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Datasheet for the decision of 24 May 2018

Case Number: T 1863/13 - 3.5.05

Application Number: 06784851.5

Publication Number: 1894368

IPC: H04L12/56, H04L12/24

Language of the proceedings: EN

Title of invention:
METHOD AND APPARATUS FOR PROVIDING END-TO-END HIGH QUALITY SERVICES BASED ON PERFORMANCE CHARACTERIZATIONS OF NETWORK CONDITIONS

Applicant:
Alcatel-Lucent USA Inc.

Headword:
Performance-based routing/ALCATEL

Relevant legal provisions:
EPC Art. 56, 123(2)

Keyword:
Inventive step - (no)
Amendments - extension beyond the content of the application as filed (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
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Beschwerdekammern

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Case Number: T 1863/13 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 24 May 2018

Appellant: (Applicant)	Alcatel-Lucent USA Inc. 600-700 Mountain Avenue Murray Hill, NJ 07974 (US)
Representative:	Louis Pöhlau Lohrentz Patentanwälte Merianstrasse 26 90409 Nürnberg (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 5 April 2013 refusing European patent application No. 06784851.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division, posted on 5 April 2013, refusing European patent application No. 06784851.5 on the ground of lack of inventive step (Article 56 EPC) with regard to the disclosure of

D1: WO 2004/040423 in combination with

D2: WO 03/084159.

II. Notice of appeal was received on 12 June 2013 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 15 August 2013. The appellant requested that the decision be set aside and that a patent be granted based on the claims of a main request or any of auxiliary requests 1, 2 and 3, all requests as filed with the statement setting out the grounds of appeal. The claims of the main request were identical to the claims on which the decision was based. Oral proceedings were requested as an auxiliary measure.

III. A summons to oral proceedings was issued on 12 March 2018. In a communication issued on 16 March 2108, the board gave its preliminary opinion that the main request did not meet the requirements of Article 56 EPC having regard to the disclosure of D1 as closest prior art in combination with D2. The board further raised objections under Article 123(2) EPC against auxiliary requests 1 to 3.

IV. By letter of reply dated 25 April 2018, the appellant withdrew its request for oral proceedings and requested a *decision according to the state of the file* [sic]. Further, the appellant informed the board that it would not attend the scheduled oral proceedings.

V. Oral proceedings were held on 24 May 2018 in the absence of the appellant. The appellant requested in writing that the decision under appeal be set aside and that a patent be granted on the basis of the main request or any of auxiliary requests 1, 2 and 3, all requests as filed with the statement setting out the grounds of appeal dated 15 August 2013. After due deliberation on the basis of the written submissions, the decision of the board was announced at the end of the oral proceedings.

VI. Independent claim 1 according to the main request reads as follows:

"A method of improving service quality for a convergence enabled end-user device during a user session, comprising:
storing and updating one or more knowledge bases with network performance data;
establishing said user session between said convergence enabled end-user device and a destination node via a first group of network elements of a plurality of network elements;
measuring performance values associated with said session, wherein said performance values are measured from real-time performance metrics received from said first group of network elements; and
adapting pre-established and configured network routes associated with a service provider, in response to previous network conditions stored in the one or more

knowledge bases and said real-time measured performance values indicating degraded service quality for said user session."

Claim 1 of auxiliary request 1 reads as follows:

"A method of improving service quality for a convergence enabled end-user device during a user session, comprising:
at the end-user device, storing and updating one or more knowledge bases with network performance data;
establishing said user session between said convergence enabled end-user device and a destination node via a first group of network elements of a plurality of network elements;
at the end-user device, receiving measured performance values associated with said session, wherein said performance values are measured from real-time performance metrics received from said first group of network elements; and
at the end-user device, adapting network routes associated with a service provider, in response to previous network conditions stored in the one or more knowledge bases and said real-time measured performance values indicating degraded service quality for said user session."

Claim 1 of auxiliary request 2 reads as follows:

"A method of improving service quality for a convergence enabled end-user device during a user session, comprising:
at the end user device, initiating a user session between said convergence enabled end-user device and a destination node via a first group of network elements of a plurality of network elements;

at the end-user device, receiving measured performance values associated with said first group of network elements, said measured performance values including real-time performance metrics of said first group of network elements;
at the end-user device, in response to said measured performance values indicating a need to improve service quality for said user session by switching to a new path, determining an appropriate event for switching user session data traffic to said new path; wherein said user session data traffic is switched to said new path in accordance with said determined appropriate event."

Claim 1 of auxiliary request 3 reads as follows:

"A method of improving service quality for a convergence enabled end-user device during a user session, comprising:
at the end-user device, storing and updating one or more knowledge bases with network performance data of at least a portion of those network elements supporting user session traffic flow associated with said end-user device;
establishing said user session between said convergence enabled end-user device and a destination node via a first group of network elements of a plurality of network elements;
at the end-user device, receiving measured performance values associated with said session, wherein said performance values are measured from real-time performance metrics received from said first group of network elements; and
at the end-user device, in response to measured performance values indicating a need for improving service quality for said user session by switching to a

new network route, transmitting toward a service provider data indicative of a suggested one of a plurality of pre-defined network routes associated with the service provider."

Each request comprises further independent claims directed to a corresponding computer program (claim 9 of the main request, claim 15 of auxiliary requests 1 and 2, claim 8 of auxiliary request 3) and apparatus (claim 10 of the main request, claim 16 of auxiliary requests 1 and 2, claim 9 of auxiliary request 3).

Reasons for the Decision

1. Admissibility of the appeal

The appeal complies with Articles 106 to 108 EPC (cf. point II above) and is therefore admissible.

2. Non-attendance at oral proceedings

The appellant decided not to attend the scheduled oral proceedings and requested a *decision according to the state of the file* [sic]. The board was thus in a position to announce a decision, based on the appellant's written case, at the end of the oral proceedings.

3. Main request - Article 56 EPC

3.1 Prior art

D1 discloses a system and method for controlling the routing of data between a source and a destination over multiple connected communication networks (see page 12,

lines 2 to 6, and Figure 1C). Real-time data network performance characteristics are monitored on the path of network elements between source and destination (see paragraphs [0018] and [0059], and page 42, lines 18 to 20) and compared with the requirements of a policy (see paragraphs [0061] and [0068]). If the requirements are not fulfilled, the routing is switched to a second, alternative path (see paragraph [0063]). The flow monitoring can be distributed over the network elements (see page 14, lines 7 to 10).

D2 discloses traffic managers, dispersed throughout an IP network, which receive traffic reports from a traffic reporter (see page 8, lines 4 to 13). The reports contain information about network nodes and the traffic between them (see page 36, lines 9 to 16). The information is used by the traffic managers to direct traffic through the most efficient route (see from page 36, line 19, to page 37, line 5). Moreover, a database is maintained at each traffic manager for storing history of measured network traffic conditions. The routing is first based on the historical measurements and then adapted based on the real measured traffic conditions.

3.2 The board holds that the wording "adapting pre-established and configured network routes" in claim 1 has to be construed for inventive step assessment, based on the description (see in particular page 14, lines 8 to 10), as meaning "using pre-established and configured network routes".

3.3 D1 represents the closest prior art since it relates to a scheme for improving service quality during a session between an end-user device and a destination node connected through network elements.

The board agrees in substance with the finding of the examining division (see Reasons II-1 and II-1.1) that the differences between the subject-matter of claim 1 and the disclosure of D1 are that:

(a) the routing is based not only on real-time measured performance values but also on previous network conditions stored in knowledge bases, and
(b) the routing uses pre-established and configured network routes associated with a service provider.

The combination of features (a) and (b) does not provide any surprising effect beyond the mere addition of the respective technical effects, namely the choice of route based on present and past network conditions and the choice of route from a set of predefined routes. Features (a) and (b) are thus considered as juxtaposed in the claims.

Feature (b) is immediately derivable from D1 since the network paths, or routes, between a source node and a destination node have to be monitored (see paragraph [0019]). The skilled person would obviously restrict the paths to be monitored in D1 to predefined ones in order to limit the computing load in the network.

The objective technical problem solved by feature (a) can be formulated as how to optimise the routing. The skilled person seeking to solve this problem would consider document D2, which relates to a system for routing internet traffic (see point 3.1 above). In particular, the skilled person would realise that it could readily apply the teaching of D2 in respect of using the stored historical network performance data for routing present traffic (see D2, page 36, lines 8

to 21, and claim 1) to the scheme of D1 in order to efficiently route the traffic.

3.4 The appellant argued in writing that D1 was restricted to monitoring performance of characteristics associated with data flow through core-network routers, i.e. between ingress nodes and egress nodes. In the board's view, however, D1 does not exclude that either the first point or the second point mentioned in paragraph [0018] is an end-user device. Although it may be admitted that the illustrative embodiment disclosed in relation to Figure lE deals with egress and ingress nodes, D1 discloses also in Figure 1C a typical network in which the routing scheme of D1 may apply, comprising, *inter alia*, end-user devices "USER1" and "USER2" as source and destination which can be connected by one or more paths through the network (see paragraph [0052]). Further, the features defining the routing using different network routes in the independent claims of the main request are not specific to the nature of the end-user device and of the destination node connected by these routes.

The appellant further argued in writing that D2 merely pertained to establishing geographic information associated with traffic. The board is not convinced by this argument since D2 clearly discloses that the measures of network conditions saved in the databases comprise measures related not only to the geographical locations of nodes but also to the network performance, such as for instance the latency times and speeds between nodes (see D2, page 36, lines 9 to 14).

3.5 For these reasons, the board judges that the subject-matter of claim 1 does not involve an inventive step

having regard to the disclosure of D1 in combination with D2.

4. Auxiliary request 1 - Article 123(2) EPC

With respect to claim 1 of the main request, claim 1 defines additionally, *inter alia*, that the step of adapting the network routes is performed at the end-user device.

There is no support for this additional feature in the application documents as originally filed. In support of the amendments, the appellant merely quoted some passages of the description without addressing in detail their technical teaching. None of these passages however describes that the end-user device alone adapts the network routes. Rather, the description states that the routing adaptation is performed jointly by the end-user and other components of the network, namely other network nodes (see page 9, lines 6 to 9), the network data centre (see page 13, lines 31 to 33; page 14, lines 1 to 5, and lines 22 to 29; page 15, lines 14 to 17; page 19, lines 25 to 27; page 20, lines 30 to 34; page 21, lines 32 to 34; page 22, lines 1 to 11), or performance management agents of other network components (see page 14, lines 5 to 8).

Therefore, the board judges that claim 1 does not meet the requirements of Article 123(2) EPC.

5. Auxiliary request 2 - Article 123(2) EPC

Claim 1 comprises the features that the end-user device determines an "appropriate event" for switching user-session data traffic to a new path. An "appropriate switch-over event" determined by the end-user device is

mentioned on page 11, line 34, of the description. Figure 3 and the corresponding passages, where this "event" should, according to page 12, line 1, be discussed, do not mention any "appropriate event" but rather describe that the switching is agreed between the data centre and the end-user device and initiated by the data centre (see from page 14, line 21 to page 15, line 4).

In the board's judgement there is therefore no support in the application documents as originally filed for the above-mentioned feature, and claim 1 does not meet the requirements of Article 123(2) EPC.

6. Auxiliary request 3 - Article 123(2) EPC

Claim 1 comprises the feature that the end-user device transmits to the service provider data indicative of a suggested one of a plurality of predefined network routes associated with the service provider.

There is no support for this feature in the application documents as originally filed, in particular in the passages quoted by the appellant in that respect. The description does mention predefined network routes associated with the service provider (see page 14, lines 8 to 10) which can be selected by the performance management agents in network nodes and in the end-user device for switching. There is however no mention in the description that data indicative of a route chosen from these predefined routes is transmitted from the end-user device to the service provider.

Therefore claim 1 does not meet the requirements of Article 123(2) EPC.

7. Conclusion.

Neither the main request nor one of the auxiliary requests is allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated