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**Datasheet for the decision
of 8 October 2009**

Case Number: T 1932/07 - 3.5.03

Application Number: 98908545.1

Publication Number: 0962087

IPC: H04M 3/00

Language of the proceedings: EN

Title of invention:

Apparatus and methods enhancing call routing to and within
call-centers

Applicant:

Genesys Telecommunications Laboratories, Inc.

Opponent:

-

Headword:

Call-center routing/GENESYS

Relevant legal provisions:

EPC Art. 56

RPBA Art. 15(3)

Relevant legal provisions (EPC 1973):

-

Keyword:

"Inventive step (main and auxiliary requests) - no"

Decisions cited:

-

Catchword:

-



Case Number: T 1932/07 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 8 October 2009

Appellant: Genesys Telecommunications Laboratories, Inc.
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Daly City, CA 94014 (US)

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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 1 June 2007
refusing European patent application
No. 98908545.1 pursuant to Article 97(1) EPC
1973.

Composition of the Board:

Chairman: A. S. Clelland
Members: T. Snell
M.-B. Tardo-Dino

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 98908545.1 with international publication number WO-A-98/37687.

The refusal was based on the ground that the subject-matter of claims 1 and 3 did not meet the requirement of inventive step pursuant to Article 52(1) in combination with Article 56 EPC with respect to the disclosure of the following document:

D1: US-A-5546452

- II. The appellant filed a notice of appeal against the above decision. In the statement of grounds the appellant requested that the impugned decision be set aside and a patent granted on the basis of the claims of a new main request (claims 1-3), or, as an auxiliary request, on the basis of the claims refused by the examining division.

Oral proceedings were conditionally requested.

- III. In a communication accompanying a summons to oral proceedings the board gave a preliminary opinion in which, *inter alia*, an objection pursuant to Article 52(1) in combination with Article 56 EPC was raised against claims 1 and 3 of both requests. In addition to D1, the board referred to the following document which claims priority from D1, but which includes some further embodiments:

D3: WO-A-96/27254

IV. In response to the board's communication, the appellant filed claims of new main and auxiliary requests to replace the claims on file, together with supporting arguments.

V. Oral proceedings were held on 8 October 2009. The start of the proceedings was delayed for one hour whilst the board attempted to contact the appellant's representative by telephone. The proceedings then took place in the absence of the appellant. In a fax letter received later on the same day, but after the proceedings had been closed, the appellant indicated that it would not attend the oral proceedings.

On the basis of the written submissions, the appellant requested that the decision be set aside and a patent granted on the basis of claims 1-3 of either the main request or the auxiliary request, both filed on 8 September 2009.

After due deliberation, the board's decision was announced at the end of the oral proceedings.

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

"A call routing system, comprising:
a call center (121; 122) having at least one first telephony switch (123; 124) monitored and controlled by a first CTI processor (223; 224);
a plurality of agent workstations (131, 132; 133, 134) each having a telephone (136; 140, 142) connected to

the at least one telephony switch (123; 124), to which the telephony switch may connect an incoming call (107);

a statistical server (340) accessible to the first CTI processor (223; 224), wherein agent status is monitored and recorded;

at least one telephony trunk (105; 106) connecting the at least one first telephony switch (123; 124) to a second telephony switch (101) in a PSTN (100), the second telephony switch (101) acting as a SCP in the PSTN, for receiving and redirecting calls;

a second CTI processor (208) connected to and monitoring and controlling the second telephony switch SCP (101); and

a high-speed digital link (210; 211) connecting the first CTI processor (223; 224) in the call center (121; 122) and the second CTI processor (208) in the PSTN (100);

wherein the first CTI processor (223; 224) in the call center (121; 122) is arranged to transmit information about agent status accessed from the statistical server (340) in the call center (121; 122) to the second CTI processor (208) connected to the SCP (101), the second CTI processor (208) monitors the SCP (101) for a call received by the SCP, selects a final destination for the call, being a telephone (136; 140, 142) at an individual one of the agent workstations (131, 132; 133, 134) in the call center (121; 122), from the statistical server information transmitted from the first CTI processor (223; 224), controls the SCP (101) to connect the call to the first telephony switch (123; 124) at the call center (121; 122), and transmits the final destination selected for the call via the high-speed digital link (210; 211) to the first CTI

processor in the call center, which controls the first telephony switch (123; 124) to connect the call to the telephone at the individual agent workstation selected."

VII. Claim 3 of the main request reads as follows:

"A method for routing a call to a call center (121; 122) having at least one first telephony switch (123; 124) monitored and controlled by a first CTI processor (223; 224), comprising steps of:

- (a) receiving a call (107) at a SCP telephony switch (101) in a PSTN (100), the SCP monitored and controlled by a second CTI processor (208) connected to the SCP;
- (b) accessing agent status information by the second CTI processor (208), the status information transmitted to the second CTI processor (208) by the first CTI processor (223; 224) located in a call center (121; 122) remote from the SCP and accessing the status information from a stat-server (340) in the call centre (121; 122), the first CTI processor (223; 224) connected to the second CTI processor (208) by a high-speed data link (210; 211) separate from any telephony trunk, and also connected to the first telephony switch (123; 124) in the call center (121; 122), the first telephony switch in turn connected to telephones (136; 140, 142) at individual agent workstations (131, 132; 133, 134) in the call center;
- (c) selecting a final destination for the call at a telephone at an agent workstation by the second CTI processor (208) based in [sic] the transmitted agent status information;
- (d) controlling the SCP (101) by the second CTI processor (208) to connect the call to the first

telephony switch (123; 124) located in the call center (121; 122);

(e) transmitting the final destination to the first CTI processor (223; 224) by the second CTI processor (208) via the high-speed data link (210; 211); and

(f) controlling the first telephony switch (123; 124) to connect the call to the telephone (136; 140, 142) at the final destination."

VIII. Claim 1 of the auxiliary request differs from that of the main request in that the following wording is added to the end of the claim:

"whereby transactions at the first telephony switch are monitored at the first CTI processor (223) and shared on a continuing basis with the second CTI processor (208)".

Claim 3 is amended correspondingly.

Reasons for the decision

1. *Procedural matters*

1.1 The board appointed oral proceedings in accordance with Article 116(1) EPC at the request of the appellant. Having verified that the appellant was duly summoned and, after attempting to establish by telephone whether it would be represented at the oral proceedings, the board decided to continue the oral proceedings in the appellant's absence (Rule 115(2) EPC).

1.2 In accordance with Article 15(3) RPBA, the board shall not be obliged to delay any step in the proceedings, including its decision, by reason only of the absence at oral proceedings of any party duly summoned who may then be treated as relying only on its written case.

1.3 The board's reasoning corresponds essentially to that of the examining division as set out in the impugned decision, which is based on the disclosure of D1. Although the board argued partly on the basis of D3 (which claims priority from D1) in the communication accompanying the summons to oral proceedings, the two documents are to a large extent identical, and the appellant could therefore have expected that the board would take into consideration at the oral proceedings both D1 and D3, all the more so since the appellant commented extensively on the issue of inventive step with respect to the disclosure of D1 both in the statement of grounds and in the reply to the summons to oral proceedings. The section below on "claim interpretation" responds to a new argument raised in the reply to the board's communication, whereby, in respect of inventive step, the appellant draws attention to an "independent high speed data link". Hence, the appellant could also have expected that the board would deal with this argument in the oral proceedings. The present decision is therefore in compliance with Article 113(1) EPC.

2. *Claim interpretation*

Claim 1 of both the main and auxiliary requests includes a "high-speed digital link (210; 211) connecting the first CTI processor (223; 224) in the

call center (121; 122) and the second CTI processor (208) in the PSTN (100)". Independent method claim 3 of each request includes a corresponding method step.

However, in the application as originally filed, this link is not referred to explicitly as "high-speed", this term being used only for the link between each call centre switch and its associated CTI processor (cf. page 9, lines 1-3). As regards the link connecting the first CTI processor with the second CTI processor, it is merely suggested on page 12, lines 9-16 that instead of TCP/IP, another protocol (eg UDP), or other methods, might be used to provide "better and faster communication". Hence the board has doubts that the "high-speed digital link" included in the independent claims is based on the application as originally filed (cf. Article 123(2) EPC). Moreover, "high-speed" is a relative term which does not clearly define the scope of protection sought (cf. Article 84 EPC).

In the following discussion of inventive step, the term "high-speed" is consequently disregarded.

3. *Inventive step (main request)*

- 3.1 The present invention concerns call routing to call centres. The application as filed (cf. page 2, line 26 - page 4, line 7) describes the technical background essentially as follows: In call centres, several agents handle telephone communication with callers. Each agent is typically assigned to a telephone connected to a central switch, which is in turn connected to the public-switched telephone network (PSTN). Conventionally, the central switch may be of several

types, *inter alia* a private branch exchange (PBX) or an automatic call distributor (ACD). Routing of a call to a call centre may involve connecting the caller with a service control point (SCP) [NB: a standard element of an "Intelligent Network"] which is adapted to pre-process incoming calls and forward them to the appropriate call centre. The switch at the call centre may incorporate enhanced computer processing capability, known as "computer telephony integration" (CTI).

3.2 The board considers that document D1 represents the closest prior art. D1 (cf. Figs. 1-3) discloses a call routing system of the above type, in which a call centre ("agent system") has "central switches" in the form of a PBX 56 and an ACD 60 for connecting incoming calls to individual agents (cf. Fig. 3; the individual agents are not shown but are implicit). The PBX 56 or the ACD 60 is deemed to be a "first telephony switch" using the terminology of claim 1. Public networks 12, 14 and 16 of Fig. 1 implicitly comprise switches for routing calls from a caller to one of the agent systems (call centres). One of these switches is deemed to be a "second telephony switch" using the terminology of claim 1.

3.3 Using the language of claim 1, D1 discloses a call routing system, comprising (features not comprised in D1 are indicated by square brackets):

a call center ("agent system" 24, 26, 28) having at least one first telephony switch (Fig. 3: 56 and 68) monitored and controlled by a first CTI processor ("local controller router" 70);

a plurality of agent workstations each having a telephone connected to the at least one telephony switch (56, 68) to which the telephony switch may connect an incoming call (as stated above, this is an implicit feature of a call centre);

a statistical server accessible to the first CTI processor, wherein agent status is monitored and recorded (cf. col. 7, lines 26-29; the functionality of the statistical server is integrated into the local controller 70);

at least one telephony trunk (Fig. 1: 12, 14, 16) connecting the at least one first telephony switch (Fig. 3: 56, 60) to a second telephony switch in a PSTN (as explained above, the second telephony switch is implicitly comprised in one of the public networks 12, 14 and 16), the second telephony switch acting [as a SCP] in the PSTN, for receiving and redirecting calls;

a second CTI processor (Fig. 1: "primary central controller" 30) connected to and monitoring and controlling the second telephony switch [SCP]; and a [high-speed] digital link ("wide area network"; Fig. 2: 44, 46; Fig. 3: 72) connecting the first CTI processor (70) in the call center and the second CTI processor in the PSTN (cf. col. 5, lines 18-22);

wherein the first CTI processor in the call center is arranged to transmit information about agent status accessed from the statistical server in the call center to the second CTI processor [connected to the SCP] (cf. col. 7, lines 26-32), the second CTI processor monitors [the SCP] for a call received [by the SCP] (cf. col. 4

line 67 - col. 5, line 6), selects a final destination for the call, being a telephone at an individual one of the agent workstations in the call center, from the statistical server information transmitted from the first CTI processor (cf. col. 5, lines 34-66), controls the [SCP] to connect the call to the first telephony switch at the call center (cf. col. 5, lines 39-45), and transmits the final destination selected for the call via the [high-speed] digital link to the first CTI processor in the call center, which controls the first telephony switch to connect the call to the telephone at the individual agent workstation selected (cf. col. 11, lines 32-47).

3.4 The subject-matter of claim 1 differs from the disclosure of D1 essentially in that, for the purposes of routing a call to an agent workstation, the second telephony switch acts [additionally] as a service control point (SCP), the SCP being controlled by the second CTI processor, whereas in D1 the routing functionality is carried out by a central processor (ie central controller 30) sited remotely from the second telephony switch and linked to it via a signalling network (eg an SS7 network; cf. D1, col. 5, lines 6-9). The only remaining difference, which is that the digital link connecting the first and second CTI processors is "high-speed", is as explained above not taken into account.

3.5 As already mentioned, a service control point (SCP), is part of the standard infrastructure of an "Intelligent Network". In a conventional Intelligent Network, switches of the PSTN monitor incoming calls to determine whether a special call processing is required

(eg 0800 calls). If such a call is recognised, call processing is diverted to a service control point SCP (eg via an SS7 signalling connection). The SCP comprises a call routing function for determining the final destination, and means for controlling the network to route the call accordingly. Since the "central controller" of D1 carries out the same tasks, it is in the board's view equivalent to an SCP, even if not explicitly referred to as such. With regard to the siting of SCPs in an Intelligent Network, it is in the board's view part of the common knowledge of the skilled person that an SCP may be embodied as a central node sited remotely from the switches of the PSTN (ie, as in D1), or may be sited at a switch of the PSTN, as is the case for the presently claimed subject-matter. It is also considered self-evident to the skilled person that any processing functionality may be carried out by a single entity or by two or more processing entities working together. In this light, the structure disclosed in D1 which makes use of a single centrally-sited control node differs in only minor respects from the claimed arrangement using a switch-based SCP controlled by a CTI processor. These minor differences in the board's view concern routine design alternatives which do not contribute to inventive step, and the board notes that that the appellant has not provided any arguments to the contrary.

The board concludes that the subject-matter of claim 1 does not involve an inventive step having regard to the disclosure of D1 in combination with common general knowledge (Articles 52(1) and 56 EPC).

3.6 The board understands the appellant's main argument opposing this view to be that, in accordance with the invention, "agent-level routing" is carried out, whereby the call is routed not to an agent "workgroup" within the call centre (ie a group of agents all having the same specialisation), as allegedly the case in D1, but directly to an individual agent. In the appellant's view, the term "agent" as used in D1 means an "agent system", ie a switch or agent workgroup, but not an individual customer agent. Consequently, in D1 the final routing to the individual agents of the workgroups is performed by routing intelligence in the call centre. In contrast, according to the invention, the SCP is provided with information about individual agent status instead of only switch status or workgroup information. Hence, the SCP is able to route calls to an individual agent without requiring routing intelligence at the call centre.

On the basis that D1 discloses routing to "agent systems" rather than individual agents, the appellant submits that D1 fails to disclose the following features of claim 1 (referred to by the appellant in the statement of grounds as features (c), (g), (h) and (i)):

"(c) a statistical server (340) accessible to the first CTI processor (223; 224), wherein agent status is monitored and recorded";

"(g) wherein the first CTI processor (223; 224) in the call center (121; 122) is arranged to transmit information about agent status accessed from the statistical server (340) in the call center (121; 122)

to the second CTI processor (208) connected to the SCP (101)";

"(h) the second CTI processor (208) monitors the SCP (101) for a call received by the SCP, selects a final destination for the call, being a telephone (136; 140, 142) at an individual one of the [telephones at the] agent workstations (131, 132; 133, 134) in the call center (121; 122), from the statistical server information transmitted from the first CTI processor (223; 224)";

"(i) controls the SCP (101) to connect the call to the first telephony switch (123;124) at the call center (121; 122), and transmits the final destination selected for the call via the high-speed digital link (210; 211) to the first CTI processor in the call center, which controls the first telephony switch (123; 124) to connect the call to the telephone at the individual agent workstation selected".

- 3.7 The board is however not convinced by the appellant's argument. In the board's view, "agent-level routing" is disclosed in D1 at column 5, lines 60-66, where it is stated that "Routing engine 48 uses this data to calculate the optimal way to route calls in the system by applying to this data conventional optimization algorithms and/or strategies known to those skilled in the art, including but not limited to routing the call to the highest skilled and longest available (i.e. longest inactive) agent in a workgroup" (board's underlining). Although the appellant apparently concedes that the term "agent" as used in this one passage does mean an individual customer agent, it is

argued that this sentence is a "throwaway line" which does not lead to the claimed invention, since the optimization algorithms are referred to as "conventional", ie can only be related to the conventional method of routing to workgroups. However, in the board's view, this passage is not a throwaway line, but is consistent with further references to agent-level routing. For example, it is stated in D1 at column 7, lines 25-35 that the status information gathered by the local controller and transmitted to the central controller concerns "individual agents". Further, in the passage of D1 at column 11, lines 33-47, which refers explicitly to the embodiment of Fig. 3, it is disclosed that "the primary central controller ... may be used to directly control distribution of calls [within a PBX or ACD]". Furthermore, even if for the sake of argument the appellant's point were valid, the board observes that a "workgroup" in its simplest form may have only a single member. In this case, the call would be routed directly to the individual agent and the agent system status information would also concern only that agent. It is also noted that in D1, agents may be associated with a PBX as well as an ACD, and conventionally in a PBX there is no intervening "workgroup" level between the switch and the agent telephones. Therefore the board has no doubt that the skilled person would derive the concept of agent-level routing from the disclosure of D1.

- 3.8 The appellant's main remaining argument is that D1 "fail[s] to teach the presence of two CTI processors, one at the call centre and one in the network (SCP), connected by a high speed data link, and working in tandem to route calls to agents at the network level".

The appellant submits that "the importance and purpose of incorporating two CTI processors structurally arranged as claimed in the independent claims, is to provide a much more accurate real time status of call load to call centres and individual agents on a transaction by transaction basis and via an independent high speed data link. ... D1 ... utilizes one central controller making routine decisions for a network switch based upon dated, historical information and periodically reported agent status: The primary advantage of the agent level routing of the present invention over the prior art is that the invention as presently claimed greatly reduces the occurrence of mis-routing. The central control of D1 ... is a single hub for all status information and control signalling between components of the system. When the central controller receives a request for a reject call [NB: the board understands this to mean a call requiring special processing] from the network and makes a routing decision in D1 ..., by the time the call actually reaches the agent station conditions could have easily changed because of the latency of communication and controlling in D1 ..., flowing through one central controller."

- 3.9 The board however observes that the central controller of D1 is provided with real-time status messages from the agent systems and makes routing decisions based on this data as well as on historical data (cf. column 5, lines 45-56). Moreover, the agent system data is obtained from individual agents indicating, *inter alia*, whether they are active (cf. column 7, lines 26-28). As regards the presence of a single central controller in D1, it is noted that only a single SCP is mentioned in

claim 1. Finally, as already stated, the high-speed link between the CTI processors is not taken into account for inventive step. In any case, the board observes that D1 discloses an independent data link for communication between the agent system and the central controller in D1, using preferably TCP/IP, which is the same protocol proposed in the present invention. The board cannot therefore identify any reason for a difference in latency between the system as claimed and that disclosed in D1, or any reason as to why a more accurate real-time status is available. Hence, the board is not convinced by this argument either.

3.10 The above points apply *mutatis mutandis* to independent method claim 3.

4. *Inventive step (auxiliary request)*

Claims 1 and 3 of the auxiliary request comprise the additional limitation that "transactions at the first telephony switch are monitored at the first CTI processor (223) and shared on a continuing basis with the second CTI processor (208)". In other words, transactions at the call centre are reported on a continuing basis to the SCP. According to the appellant, the latency of the system is thereby reduced with respect to the D1 system. However, as noted by the board above, the D1 system makes use of real-time data from individual agents (cf. point 3.9 above), which is considered to be effectively the same as sharing transaction data "on a continuing basis". Hence this amendment adds nothing of substance to the claims of the main request.

The appellant also comments that "Actual activity at all call centres is reported to all SCPs in the system rather than to a central controller". However, since claims 1 and 3 of the auxiliary request mention only a single call centre and a single SCP, this argument has no relevance to inventive step.

The board therefore concludes that claims 1 and 3 of the auxiliary request do not comply with the requirement of inventive step either (Articles 52(1) and 56 EPC).

5. In view of the above, neither the appellant's main request nor the auxiliary request is allowable. The appeal must therefore be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland