommunications network (5)
and a CPE (10) via an access node (20), wherein the
telecommunication network (5) is a next generation
network (5), the method comprising the steps of:

(i)   establishing a physical communication channel
between the access node (20) of the telecommunications
network (5) and the CPE (10), the physical
communication channel being represented by a line ID
information related to the access node (20),

(ii)   the CPE (10) requesting a telecommunications
network service, wherein the access node (20)
complements the request of the CPE (10) by the line ID
information and a port ID information, wherein the port
ID information identifies a port of the access node
(20) which is connected to the physical connection
towards the CPE (10), wherein the line ID information
and port ID information are known in a trusted manner
to the telecommunication network (5),

(iii)   an Internet Protocol Edge node (30) of the
telecommunications network (5) providing a public or
private Internet Protocol address to the CPE (10) for
use by the CPE (10) to communicate with the Internet
Protocol Edge node (30), the Internet Protocol address
being associated with the line ID information and an
Internet Protocol session (IP session) or connection
realizing a logical communication channel being
initiated between the Internet Protocol Edge node (30)
of the telecommunications network (5) and the CPE (10),
wherein the logical communication channel is
established by using the line ID information and the
port ID information as authentication information,

(iv)   the Internet Protocol Edge node (30) initially assigning a first functionality level to the public or private Internet Protocol address, wherein the first functionality level is a reduced functionality level that permits only access to a limited range of target Internet Protocol addresses,

(v)   the Internet Protocol Edge node (30) assigning a second functionality level to the public or private Internet Protocol address, in case that the telecommunications network (5) is able to relate the line ID information to a contract related identification information, wherein the second functionality level is an increased functionality level that permits access to an enhanced range of target Internet Protocol addresses, wherein the contract related identification information corresponds to a user,

(vi)   relating the line ID information to the contract related identification information comprising an authentication based on a Network Attachment Subsystem (NASS).

Reasons for the Decision

1.   The present application concerns a next generation network (NGN) providing authenticated access to a telecommunications network service. For the authentication of the customer premises equipment (CPE), the *"line ID"* and the *"port ID"* relating to the physical line and physical port, respectively, are used. The CPE may be authorised at a reduced or

increased functionality level, depending on contract data.

2.   Documents **D1**-**D4** are ETSI TISPAN standardisation documents, disclosing the ETSI TISPAN architecture and explaining the functionality of the different entities. Since they disclose complementing aspects of the same system, documents **D1**-**D4** are treated as a single document.

3.   Admissibility

The set of claims submitted on 25 September 2020 addresses the objections pursuant to Article 84 EPC raised for the first time in the summons of the board. Since the amendments overcome these objections in deleting the objected claims without giving rise to new objections, the board decides to admit this set of claims into the procedure (Article 13(1) RPBA 2020).

4.   Clarity (Article 84 EPC)

The board considers that independent **claims 1 and 5** are clear and thus fulfil the requirements of Article 84 EPC.

Notably, the board asserts that the feature *"an Internet Protocol Edge node ... [provides] a public or private IP address"* is clear and possesses a precise meaning in the art. Therefore, this feature is not open to interpretation and has to be used in the analysis regarding the remaining requirements of the EPC as worded by the appellant (in line with T0197/10).

In addition, the board considers that, as correctly argued by the appellant, the terms *"line"* and *"port"*

are commonly known in telecommunication networks. In
the present context, *"line"* denotes the subscriber
(copper) line and *"port"* the port of the DSLAM which
the subscriber line is connected to.

5.   Sufficiency of disclosure (Article 83 EPC)

Using its interpretation of *"provides"*, the examining
division considered that the skilled person would have
been confronted with the task of moving the IP address
allocation functionality from the NASS to the IP edge
node. However, the application does not give further
details on the dependencies and other changes that
would be necessary to move this functionality to the IP
edge node. The examining division therefore concluded
that the skilled person would not have been able to
implement the invention using common general knowledge.

The board asserts that, when attempting to implement
this feature *as actually worded*, the skilled person
would have been merely faced with the task of making
available an already allocated IP address to the IP
edge node. Especially since this was already disclosed
in document **D1** (see below), the skilled person would
not have encountered any obstacles when trying to
implement the claimed invention in the NGN system known
from the cited prior art.

Therefore, the board considers that the independent
claims fulfil the requirements of Article 83 EPC.

6.   No remittal

The board decides that although the decision under
appeal does not deal with the further issues of novelty
and inventive step, it is more sensible to continue the

appeal proceedings in this case in view of further
related applications pending to promote the examination
proceedings as suggested by the appellant in its
statement setting out the grounds of appeal (Article 11
RPBA 2020). Albeit not considered in the impugned
decision, the board notes that novelty was previously
discussed during the examination procedure for an
earlier claim version, containing many of the features
of the present independent claims.

7.   Patentability

7.1

7.2   Novelty (Article 54(2) EPC)

7.2.1   Based on the passages cited during the examination
        procedure, documents **D1-D4** disclose the features of
        claim 1 as follows (the references in parentheses
        referring to the respective documents; strike-through
        is used to mark undisclosed features; alternative
        features disclosed in these documents are underlined):

        Method for efficient establishing and/or configuring of
        a connection between a telecommunications network *(see
        D2, figure 2a and figure A.1: Access Transport Network/
        Core Transport Network)* and a CPE *("User Equipment",
        see D2, figure 2a; "RGW [Residential Gateway]", see D2,
        figure A.1)* via an access node *("Access Node", see D2,
        figure 2a and figure A.1)*, wherein the telecommuni-
        cation network is a next generation network *("NGN", see
        titles of D1, D2, etc.)*,

        the method comprising the steps of:

        (i)   establishing a physical communication channel
        between the access node of the telecommunications
        network and the CPE *("Access segment", see D2, figure*

2a), the physical communication channel being represented by a line ID information related to the access node *(implied by: "binding between the IP address and the location information (contains the Line Identifier)", see **D1**, sect. D.1, step 1)*,

(ii)   the CPE requesting a telecommunications network service *("accessing the IMS", see **D3**, sect. 5.2.1)*, wherein the ~~access node~~ P-CSCF complements the request of the CPE by the line ID information ~~and a port ID information~~, wherein ~~the~~ a port ID information identifies a port of the access node which is connected to the physical connection towards the CPE, wherein the line ID information ~~and port ID information are~~ is known in a trusted manner to the telecommunication network *("The P-CSCF embeds the location information [containing the Line Identifier] into the SIP message and forwards it towards the S-CSCF for verification", see **D1**, sect. 4.4.1)*,

(iii)   an Internet Protocol Edge node *(**D2**, figure A.1 shows that all access transport passes through the "IP edge node")* of the telecommunications network providing a public or private Internet Protocol address to the CPE for use by the CPE to communicate with the Internet Protocol Edge node *("During the network attachment, the NASS authenticates the UE and allocates an IP address", see **D1**, sect. 4.4.1)*, the Internet Protocol address being associated with the line ID information *("binding between the IP address and the location information (contains the Line Identifier), which the user holds per the xDSL connectivity", see **D1**, sect. D.1, step 1)* and an IP session or connection realizing a logical communication channel being initiated between the Internet Protocol Edge node of the telecommunications network and the CPE *(IP transport drawn from RGW to IP*

*edge node, see **D2**, figure A.1)*, wherein the logical
communication channel is established by using the line
ID information ~~and the port ID information~~ as
authentication information *(see **D1**, page 54, item 'R-
IR-3')*,

(iv)   the Internet Protocol Edge node initially
assigning a first functionality level to the public or
private Internet Protocol address, wherein the first
functionality level is a reduced functionality level
that permits only access to a limited range of target
Internet Protocol addresses *(implied by: "authorization
may be granted without requiring authentication or
identification e.g. emergency call services", see **D3**,
sect. 3.1, item 'authorization'; Note: this is commonly
known and referred to as 'basic network service', see,
e.g. **D5**, page 137, item 1)*,

(v)   the Internet Protocol Edge node assigning a
second functionality level to the public or private
Internet Protocol address, in case that the
telecommunications network is able to relate the line
ID information to a contract related identification
information *("upon successful authentication of the
NASS User", see **D3**, sect. 5.3.4.1)*, wherein the second
functionality level is an increased functionality level
that permits access to an enhanced range of target
Internet Protocol addresses *("list of default
destination IP addresses ... to which traffic can be
sent", see **D3**, page 20, table 5.5, row 22)*, wherein the
contract related identification information corresponds
to a user *(implied)*,

(vi)   relating the line ID information *("location
information" wherein "location information contains the
Line Identifier", see **D1**, sect. D.1, step 1)* to the

contract related identification information *("The S-CSCF verifies this location information with the location information obtained from the UPSF [User Profile Server Function]", see **D1**, sect. 4.4.1)* comprising an authentication based on a Network Attachment Subsystem NASS *("extending the successful authentication in the NASS layer to the service layer", see **D1**, sect. 4.4.1).*

7.2.2   The differences between the subject-matter of **claim 1** and what is known from documents **D1-D4** reside in that (differences marked by underlining):

   (A)   "the <u>access node</u> complements the request of the CPE by the line ID information <u>and a port ID information</u>"

   (B)   "the logical communication channel is established by using the line ID information <u>and the port ID information</u> as authentication information"

7.2.3   The subject-matter of **claim 1** is therefore novel.

7.3   Inventive step (Article 56 EPC)

   In the present context, *"line"* denotes the subscriber (e.g. copper) line and *"port"* the port of the access node (e.g. DSLAM) which the subscriber line is connected to. From this definition of *"line"* and *"port"*, it follows that there is a fixed relationship between the *"port ID"* and the *"line ID"*. Therefore, the board asserts that no technical effect is derivable from using the *"port ID"* in addition to the *"line ID"*, as defined in difference (B) and the second part of difference (A). Furthermore, there are no special properties caused by the *"access node"* complementing

the request of the CPE (see difference (A), first part), instead of the *"P-CSCF"* as known from the prior art documents **D1-D4** (see the passage cited with respect to feature (ii) above).

In the absence of a technical effect caused by either of these distinguishing features (A) and (B), no objective technical problem exists which could be used to support an inventive step.

7.4   Arguments of the appellant

7.4.1   The appellant argues that using the *"port ID"* in addition to the *"line ID"* would only be redundant if there were a fixed pairing of these identifiers known to all network components.

The board notes that claim 1 specifies the latter: *"wherein the line ID information and port ID information are known in a trusted manner to the telecommunication network"*, the telecommunication network comprising *"the access node (20) of the telecommunications network (5)"*. Hence, the board maintains its view that it is redundant to use the *"port ID"* in addition to the *"line ID"*.

7.4.2   Furthermore, the appellant argues that the invention deals with the case where the access node is unaware of the *"line ID"*.

The board considers that this case is not covered by the wording of claim 1, which mandates that *"the access node (20) complements the request of the CPE (10) by the line ID information"*. Hence, this argument does not relate to the invention as claimed and thus fails to convince the board as well.

7.4.3   In addition, the appellant argues that the invention
         would solve the problem of creating an inventory
         comprising the mapping between *"line ID"* and *"port ID"*
         "in a trusted manner". The access node provides *"line
         ID"* and *"port ID"* information during the initial set-
         up, thus facilitating that a reliable inventory is
         created in the telecommunication network (see the
         description from paragraph [0068] onwards).

         The board is not convinced by this argument since claim
         1 does not specify how the network gains its knowledge
         about *"the line ID information and port ID information"*
         that are *"known in a trusted manner"*. Since this
         knowledge could also be provided by a trusted source,
         claim 1 neither comprises nor implies the step of
         matching the then trusted entries with the actual line/
         port set-up, as alleged by the appellant.

7.4.4   The appellant also argues that by additionally
         considering the *"port ID"*, it is possible to make use
         of the port status and detect a mismatch between the
         "line ID" and the *"port ID"*, as disclosed in paragraphs
         [0079]-[0084] of the description. In particular, in
         case of a mismatch between *"port ID"* and *"line ID"*,
         provision of the telecommunications network service may
         be denied. According to the appellant, this solves the
         technical problem of verifying whether a service
         request is trustworthy.

         The board is not convinced by this argument either
         since the wording of claim 1 fails to recite any
         features relating to port status or to detecting such a
         mismatch. In particular, claim 1 does not refer to the
         denial of the telecommunications network service. Thus,
         the problem formulated by the appellant is not solved
         by the claimed subject-matter.

7.4.5   Moreover, the appellant contests that documents **D1-D4**
         constitute the closest prior art since a DSLAM would
         not be able to process the SIP messages disclosed in
         these documents.

         The board asserts that the wording of claim 1 is not
         limited to a DSLAM. Thus, the board concludes that no
         such incompatibility between the teaching of documents
         D1-D4 and the invention according to claim 1 exists.

7.4.6   Finally, the appellant argues in favour of an inventive
         step caused by the distinguishing feature (A), first
         part, by stating that this difference would cause the
         technical effect of increasing efficiency by avoiding
         data transfers and that the underlying technical
         problem was to increase the efficiency of the
         communication flow in the network.

         The board notes that this alleged technical effect is
         not credibly achieved and thus the underlying technical
         problem not solved. In the case of the access node
         (rather than the P-CSCF) complementing the request of
         the CPE by the *"line ID"* information and the *"port ID"*
         information, these identifiers are transmitted from the
         access node to the P-CSCF with each request message.
         This increases the amount of data transmitted rather
         than decreasing it as alleged by the appellant. As a
         consequence, this argument also fails to convince the
         board.

7.5   Consequently, the board considers that the subject-
         matter of **claim 1** is not inventive.

8.   Thus, the appeal is not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

A. Chavinier-Tomsic   A. Ritzka

Decision electronically authenticated