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Datasheet for the decision
of 28 June 2012

Case Number: T 2176/08 - 3.4.03

Application Number: 02727627.8

Publication Number: 1412932

IPC: G09B 5/08

Language of the proceedings: EN

Title of invention:
Language learning system and a digital storage unit

Applicant:
SANAKO CORPORATION

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
EPC Art. 54(1), 56, 84

Keyword:
-

Decisions cited:
-

Catchword:
-

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Case Number: T 2176/08 - 3.4.03

D E C I S I O N
of the Technical Board of Appeal 3.4.03
of 28 June 2012

Appellant: (Applicant)	SANAKO CORPORATION Kaurakatu 46 FI-20740 Turku (FI)
Representative:	Äkräs, Tapio Juhani Kolster Oy Ab Iso Roobertinkatu 23 P.O. Box 148 FI-00121 Helsinki (FI)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted 11 June 2008 refusing European patent application No. 02727627.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: G. Eliasson
Members: T. Häusser
                 T. Karamanli

C8048.D

Summary of Facts and Submissions

I.   The appeal concerns the decision of the examining
        division to refuse European patent application
        No. 02 727 627 for lack of inventive step in view of
        the following documents:

        D1:   EP 400 682 A2,
        D4:   "Disk Caching With MS-DOS' Smartdrv.sys", PC
              Operating Instructions, Vol. 4, Issue 9, September
              1993

        In the decision it was also stated that some of the
        dependent claims were not clear.

II.   At the oral proceedings before the board the appellant
        requested that the decision under appeal be set aside
        and that a patent be granted in the following version:

        – Claims: 1 to 5 as filed during oral
                               proceedings of 28 June 2012;
        – Description: pages 1, 3 to 9 as published and
                               pages 2 and 10 as filed during
                               oral proceedings of 28 June 2012;
        – Drawing sheets: 1/2 to 2/2 as published.

III.   The wording of claim 1 of the sole request reads as
        follows:

        "A language learning system comprising
        a digital storage unit (1) having an audio interface
        controller (201),
        a plurality of student audio stations (2_1-2_N) connected
        to said digital storage unit (1), said student audio

stations (2_1-2_N) being able to simultaneously but
independently from each other store audio recordings to
and play stored audio recordings from said digital
storage unit (1) under control of said audio interface
controller (201),

an audio network (4), c h a r a c t e r i z e d in that said
audio network (4) further comprises a connection unit
(3) comprising a dedicated port (31) for each of said
student audio stations (2_1-2_N) and said digital storage
unit (1), said connection unit (3) being configured to
route audio signals and commands in data packets
between said student audio stations (2_1-2_N) and said
digital storage unit (1) over said audio network (4),
and that said digital storage unit (1) comprises

a hard disk unit (202) common to said plurality of
student audio stations (2_1-2_N),

a plurality of dedicated first input/output RAM buffers
(B1, B3, … , B63), wherein each student audio station
(2_1-2_N) is associated with different one of the
dedicated first input/output RAM buffers (B1, B3, … ,
B63),

an audio network interface (200) connectable to said
connection unit (3) of said audio network (4),

said audio interface controller (201) being responsive
to a record command received via said audio network
interface (200) from a student audio station for
opening an audio file in said hard disk unit (202), for
buffering audio data received from a student audio
station (2_1-2_N) in the respective one of said dedicated
first input/output buffers (B1, B3, … , B63) and for
transferring the contents of the buffer to said opened
audio file,

said audio interface controller (201) being responsive
to a play command received via said audio network

interface (200) from a student audio station for opening an audio file in said hard disk unit (202), for transferring stored audio data from said opened audio file to a respective dedicated first input/output buffer (B1, B3, … , B63), and for sending said audio data from said respective dedicated first input/output buffer (B1, B3, … , B63) via said audio network interface (200) to the respective student audio station which sent the play command, and

said audio interface controller (201) further comprising a plurality of dedicated second input/output RAM buffers (B0, B2, … , B62), wherein each student audio station (2_1-2_N) is associated with different one of the dedicated second input/output RAM buffers (B0, B2, … , B62) for recording a master program played from another source into a respective second specified file and/or playing a recorded master program or a saved media file from said respective second specified audio file."

IV.   The appellant argued essentially as follows:

(a)   Inventive step

The subject-matter of claim 1 differed from the closest state of the art D1 in the features of the characterizing portion of claim 1.

An objective problem to be solved was to avoid special purpose memories and complicated memory control.

The claimed audio network was not an ordinary LAN, but a special type of packet network in a star-configuration. There was thus no basis for the

examining division's view that claim 1 referred to a commonplace networked client-server system.

Furthermore, replacing the student stations of D1 with client PCs and the digital storage unit with a HDD server would be far more than a minor modification of the system of D1, resulting in a more complicated and costly system than that of D1. There would thus have been no motivation for the skilled person to make that replacement.

Furthermore, the skilled person would not have regarded electronic solid state memories as outdated and would have considered the slow speed of hard disks unsatisfactory for the language system of D1. The skilled person would thus not have considered using the teaching of document D4 in the system of D1.

Even if the skilled person had replaced the digital storage unit of D1 with a hard disk drive server, he would have used normal caching in that server, whose purpose it was to reduce accesses to the underlying slower storage. However, the present invention was not related to such caching. Rather, the dedicated buffers guaranteed the transfer of audio data between the student stations and the audio files on the hard disk without disturbances. Moreover, the plurality of buffers allowed separate handling of audio data streams and audio files all over the learning system. This could not be achieved with standard caching. First and second dedicated buffers allowed to handle two audio streams simultaneously.

The claimed invention involved therefore an inventive step.

(b) Clarity

Claim 3 was clear as the skilled person understood that "normal file management operations" related to those operations normally performed when managing files, for example creating or copying files.

Reasons for the Decision

1.   Admissibility

The appeal is admissible.

2.   Amendments

Claim 1 is based on original claims 1, 2, 3, 8, and 11 and on the description as originally filed (page 3, lines 23-27; page 4, lines 18-22; page 5, lines 23-27; page 6, lines 9 – page 7, line 16; page 8, lines 16-18).

Dependent claims 2 to 5 are based on the description as originally filed (page 7, lines 5-6; page 9, lines 6-18) as well as original claims 4-6 and 9.

The description has been brought into conformity with the amended claims and a general statement has been amended without extending beyond the content of the application as filed.

Accordingly, the board is satisfied that the amendments comply with the requirements of Article 123(2) EPC.

3.   Novelty

3.1   Document D1

3.1.1 Document D1 relates to (see Figure 1 and column 3, line 31 – column 7, line 39) a language laboratory system comprising a plurality of training apparatus B1, B2, … , Bm, each containing headsets W1, W2, … , Wm and control portions X1, X2, … , Xm. The headsets W1, W2, … , Wm are connected to corresponding A/D converters C1, C2, … , Cm for supplying them with input audio signals and receiving from them output audio signals, respectively. Each A/D converter is connected to a voice information data processing portion 10 which can produce memorizable voice information data DAi by processing the voice information data obtained from the A/D converters C1, C2, … , Cm. The voice information data DAi are then supplied to a voice memory device 22. The data processing portion 10 can also receive voice information data DAi read from the voice memory device 22. The memory device 22 has a plurality of storing partitions S1, S2, … , Sm for storing the voice information data DAi and assigned to the corresponding training apparatus B1, B2, … , Bm.

The control portions X1, X2, … , Xm are connected to a control unit 20 and supply, in response to operations by the students, record or reproduction command signals to that unit 20. In response to these command signals the unit 20 controls the processing portion 10, the voice memory device 23 and an address memory device 24

in such a way as to store voice data in the appropriate
storing partition of the memory device 22 or to
reproduce voice data from the storing partition.

3.1.2   The board agrees with the appellant in that document D1
        discloses the preamble of claim 1. In particular,
        document D1 discloses, using the wording of claim 1, a
        language learning system (language laboratory system)
        comprising a digital storage unit (A/D converters C1-Cm;
        voice information data processing portion 10; voice
        memory device 22; control unit 20; address memory
        device 24) having an audio interface controller
        (control unit 20), a plurality of student audio
        stations (training apparatus B1-Bm) connected to said
        digital storage unit, said student audio stations
        (training apparatus B1-Bm) being able to simultaneously
        but independently from each other store audio
        recordings to and play stored audio recordings from
        said digital storage unit under control of said audio
        interface controller (storing/reproducing voice data
        under the control of the control unit 20), an audio
        network (wiring between the training apparatus B1-Bm on
        the one side and the control unit 20 and A/D converters
        C1-Cm on the other side).

3.1.3   Document D1 does not disclose the characterizing
        features of claim 1. The subject-matter is therefore
        new over document D1.

3.1.4   The remaining state of the art documents on file are
        not closer to the subject-matter of claim 1 than
        document D1. Claims 2 to 5 are dependent on claim 1
        providing further limitations of the language learning
        system.

Accordingly, the subject-matter of claims 1 to 5 is new (Article 52(1) EPC and Article 54(1) EPC 1973).

4.   Inventive step

4.1   Closest state of the art

The board agrees with the appellant in regarding document D1 as the closest state of the art, a view apparently also shared by the examining division in the appealed decision.

4.2   Objective technical problem

The subject-matter of claim 1 differs from the language learning system of D1 in comprising the characterizing features of claim 1.

In the decision under appeal it is stated that RAM buffers were known to speed up data exchanges. However, this is primarily the case when access to an underlying slower storage is reduced or avoided. In the present case, the buffers are an input or output to the hard disk drive (see also the description of the application as originally filed, page 2, lines 24-35). Its main purpose is therefore to allow for the different rates of recording and playing the audio data on the one hand and storing the data to the hard drive and reading the data from the hard disk on the other hand.

Furthermore, the effect of the distinguishing features is to allow routing of commands *as well as* audio signals between the student stations and the storage

unit via the connection unit and transferring audio
data to or from audio files. In this way a complicated
memory management and a high number of multi-wired
cables are avoided (page 2, paragraph 2, of the
description of the application as originally filed).

The objective technical problem is therefore to
simplify the language learning system.

4.3   Obviousness

4.3.1   In the decision under appeal it was held that the
        skilled person – seeking to implement the system of D1
        with modern hardware – would be led to replace the
        recording hardware with a networked client-server
        system.

        From the decision it appears that such a networked
        client-server system could include client personal
        computers which are connected over a network, e.g. an
        Ethernet based local area network, to a server
        computer.

        Such a solution would also entail replacing the storage
        means in D1 with a hard disk in combination with
        dedicated RAM buffers. Such buffers were equivalent to
        a caching system as described in D4.

4.3.2   A training apparatus in the language system of D1 has
        very limited capabilities: apart from a headset for the
        input and output of the audio signals it merely
        comprises a control portion, which is only capable of
        transmitting a reproduction and a record command signal,
        each of which having one of two possible values (logic

"0" or "1"). Replacing such a training apparatus by a
client computer in a networked client-server system
would require a re-design of the entire language system
of D1 and would mean that a simple unit (a training
apparatus of D1) is substituted by a more complicated
entity (a client computer). Therefore, the board agrees
with the appellant that the skilled person would not
consider such a replacement in order to solve the posed
problem of simplifying the language learning system.

4.3.3   Furthermore, it is acknowledged in the decision under
         appeal (point 2.3 of the Reasons) that the networked
         client-server system mentioned in the decision cannot
         be assumed to comprise a plurality of dedicated
         input/output RAM buffers, a view shared by the board.
         Moreover, the network in such a client-server system
         cannot be assumed to have a dedicated port for each
         client. Therefore, even if the skilled person were to
         consider using a networked client-server system in the
         language system of D1, he would not be led to the
         claimed invention.

4.3.4   Document D4 (see page 1, paragraph 1 – page 3,
         paragraph 1) is concerned with the problem that reading
         a file from or writing it to the hard drive is slow as
         it involves mechanical movement of the disk drive heads
         to search for or write the data on the hard disk. To
         speed up the data flow process "caching" is used, where
         information is stored in a computer's faster random-
         access memory (RAM) to await processing. In this way
         accesses to the hard drive are reduced.

         In the present invention the input/output RAM buffers
         are however used as an input or output to the hard disk

drive, thereby contributing to avoid a complicated
memory management (see point 4.2 above).

The skilled person would therefore not consider the
teaching of document D4 in order to solve the posed
problem of simplifying the language learning system.

Moreover, in document D4 a part of the random-access
memory is used as cache. It is thus not disclosed in
that document to use a plurality of input/output RAM
buffers. Also for that reason, document D4 would not
lead the skilled person to the claimed subject-matter.

4.3.5   Accordingly, the subject-matter of claim 1 involves an
        inventive step over document D1 in combination with
        document D4.

4.3.6   None of the other documents of the state of the art on
        file contains a teaching that would lead the skilled
        person in an obvious way to the subject-matter of
        claim 1. Claims 2 to 5 are dependent on claim 1
        providing further limitations of the language learning
        system of claim 1.

        The board is therefore satisfied that the subject-
        matter of claims 1 to 5 involves an inventive step
        under Article 56 EPC 1973.

5.   Other requirements of the EPC and conclusion

5.1   The board agrees with the appellant that claim 3 is
        clear (Article 84 EPC 1973) as the skilled person would
        understand that "normal file management operations"

related to those operations normally performed when
managing files, for example creating or copying files.

5.2   In order to comply with the requirements of Article 84
        EPC 1973, the description has been brought into
        conformity with the amended claims and a general
        statement in the description has been deleted.

5.3   In view of the above the sole request is allowable.

Order

For these reasons it is decided that:

1.   The decision under appeal is set aside.

2.   The case is remitted to the department of first
        instance with the order to grant a patent in the
        following version:

        - Claims: 1 to 5 as filed during oral
                           proceedings of 28 June 2012;
        - Description: pages 1, 3 to 9 as published and
                           pages 2 and 10 as filed during
                           oral proceedings of 28 June 2012;
        - Drawing sheets: 1/2 to 2/2 as published.

The Registrar: The Chairman:

S. Sánchez Chiquero   G. Eliasson