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Datasheet for the decision of 30 June 2009

Case Number: T 0593/08 - 3.4.01

Application Number: 03021806.9

Publication Number: 1381029

IPC: G10L 15/28

Language of the proceedings: EN

Title of invention:
Distributed voice recognition system

Applicant:
QUALCOMM INCORPORATED

Headword:
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Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

Case Number: T 0593/08 - 3.4.01

D E C I S I O N
of the Technical Board of Appeal 3.4.01
of 30 June 2009

Appellant: Qualcomm Incorporated

Representative: Walsh, Michael Joseph
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5, Dartmouth Road
Dublin 6 (IE)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 5 October 2007 refusing European application No. 03021806.9 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: B. Schachenmann
Members: H. Wolfrum
F. Neumann

Summary of Facts and Submissions

I. European patent application 03 021 806.9 (publication No. EP 1 381 029) was refused by a decision of the examining division dispatched on 5 October 2007, on the ground of lack of novelty and inventive step (Articles 52(1), 54(1)(2) and 56 EPC 1973) of the subject-matter of the request then on file.

II. The applicant lodged an appeal against the decision on 3 December 2007 and paid the prescribed fee on the same day. A statement of grounds of appeal was received on 30 January 2008.

III. On 18 March 2009, in response to a corresponding request, the appellant was summoned to oral proceedings.

In an annex accompanying the summons pursuant to Article 15(1) RPBA the board identified the question of inventive step as a main obstacle to the grant of a patent. In this context, the board drew the appellant's attention in particular to documents :

D1 : A. Burstein et al : "Using Speech Recognition in a Personal Communications System", DISCOVERING A NEW WORLD OF COMMUNICATIONS, CHICAGO, JUNE 14 - 18, 1992; [PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON COMMUNICATIONS]; NEW YORK, IEEE, US; 14 June 1992, pages 1717 - 1721; and

D4 : US-A-5 012 518.

D4 was cited in the search report of the parallel US application.

IV. The appellant did not respond to the board's comments but instead informed the board by facsimiles of 20 April 2009 and 21 April 2009 that it would not be attending the oral proceedings.

V. Oral proceedings were held on 30 June 2009 in the absence of the appellant.

VI. The appellant has requested in writing that the decision under appeal be set aside and that the set of claims 1 to 13 as filed with the statement of grounds of appeal be accepted as patentable subject-matter or, if necessary, remitted to the examining division for further prosecution.

VII. Independent claims 1 and 8 of the appellant’s request read as follows :

"*1. A voice recognition system comprising:*
a remote station (40, 100) including means (22) for receiving speech samples and extracting acoustic features

from said speech samples in accordance with a predetermined feature extraction format; and
a base station (42, 110) including means (62) for receiving acoustic features and for determining an estimated word string from said acoustic features;
characterized in that
said remote station (40,100) comprises local means (106) for determining the estimated word string from said acoustic features which does not transform the acoustic features; and said remote station (40,100) further includes means (24) for wireless transmission of acoustic features to said base station (42, 110) wherein before wireless transmission a decision is made not to transmit said acoustic features if said estimated word string can be determined at the remote station (40, 100) by said local means (106), and only if the local means (106) can not determine said estimated word string, the local means (106) signals a transform element (104) located at said remote station (40, 100) to facilitate source encoding and to reduce the effects of channel noise so as to prepare the acoustic features for transmission."

"8. A method for providing voice recognition comprising the steps of:
extracting, at a remote station (40, 100), acoustic features from received speech samples in accordance with a predetermined feature extraction format; and
receiving, at a base station (42, 110), acoustic features and determining an estimated word string from said acoustic features;
characterized by
providing local means at said remote station for determining the estimated word string from said acoustic features which does not transform the acoustic features; and said acoustic features are transmitted from said remote station (40, 100) to said base station (42, 110) by wireless [sic !] wherein before wireless transmission a decision is made not to transmit said acoustic features if said estimated word string can be determined at the remote station by said local means, and only if the local means (106) can not determine said estimated word string, the local means (106) transforms the acoustic features to facilitate source encoding and to reduce the effects of channel noise to prepare the acoustic features for transmission."

Claims 2 to 7 and 9 to 13 are dependent claims.

Reasons for the Decision

1. In the light of the entry into force of the EPC 2000, reference is made to Article 7(1), 2nd sentence of the Revision Act of 29 November 2000 ("Act revising the Convention on the Grant of European Patents (European Patent Convention) of 5 October 1973, last revised on 17 December 1991") and the transitional provisions for the amended and new provisions of the EPC (Decision of the Administrative

Council of 28 June 2001), from which it may be derived which Articles of the EPC 1973 are still applicable and which Articles of the EPC 2000 shall apply.

2. The appeal complies with the requirements of Articles 106 to 108 and Rule 64 EPC 1973 and is, therefore, admissible.

3. Inventive step

3.1 In its observations annexed to the summons to oral proceedings, the board presented arguments as to why the subject-matter of independent claims 1 and 8 on file could be considered to be rendered obvious by a combination of the teachings of documents D1 and D4.

3.2 There is agreement with the appellant that document D1 (Figure 1 and the corresponding description) shows, in the terminology of claim 1 under consideration, a voice recognition system having a remote station (eg "portable terminal", "personal communicators") including means for receiving speech samples and extracting acoustic features from said speech samples in accordance with a predetermined feature extraction format (Figure 2), local means for determining, in certain cases, the estimated word string from the acoustic features (paragraph bridging pages 1720 and 1721), and means for wireless transmission of acoustic features to a base station, the base station including means for receiving acoustic features and for determining an estimated word string from said acoustic features (chapter 5 on page 1721).

Moreover, and contrary to the appellant's view expressed in the statement of grounds of appeal, the board considers it implicit to the envisaged operation of the known system, *ie* in particular to the fact that document D1 foresees local speech recognition for a limited vocabulary (page 1720, last paragraph) as well as speech recognition at the base station in other cases (page 1717, left-hand column, last sentence; page 1721, first full paragraph), that, before wireless transmission, a decision has inevitably to be taken not to transmit said acoustic features if said estimated word string can be determined at the remote station by said local means. The board arrives at this conclusion - which remained uncontested by the appellant - by considering the explanations given on page 1720, last paragraph to page 1721, first full paragraph, of document D1. The board understands this passage as referring to a remote station which is capable of switching between a plurality of different applications that range from dialling a telephone number, *ie* an application which requires speech recognition of only a limited number of command words, to word processing, where the vocabulary spans an entire language.

3.3 In consequence, the sole difference between the subject-matter of present claim 1 and the system of D1 is the

feature that the local means for determining the word string does not transform the acoustic features, but instead signals a transform element located at the remote station to facilitate source encoding and to reduce the effects of channel noise so as to prepare the acoustic features for transmission, only if the estimated word string cannot be determined by the local means does not transform the acoustic features for determining the word string. It is noted that this claim definition itself includes a statement of the objective problem to be solved.

Notwithstanding the fact that the wording of the claim is ambiguous as to the exact nature of the transformation to be or not to be performed, it is clear from the description that the intended transformation is a specific type of transformation which is performed on the acoustic features for the purpose of facilitating their transmission to the base station. In fact, the application documents refer in this context to a transformation of linear prediction coefficients (LPC) based acoustic features into line spectrum pair (LSP) frequencies (see paragraphs [0023] and [0024] of the published application).

However, even assuming, for the sake of the argument, that the distinguishing feature is indeed clear, no inventive step can be recognised in this feature, for the reasons set out below.

3.4 Document D1 is silent as to the technical details for the transmission of acoustic features from the remote station to the base station and thus leaves it to the skilled person to resort to existing techniques in this respect.

In this context, document D4 provides evidence for the fact that at the priority date of the present application transformation of acoustic features which have been extracted from speech samples (more specifically a conversion of LPC based acoustic features into LSP data) was well established practice, in order to prepare speech data for transmission *inter alia* in the context of voice recognition so as to facilitate source encoding and to reduce the effects of channel noise (see the abstract; column 1, lines 23 to 33 and 60 to 64; column 3, lines 7 to 52; and claim 4).

No exercise of inventive skill can be seen in complementing the teaching of document D1 by making recourse to an apparently conventional technique for speech data transmission as presented by document D4 and thus in arriving at a voice recognition system as defined by claim 1 on file.

The same considerations apply to the method for providing voice recognition according to claim 8 on file.

3.5 The appellant did not present any arguments or explanations against the above assessment as presented in the board's communication annexed to the summons to oral proceedings.

3.6 The board has thus come to the conclusion that the subject-matter of the appellant's sole request does not involve an inventive step within the meaning of Articles 52(1) and 56 EPC.

The appellant's request is therefore not allowable.

Order

For these reasons it is decided that :

The appeal is dismissed.

The Registrar	The Chairman
R. Schumacher	B. Schachenmann