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Datasheet for the decision of 21 January 2014

Case Number: T 1954/10 - 3.5.03

Application Number: 01307770.6

Publication Number: 1189417

IPC: H04M3/42

Language of the proceedings: EN

Title of invention:
Telephone independent provision of speech recognition during dial tone and subsequent call progress states

Applicant:
Mitel Knowledge Corporation

Headword:
Communication system using speech control/MITEL

Relevant legal provisions:
EPC Art. 56, 84

Keyword:
Inventive step - main request, first auxiliary request Ia and second auxiliary request (no)
Clarity - first auxiliary request Ib (no)

Decisions cited:

Catchword:

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Case Number: T 1954/10 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 21 January 2014

Appellant: (Applicant)	Mitel Knowledge Corporation 350 Legget Drive, P.O. Box 13089 Kanata, Ontario K2K 2W7 (CA)
Representative:	Naismith, Robert Stewart Marks & Clerk LLP Aurora 120 Bothwell Street Glasgow G2 7JS (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 27 April 2010 refusing European patent application No. 01307770.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: F. van der Voort
Members: K. Schenkel
R. Cramer

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division refusing European patent application No. 01307770.6, with publication number EP 1 189 417.

II. The reasons given for the refusal were that the subject-matter of claim 1 of a main, a first and a second auxiliary request did not involve an inventive step (Articles 52(1) and 56 EPC) having regard to the disclosure of:

D1: US 4 763 350 A

and taking into account the general common knowledge in the field of telecommunications,

and that the subject-matter of claims 1 of third and fourth auxiliary requests extended beyond the content of the application as filed (Article 123(2) EPC).

III. With the statement of grounds of appeal the appellant filed three sets of claims and submitted arguments in support. Oral proceedings were conditionally requested.

IV. In a communication annexed to a summons to oral proceedings the board informed the appellant that the board understood the appellant to be requesting that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 8 of a main request as filed with the statement of grounds of appeal or, in the alternative, on the basis of claims 1 to 7 of a first auxiliary request (hereinafter auxiliary request Ia), or on the basis of claims 1 to 7 of either an amended first auxiliary request (auxiliary request Ib) or a second auxiliary request, both as

filed with the statement of grounds of appeal. Further, the board raised, without prejudice to its final decision, objections under Article 52(1) EPC in combination with Article 56 EPC (lack of inventive step) in respect of the subject-matter of claims 1 of the main request, auxiliary request Ia and the second auxiliary request, and an objection under Article 84 EPC against claim 1 of auxiliary request Ib. Reference was made to document D1 and the following document cited in the European search report:

D5: US 5 999 611 A.

V. The appellant did not file a substantive response but merely informed the board that there would be no attendance by or on behalf of the applicant at the scheduled oral proceedings.

VI. Oral proceedings were held on 21 January 2014 in the absence of the appellant.

In accordance with the written submissions the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 8 of the main request as filed with the statement of grounds of appeal or, in the alternative, on the basis of claims 1 to 7 of the first auxiliary request as filed with the letter dated 16 February 2010 (auxiliary request Ia), or on the basis of claims 1 to 7 of either the amended first auxiliary request (auxiliary request Ib) or the second auxiliary request, both as filed with the statement of grounds of appeal.

At the end of the oral proceedings, after deliberation, the board's decision was announced.

VII. Claim 1 of the **main request** reads as follows:

1. A communication system utilizing speech control of operations, comprising:

a plurality of telephone devices (5);

a plurality of Speech Recognition Engine, SRE, (1) resources for providing indications of speech from spoken voice at said telephone devices; and

a call control (3) for controlling operation of said telephone devices in accordance with predetermined call states by automatically allocating one of said SRE resources in response to one of said telephone devices initiating a call origination state, de-allocating said one of said SRE resources in response to initiation of a change from said origination state to a further predetermined call state and dynamically allocating and de-allocating one or more of said one or further ones of said SRE resources in response to additional changes in said predetermined call states, whereby said SRE resources provide said indications to said call control for initiating changes in said call states.

Claim 1 of **auxiliary request Ia** reads as follows

1. A communication system utilizing speech control of operations, comprising:

a plurality of telephone devices (5);

a plurality of Speech Recognition Engine, SRE, (1) resources for providing indications of speech from spoken voice at said telephone devices;

a plurality of Dual Tone Multifrequency, DTMF, receivers, distinct from said plurality of SRE resources, for providing indications of DTMF digits dialed at said telephone devices; and

a call control (3) for controlling operation of said telephone devices in accordance with predetermined call states by automatically allocating one of said SRE resources and one of said DTMF receivers in response to one of said telephone devices initiating a call origination state, de-allocating said one of said SRE resources and said one of said DTMF receivers in response to initiation of a change from said origination state to a further predetermined call state and dynamically allocating and de-allocating one or more of said one or further ones of said SRE resources and DTMF receivers in response to additional changes in said predetermined call states, whereby said SRE resources and DTMF receivers provide said indications to said call control for initiating changes in said call states.

Claim 1 of **auxiliary request Ib** reads as follows:

1. A communication system utilizing speech control of operations, comprising:

a plurality of telephone devices (5);

a plurality of Speech Recognition Engine, SRE, (1) resources for providing indications of speech from spoken voice at said telephone devices;

a plurality of Dual Tone Multifrequency, DTMF, receivers, distinct from said plurality of SRE resources, for providing indications of DTMF digits dialed at said telephone devices; and

a call control (3) directly connected to each of said SRE resources and to each of said DTMF receivers, for controlling operation of said telephone devices in accordance with predetermined call states by automatically allocating one of said SRE resources and one of said DTMF receivers in response to one of said telephone devices initiating a call origination state, de-allocating said one of said SRE resources and said one of said DTMF receivers in response to initiation of a change from said origination state to a further predetermined call state and dynamically allocating and de-allocating one or more of said one or further ones of said SRE resources and DTMF receivers in response to additional changes in said predetermined call states, whereby said SRE resources and DTMF receivers provide said indications to said call control for initiating changes in said call states.

Claim 1 of the **second auxiliary request** reads as follows:

1. A communication system utilizing speech control of operations, comprising:

a plurality of telephone devices (5);

a plurality of Speech Recognition Engine, SRE, (1) resources for providing indications of speech from spoken voice at said telephone devices;

a plurality of Dual Tone Multifrequency, DTMF, receivers, distinct from said plurality of SRE resources, for providing indications of DTMF digits dialed at said telephone devices; and

a call control (3) for controlling operation of said telephone devices in accordance with predetermined call states by automatically allocating one of said SRE resources and one of said DTMF receivers in response to one of said telephone devices initiating a call origination state, de-allocating said one of said SRE resources in response to receipt of a first DTMF digit from said one of said DTMF receivers, and de-allocating said one of said DTMF receivers in response to initiation of a change from said origination state to a further predetermined call state and dynamically allocating and de-allocating one or more of said one or further ones of said SRE resources and DTMF receivers in response to additional changes in said predetermined call states, whereby said SRE resources and DTMF receivers provide said indications to said call control for initiating changes in said call states.

Reasons for the Decision

1. Procedural matters

The present decision is based on objections under Article 52(1) EPC in combination with Article 56 EPC and an objection based on Article 84 EPC. These objections had already been raised in the board's communication. The appellant had the opportunity to present its comments on these objections. However, no substantive submissions in response to the objections raised were filed. Further, in deciding not to attend the oral proceedings, the appellant chose not to make use of the opportunity to comment at the oral proceedings on any of the objections but, instead, chose to rely on arguments as set out in the statement of grounds, which the board duly considered. Under these circumstances, the board was in a position to give a decision in accordance with Article 113(1) EPC.

2. *Main request* - inventive step

2.1 D1 discloses, using the language of claim 1, a communication system utilizing speech control of operations and comprising a plurality of telephone devices (col. 2, l. 14-16, and Fig. 1), a speech recognition engine (SRE) resource ("voice controlled dial signal receiver unit SPWE", col. 2, l. 28-29 and 37-39, and Fig. 2) for providing indications of speech from spoken voice at said telephone devices (col. 1, l. 59-66), and a call control for controlling operation of said telephone devices in accordance with predetermined call states (col. 2, l. 20-24) by automatically allocating said SRE resource in response to one of said telephone devices initiating a call origination state (col. 3, l. 8-13) and de-allocating said SRE resource in response to initiation of a change from said origination state to a further predetermined call state (col. 3, l. 66-68), in which the SRE resource provides said indications to said call control for initiating changes in said call states (col. 3, l. 41-58).

2.2 The subject-matter of claim 1 of the main request thus differs from the communication system disclosed in D1 in that according to claim 1:

i) the system includes a plurality of speech recognition engine (SRE) resources; and

ii) the call control is capable of dynamically allocating and de-allocating one or more of said one or further ones of said SRE resources in response to additional changes in said predetermined call states.

2.3 Starting out from D1 the technical problem to be solved may be seen in extending the voice control service

offered to the users of the telephone devices. This was not contested by the appellant. The formulation of this problem does not contribute to an inventive step, since improving the capabilities of an existing service was at the priority date a common goal for a person skilled in the art.

2.4 Re. feature i): It would have been obvious for the person skilled in the art to provide multiple speech recognition engine (SRE) resources in order to extend the voice control service to more than one user at the same time. This was not contested by the appellant.

2.5 Re. feature ii): The person skilled in the art, when faced with the above-mentioned problem, would consider document D5, since this document relates to a communication system utilizing speech control of operations for various purposes (see the abstract).

More specifically, D5 discloses that after a subscriber goes off-hook, an SRE resource ("personal agent processor" or "agent" (col. 3, l. 23-29, and Figs. 1 and 3)) is allocated (col. 14, l. 53-55). After primary signalling, i.e. detecting information about a called party (col. 7, l. 34-37), the agent is placed on standby or drops off, i.e is de-allocated, (col. 14, l. 55-57) and a regular call processing occurs, resulting in the called party being called. As to the further progress of the call, the agent may be re-invoked (col. 14, l. 57-58, and col. 15, l. 5-6). For example, after a call has been placed and the called party's line does not answer, the agent will advise the subscriber accordingly and offer him the possibility of performing another task (col. 15, l. 37-39). This, in the board's view, involves the automatic allocation of the agent for speech recognition for a second time, i.e. after an

initial allocation for receiving the primary signalling, in which determining that a called party does not answer implies a change of the call state.

Further, D5 discloses a telephone switching center with a call controller, line circuits, trunk circuits and a switching network, the call controller controlling the other components to provide communication paths between telephone stations (Fig. 1 and col. 7, l. 17-22). The telephone switching center is connected to the telephone devices and the personal agent processor (Figs. 1, 2a and 3, col. 6, l. 57-61) and may couple the personal agent processor to a line circuit which in turn is connected to a telephone device (Figs. 1, 2a and 3, col. 8, l. 29-32 and col. 10, l. 43-47). Hence, the operation of the telephone devices and the allocation and de-allocation of the personal agent processor is controlled by the telephone switching center. It is implicit that this occurs in accordance with predetermined call states.

In the board's view, the telephone switching center disclosed in D5 may therefore be regarded as the call control for controlling operation of the telephone devices in accordance with predetermined call states by allocating an SRE resource according to claim 1 of the main request.

Hence, D5 discloses a call control capable of dynamically allocating and de-allocating the SRE resource in response to additional changes in the call states (cf. feature ii)).

2.6 The teaching of D5, i.e. the re-allocation of the personal agent processor with its speech recognition capability at later stages of the call progress,

extends the voice control service for the users and thus solves the technical problem underlying the application in suit. Applying the teaching of D5 to the communication system of D1, the person skilled in the art would thus have modified the system of D1 such that the call control, after de-allocating the SRE resource at the end of the dialling process, would re-allocate the SRE resource in accordance with further call states, e.g. when the called party does not answer.

2.7 Hence, on applying the teaching of D5 to the communication system of D1 and by providing multiple speech recognition engine resources, the person skilled in the art would, without exercising inventive skill, arrive at a communication system which includes all the features of claim 1 of the main request.

2.8 For the above reasons, the subject-matter of claim 1 of the main request does not involve an inventive step (Articles 52(1) and 56 EPC). The main request is therefore not allowable.

3. *Auxiliary request Ia* - inventive step

3.1 Claim 1 of auxiliary request Ia further adds the following features:

i) the system includes a plurality of Dual Tone Multifrequency (DTMF) receivers for providing indications of DTMF digits dialed at the telephone devices;

ii) the DTMF receivers are distinct from the SRE resources; and

iii) the call control is capable of automatically and dynamically allocating and de-allocating one of the DTMF receivers in addition to the allocating and de-allocating, respectively, of one of the SRE resources.

Re. feature i): This feature is known from D1 (col. 2, l. 20-24 ("several conventional multifrequency code receiver units MCFE")).

Re. feature ii): D1 discloses in Fig. 1 a DTMF receiver ("MFC") distinct from an SRE resource ("SPWE"). Similarly, D5 discloses in Fig. 3 a DTMF receiver ("DTMF Detector 36") distinct from an SRE resource ("Speech Recognition Module 31").

Re. feature iii): D1 further discloses that a subscriber may enter a number for a desired service feature through the numeric keyboard in combination with voice entry (col. 4, l. 12-16). This implies that both a DTMF receiver and a speech recognition device must have been allocated. This is also in accordance with the fact that the multifrequency code receiver MFC, i.e. the DTMF receiver, is connected in parallel with the speech recognition engine resource SPWE (col. 4, l. 5-8). Thus, D1 discloses the allocation of a DTMF receiver together with an SRE resource in response to a telephone device initiating a call origination state.

With respect to allocating and de-allocating a DTMF receiver together with an SRE resource in response to additional changes in the call states, reference is again made to D5. More specifically, D5 discloses that the personal agent processor 11 comprises a DTMF detector 36 connected in parallel to a speech recognition module 31 (Fig. 3, col. 5, l. 33-34, col. 10, l. 43-47, and col. 11, l. 15-18). Further, D5

discloses that if a called party's line is not answered the subscriber can issue a voice command with telephone keypad backup (col. 15, l. 39-41). This requires that both the DTMF receiver and the SRE resource are active, i.e. allocated. Consequently, re-invoking the personal agent processor as mentioned at point 2.5 above would involve the allocation of both an SRE resource and a DTMF receiver in response to additional changes in the call states.

3.2 In view of the above and the reasons set out in point 2, the board concludes that the subject-matter of claim 1 of auxiliary request Ia does not involve an inventive step (Article 52(1) and 56 EPC). Auxiliary request Ia is therefore not allowable.

4. *Auxiliary request Ib* - clarity

4.1 Claim 1 of auxiliary request Ib further adds the following feature:

- the call control is "directly connected to each of the SRE resources and to each of the DTMF receivers".

4.2 Claim 1 is not clear for the following reasons.

The meaning of the wording "directly connected" is unclear. The subject-matter of the application, a communication system with speech control, is a highly complex system, possibly including software controlled data processing means. The description of the system in the application in suit is, as in D1 and D5, at an abstract level of block diagrams only, the single blocks comprising multiple lower level functions. A skilled reader would realize that these functions, in

particular functions embodied in software, may be allocated to the available means in various ways. The application in suit discloses with respect to, e.g., the DTMF receiver the possibilities of a DTMF receiver separate from the SRE resource (paragraph [0014]), a DTMF receiver integrated within the SRE resource (paragraph [0009]), and a DTMF function integrated into the SRE (paragraph [0014]).

The skilled reader would further realize that the high level description of the present system does not exclude that in practice the communication system would include further circuit components, e.g. line termination circuits, filters and couplers. It is unclear whether or not "directly connected" excludes these or other active or passive components.

The application itself does not contain any description of what "directly connected" in "a call control (3) directly connected to each of said SRE resources and to said DTMF receivers" means.

4.3 Claim 1 of auxiliary request Ib thus does not meet the requirements of Article 84 EPC. Auxiliary request Ib is therefore not allowable.

5. *Second auxiliary request* - inventive step

5.1 Claim 1 of the second auxiliary request differs from claim 1 of auxiliary request Ia in that it further adds the feature that the call control is capable of de-allocating said one of the SRE resources in response to the receipt of a first DTMF digit from one of the DTMF receivers. This is however known from D1, since D1 discloses that the voice recognition unit is interrupted when the multi-frequency code receiver

receives dial or code information (D1, claim 1, and col. 4, l. 12-20).

5.2 The appellant argued that D1 leads away from a de-allocation of the SRE device independently from the DTMF receiver, since the SRE device and the DTMF receiver are contained together within the "SPWE" facility and a deactivation of the "SPWE" facility in response to the receipt of the first DTMF digit would also deactivate the DTMF receiver and thus prevent it from receiving further DTMF digits. The board notes however that D1 discloses that a receipt of a DTMF digit by the DTMF receiver is communicated to the control unit ("SE") within the "SPWE" facility and that only the SRE device ("SPE") within the "SPWE" facility is interrupted (col. 4, l. 16-18).

5.3 In view of the above and the reasons given at points 2 and 3, the board concludes that the subject-matter of claim 1 of the second auxiliary request does not involve an inventive step (Article 52(1) and 56 EPC). The second auxiliary request is therefore not allowable.

6. As there is no allowable request, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Rauh F. van der Voort

Decision electronically authenticated