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Datasheet for the decision
of 23 September 2015

Case Number:	T 1900/10 - 3.5.04
Application Number:	05757607.6
Publication Number:	1766989
IPC:	H04N7/26
Language of the proceedings:	EN

Title of invention:
METHOD AND APPARATUS FOR ADAPTIVE TRANFORMS FOR COMPRESSING
STREAMS

Applicant:
Nahava, Inc.

Headword:

Relevant legal provisions:
EPC 1973 Art. 83, 111(1), 113(1)
EPC 1973 R. 67

Keyword:
Sufficiency of disclosure - (yes)
Right to be heard - substantial procedural violation (no)
Reimbursement of appeal fee - (no)
Remittal to the department of first instance - (yes)

Decisions cited:

EPA Form 3030
This datasheet is not part of the Decision.
It can be changed at any time and without notice.

Catchword:

Case Number: T 1900/10 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 23 September 2015

Appellant: (Applicant)	Nahava, Inc. 1326 Aldridge Drive Sunnydale, CA 94087 (US)
Representative:	Grund, Martin Grund Intellectual Property Group Postfach 44 05 16 80754 München (DE)
Decision under appeal:	Decision of the Examining Division of the European Patent Office posted on 23 March 2010 refusing European patent application No. 05757607.6 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman	B. Müller
Members:	C. Kunzelmann
	R. Gerdes

Summary of Facts and Submissions

I.   The appeal is against the decision of the examining
       division to refuse European patent application
       No. 05 757 607.6 under Article 97(2) of the European
       Patent Convention (EPC).

II.   The application was refused on the grounds of lack of
       disclosure (Article 83 EPC) of the described invention.
       The reasons for the decision do not make reference to
       any of the claims then on file.

III.   The examining procedure may be summarised as follows:

       In a first and only communication pursuant to
       Article 96(2) EPC 1973 the examining division raised
       objections of lack of clarity (Article 84 EPC), lack of
       novelty (Article 54(1) and (2) EPC) and lack of
       inventive step (Article 56 EPC). The reasons for the
       objections were given by reference to the International
       Preliminary Report on Patentability (IPRP). In the
       arguments relating to clarity, the communication's
       point 1.2 also stated that "By the reasons given in
       said IPRP, Item III, paragraph 2, the disclosure of the
       present application is not sufficient in the sense of
       Article 83 EPC, in order to enable an interpretation of
       said claims, which permits to make a well-defined
       technical sense out of their wording". (This paragraph
       of the IPRP comprised an objection that the description
       appeared "to use a wording, being generally non
       standard in the technical field of the invention and
       not proper with reference to subtile mathematical
       details and to features about the evolution of the
       encoding method and the nature of the transmitted
       compressed data". Understanding of these mathematical
       details and features appeared necessary for a full

understanding of the invention.) The appellant replied
with a letter comprising arguments and amended claims.
The examining division then issued a summons to oral
proceedings, raising an objection under Article 123(2)
EPC and maintaining its objections of lack of clarity,
novelty and inventive step. The summons also comprised
in point 3 the statement that "the description does not
define these features in a sufficiently clear manner to
make technical sense of the filed subject-matter." The
appellant reacted with a reply comprising detailed
arguments and amended claims. The oral proceedings
before the examining division then took place on
21 January 2010. In the oral proceedings the appellant
filed Annexes 1 and 2 to illustrate how the described
invention functioned. At the end of the oral
proceedings, the application was refused on the grounds
of lack of sufficiency of disclosure.

IV.   The applicant appealed and requested that the decision
under appeal be set aside and that a European patent be
granted. Oral proceedings were requested as a
precaution. With the statement of grounds of appeal,
the appellant filed claims according to a new main and
first and second auxiliary requests as well as a
declaration by the inventor. The declaration comprises
background information about the invention.

The appellant also requested a refund of the appeal fee
pursuant to Rule 103 EPC on the grounds that its right
to be heard might have been infringed (Article 113(1)
EPC.)

V.   Claim 1 according to the main request reads as follows:

"An encoding method comprising:
inputting data to encode;
selecting a particular encoding transform from one or
more encoding transforms each encoding transform being
stored in a location associated with a location
identifier, wherein a starting encoding transform in
said location is the same starting encoding transform
in a decoder;
encoding said data with said selected particular
encoding transform;
outputting said location identifier corresponding to
said selected particular encoding transform; and
outputting said encoded data."

VI.   Claim 1 according to the first auxiliary request reads
as follows:

"An encoding method comprising:
inputting data to encode;
selecting a particular encoding transform from one or
more encoding transforms each encoding transform being
stored in a *cache line* associated with a *corresponding
cache line number*, wherein a starting encoding
transform in said *cache line* is the same starting
encoding transform in a decoder;
encoding said data with said selected particular
encoding transform;
outputting said *cache line number* corresponding to said
selected particular encoding transform; and
outputting said encoded data."

Amendments with respect to claim 1 of the main request
are in *italics*.

VII.   Claim 1 according to the second auxiliary request reads
        as follows:

        "An encoding method comprising:
        inputting data to encode;
        selecting a particular encoding transform from one or
        more encoding transforms each encoding transform being
        stored in a *cache line* associated with a *corresponding
        cache line number*, wherein a starting encoding
        transform in said *cache line* is the same starting
        encoding transform in a decoder *and wherein said
        starting encoding transform is a baseline transform and
        a corresponding inverse baseline transform*;
        encoding said data with said selected particular
        encoding transform;
        outputting said *cache line number* corresponding to said
        selected particular encoding transform; and
        outputting said encoded data."

        Amendments with respect to claim 1 of the main request
        are in *italics*.

VIII.   Claim 15 of the main and the first and second auxiliary
        requests specify the corresponding decoding methods.

IX.   The board issued a communication pursuant to
        Article 15(1) of the Rules of Procedure of the Boards
        of Appeal (RPBA), annexed to a summons to oral
        proceedings. It indicated its provisional opinion that
        the reasons for the decision did not persuade it that
        the requirements of Article 83 EPC 1973 were not met
        and that it intended to remit the case to the
        department of first instance for further prosecution.
        The board also indicated that it intended to refuse the
        request for reimbursement of the appeal fee.

X.   With a letter of reply dated 18 August 2015 the
        appellant requested that the decision under appeal be
        set aside and that the case be remitted to the
        department of first instance for further prosecution.
        With a further letter dated 25 August 2015 the
        appellant withdrew the request for oral proceedings.

XI.   The board then cancelled the oral proceedings.

XII.   The reasons in the decision under appeal may be
        summarised as follows:

        It was apparent from the description that the object of
        the application was an encoding method based on
        singular value decomposition (SVD) and the
        corresponding decoding method. An adaptive transform
        (AT) based either on discrete cosine transform (DCT) or
        on SVD was generated, stored and updated in the cache
        at the encoder and, with a lock-step mechanism, in a
        corresponding cache at the decoder. The basis vectors
        of the AT were generated using a matrix A referred to
        in paragraphs [0031] and [0033] of the description. The
        application failed to provide unambiguous answers to
        the following questions:
        - How was lock-step achieved in updating the cache at
        the decoder, in particular at the initialisation stage
        of the encoding/decoding operation?
        - The matrix A was defined in contradictory ways in
        paragraphs [0031] and [0033]. What were the contents of
        matrix A?
        - What was stored in a cache line?
        - What was the definition of a profile?

The answers to these questions were essential to a sufficiently clear and complete definition of the mechanisms underlying the present alleged invention.

XIII.   The appellant's arguments concerning disclosure of the invention may be summarised as follows:

The written description (e.g. paragraphs [0031], [0033], [0043], [0044], [0087] to [0089] and [0090] to [0093]) comprised detailed instructions of how to perform at least one embodiment of the encoding procedure and the decoding procedure.

The questions given in the decision under appeal could be answered as follows:
- Lock-step was achieved by the encoder and the decoder initialising their caches identically, as described in figure 3, box 306 and figure 4, box 406, respectively, and subsequently independently applying the same operations to their respective caches.
- The two definitions of matrices A in paragraphs [0031] and [0033] were not contradictory. The two matrices A described two related embodiments. The more general procedure of paragraph [0033] described a lossy compression scheme and reduced to the more specific embodiment of paragraph [0031] in certain conditions relating to lossless compression.
- Each cache line cached one pair of U and V matrices that resulted from the invocation of the adaptive transform procedure described.
- A profile was both matrix U and matrix V. A profile, or equivalently a cache line, was used to compute a measure of similarity with a given matrix A.

The appellant's arguments concerning the request for reimbursement of the appeal fee may be summarised as follows:

In reply to the first and only communication under Article 96(2) EPC 1973, it had made a *bona fide* attempt to overcome all objections, including that of lack of disclosure. The summons to oral proceedings maintained the objections as to clarity, novelty and inventive step but not that of lack of disclosure. The applicant thus thought that this objection had been overcome. It was not clear from the summons whether the examining division had actually considered the content of the applicant's reply. Also, in the oral proceedings the examining division had again pointed out that the invention could not work if the baseline transform was not sent to the decoder, despite the extensive explanations in writing as to how and why a transmission of the baseline transform from the encoder to the decoder was not required. In the oral proceedings, other objections of lack of disclosure had been raised on the basis of concerns regarding the matrix A, the initialisation and updating phases, the underlying mathematics allowing the decoder to obtain the necessary basis vectors to perform the inverse transform, and certain features shown in figure 3. These other objections had not been raised before. The applicant had been confronted with these issues at least for the first time during the oral proceedings, and would have required more time to completely resolve these complex technical questions than had been allotted by the examining division.

Reasons for the Decision

1.   The appeal is admissible

*2.   Main request: sufficiency of disclosure (Article 83
        EPC 1973)*

2.1   According to Article 83 EPC 1973, "The European patent
        application must disclose the invention in a manner
        sufficiently clear and complete for it to be carried
        out by a person skilled in the art." It is established
        case law that the invention referred to in Article 83
        EPC 1973 is the claimed invention (see the Case Law of
        the Boards of Appeal of the European Patent Office,
        7th edition 2013, points II.C.1 and II.C.4.1 to 4.4).

2.2   In the present case, the steps specified in claim 1 of
        the main request are all well within the capabilities
        of a person skilled in the art. Indeed, inputting data
        to encode is a common step of encoding methods. Also,
        the selection of a particular encoding transform from
        one or more (stored) encoding transforms does not
        involve any particular difficulties. The same is true
        for the feature that each of the encoding transforms is
        stored in a location associated with a location
        identifier. The feature that one of these (stored)
        encoding transforms is a starting encoding transform
        means essentially that one encoding transform is given
        a label "starting encoding transform". Similarly, in
        the decoder, there is one stored encoding transform
        which is labelled "starting encoding transform". The
        further step of encoding the input data with the
        selected particular encoding transform is commonplace.
        The same is true for the steps of outputting the
        location identifier corresponding to the selected

particular encoding transform and outputting the
encoded data.

2.3   The objections raised in the decision under appeal do
         not refer to any feature of a claim. In particular the
         key questions identified in the decision under appeal
         need not be answered for carrying out the method steps
         of claim 1. For instance, it is undisputed that
         achieving lock-step in updating the cache at the
         decoder is an essential element of the described
         example, but the claimed encoding method does not
         specify updating anything. Similarly, while it is true
         that different matrices are labelled "matrix A" in the
         description, claim 1 does not refer to any matrix. The
         same holds true for the cache line and the profile.

2.4   A number of additional complications are present in the
         described example, such as the handling of errors in
         the case of lossy compression, or considering a
         sequence of blocks b0, b1, b2 instead of groups of
         m blocks, and updating the AT. Moreover, there are
         inconsistencies in the designation of the forward and
         backward transforms (U, V). However, these
         complications do not affect the coding method of
         claim 1.

2.5   In view of the above, the reasons given in the decision
         under appeal did not persuade the board that the
         application does not disclose the invention of claim 1
         of the main request in a manner sufficiently clear and
         complete for it to be carried out by a person skilled
         in the art.

3.   *First auxiliary request: sufficiency of disclosure
        (Article 83 EPC 1973)*

        In comparison with claim 1 of the main request, claim 1
        of the first auxiliary request additionally specifies
        that the storing location associated with a location
        identifier is a cache line associated with a
        corresponding cache line number. Thus in respect of
        claim 1 of the first auxiliary request the question
        "What is stored in a cache line?" might be relevant.
        However, claim 1 makes it clear that a cache line
        stores an encoding transform. Since the storing of an
        encoding transform in a cache line *per se* is well
        within the capabilities of a person skilled in the art,
        the reasons given in the decision under appeal did not
        persuade the board that the application does not
        disclose the invention of claim 1 of the first
        auxiliary request in a manner sufficiently clear and
        complete for it to be carried out by a person skilled
        in the art.

4.   *Second auxiliary request: sufficiency of disclosure
        (Article 83 EPC 1973)*

        In comparison with claim 1 of the first auxiliary
        request, claim 1 of the second auxiliary request
        additionally specifies that the starting encoding
        transform is a baseline transform and a corresponding
        inverse baseline transform. It is clear from the
        application (see, e.g., paragraph [0025]) that a
        "baseline transform" is a pre-arranged transform agreed
        between the encoder and the decoder and may be, for
        instance, the identity transform. Defining such a
        baseline transform is also within the capabilities of a
        person skilled in the art. Thus the reasons given in
        the decision under appeal did not convince the board

that the application does not disclose the invention of
claim 1 of the first auxiliary request in a manner
sufficiently clear and complete for it to be carried
out by a person skilled in the art.

5.   *The other independent claims*

5.1   The application comprises other independent claims. For
        instance, claim 15 of the main and the first and second
        auxiliary requests specifies decoding methods
        corresponding to the encoding methods. The only
        question discussed in the decision under appeal which
        is specific to decoding is that which relates to the
        way in which lock-step in updating the cache at the
        decoder is achieved.

5.2   In this respect, the appellant's arguments have
        convinced the board. In a first step, the encoder and
        the decoder initialise their caches identically. This
        is essentially part of the pre-arranged agreement
        between the encoder and the decoder. Indeed, figures 3
        and 4 and paragraphs [0087] and [0090] make it clear
        that the last cache lines N-1 (of cache lines 0 to N-1)
        of both the encoder and the decoder are preloaded with
        the baseline transform and set to locked (steps 306 and
        406). The other cache lines 0 to N-2 are set to
        invalid, see also paragraph [0043], step 3 of the
        encoding procedure and paragraph [0044], step 2 of the
        decoding procedure.

5.3   In the subsequent steps, the encoder and decoder
        independently apply the same operations to their
        respective caches. For instance, there must be a pre-
        arranged agreement between the encoder and the decoder
        as to which invalid cache line is to be selected if
        available or which unlocked cache line is selected as a

"victim" (see steps 328 and 428 in figures 3 and 4).
Moreover, in the case of a "miss" the same block (the
recovered block $b^+.i$ in steps 330 and 430) is added to
the respective selected cache line in the encoder and
the decoder. In the case of a "hit" the same (inverse)
transform (that stored in cache line k^* of the encoder
and of the decoder) is used to decode the block (see
steps 334 and 434).

5.4   In particular, the first m blocks of data are encoded
        using the baseline transform and sent to the decoder
        (see paragraph [0033]). Thus the decoder is capable of
        decoding the encoded first m blocks of data using the
        inverse of the agreed baseline transform. The first
        m blocks of data are also subject to an agreed AT (such
        as a singular value decomposition SVD or an eigenspace
        decomposition ESD) at the encoder. The resulting pair
        of transforms U, V is stored in a cache line. Since the
        AT is agreed between the encoder and the decoder, the
        decoder can calculate the transforms U, V from the
        first m blocks in the same manner as the encoder (see
        figure 5). The incorrect step of "decoding said
        received encoded data with said created new transform"
        in claim 15 (which should refer to decoding with the
        starting transform, i.e. the baseline transform, see
        block 424 in figure 4) is not an Article 83 EPC 1973
        issue.

5.5   The second m blocks of data are encoded using the
        baseline transform or the pair of transforms U, V which
        were determined on the basis of the first m blocks,
        depending on whether the baseline transform or the pair
        of transforms U, V is better suited for transforming
        the second m blocks ("miss" or "hit", see paragraphs
        [0035] to [0037]). The decoder receives the encoded
        blocks and the "hit" or "miss" designator and thus can

decode the encoded blocks using either the baseline
transform (in the case of "miss) or the pair of
transforms U, V (in the case of "hit", see
paragraph [0044], points 3 and 4).

5.6   Essentially the same thing happens for further groups
        of m blocks. The relevant cache line (i.e. the one
        comprising the best suited transforms) is found by the
        encoder and the corresponding cache line index is
        transmitted together with the encoded blocks.

5.7   Thus, the board finds that the application discloses
        how lock-step between the encoder cache lines and the
        decoder cache lines may be achieved.

5.8   In view of the above, the reasons given in the decision
        under appeal did not convince the board that the
        application does not disclose the invention claimed in
        claim 15 of the main request, first auxiliary request
        or second auxiliary request in a manner sufficiently
        clear and complete for it to be carried out by a person
        skilled in the art.

6.   Analogous considerations apply to the other independent
        claims, which relate to a machine-readable medium, a
        system and an apparatus which are specified by a
        reference to other independent claims.

7.   *Remittal (Article 111(1) EPC 1973*)

7.1   The board does not consider that the grant of a patent
        could be ordered on the basis of the claims filed with
        the statement of grounds of appeal. This is because
        full examination of the application, including the
        claims, as to patentability requirements has yet to be
        carried out. This is the task of the examining division

(see decision G 10/93 of the Enlarged Board of Appeal,
OJ EPO 1995, 172, point 4 of the Reasons). In the
present case, it is clear that a number of objections
were raised in the first-instance proceedings against
the patentability of the claims then on file. It is up
to the examining division to consider whether these (or
any other) objections need to be raised in view of the
claims filed with the statement of grounds of appeal,
even if the board decides the specific issue considered
in the decision under appeal in favour of the
appellant.

7.2   Thus the board decided to exercise its discretion under
        Article 111(1) EPC 1973 in remitting the case to the
        department of first instance for further prosecution.

8.   *The appellant's request for reimbursement of the appeal
        fee*

8.1   The appellant requests the refund of the appeal fee
        under Rule 103 EPC on the grounds that its right to be
        heard under Article 113(1) EPC might have been
        infringed (see section B of the statement of grounds of
        appeal).

8.2   It is Rule 67 EPC 1973 that applies to the present
        case, not corresponding Rule 103(1)(a) EPC 2000 (see
        T 630/08, at point 1, citing J 3/06, OJ EPO 2009, 170,
        point 3, and J 10/07, OJ EPO 2008, 567, point 7). On
        the same basis, Article 113(1) EPC 1973 is applicable.
        In substance, the transition from the EPC 1973 to the
        EPC 2000 did not change the two decisive criteria for
        such a reimbursement, namely that the appeal must be
        deemed to be allowable and that such reimbursement must
        be equitable by reason of a substantial procedural
        violation.

8.3   In the present case, the latter criterion is not met.
        The board finds that no substantial procedural
        violation occurred that breached the appellant's right
        to be heard under Article 113(1) EPC 1973 (whose
        wording is identical to that of Article 113(1) EPC).
        The reasons are as follows:

8.3.1   The appellant argued that it "simply required more time
        to completely resolve these complex technical questions
        than the time allotted by the Examining Division" (see
        point 9 of the statement of grounds of appeal).
        However, according to the uncontested minutes of the
        oral proceedings before the examining division (page 3,
        last two paragraphs and page 4), the appellant was
        given the requested time to consider the objections
        under Article 83 EPC raised by the examining division.
        In particular, according to the minutes there were two
        interruptions of over one hour each (10.35 until
        11.46 hrs and 13.25 until 14.40 hrs) in which the
        representative had time to consider the examining
        division's objections, each interruption then being
        followed by discussions lasting about one hour.
        Moreover, the objections concerned only the disclosure
        in the application. Other documents did not need to be
        considered at that stage. Under these circumstances,
        the board finds that the representative was given
        adequate time to consider the objections.

8.3.2   The board also notes that the summons to oral
        proceedings (section 2 and point 3) left no doubt that
        the examining division saw essentially unresolvable
        problems in the application ("the description does not
        define these features in a sufficiently clear manner to
        make technical sense of the filed subject-matter").
        Moreover, the appellant submitted to the examining

division, during the oral proceedings, previously
prepared Annexes 1 and 2 to illustrate how the
described invention functioned. In particular Annex 2
also indicates paragraphs of the application. The board
can interpret this submission only in the sense that
the applicant was aware, when preparing for the oral
proceedings, that the examining division saw major
problems with the disclosure of the described
invention, even though it had referred to Articles 56
and 84 EPC as the relevant legal bases in the summons.
It was clear from the summons that the applicant's
reply to the first communication had not persuaded the
examining division that all the raised objections had
been overcome.

8.3.3   The appellant also emphasised the distinction between
objections under Article 83 EPC and Article 84 EPC and
stated that it had considered the objection under
Article 83 EPC to have been overcome (see point B.4 of
the statement of grounds of appeal). However, it is
undisputed that both these articles had been (at least
implicitly) referred to in the written phase of the
first-instance proceedings. As discussed above, the
summons to oral proceedings (section 2 and point 3)
left no doubt that the examining division saw
essentially unresolvable problems in the description of
the application. In particular, some of the features
objected to under Article 84 EPC were considered to be
insufficiently disclosed in the description (see
point 3 of the summons). Thus objectively there could
have been no doubt that the examining division
considered the description of the invention to be
insufficient. Moreover, according to the undisputed
minutes of the oral proceedings the examining division
informed the appellant in those proceedings that an
objection under Article 83 EPC would be raised if the

technical questions ultimately recited in the decision under appeal were not answered. Hence, the mere fact that the refusal was ultimately based on Article 83 EPC alone does not raise any problems under Article 113(1) EPC 1973.

8.3.4   In view of the above, the board does not see that any infringement of Article 113(1) EPC 1973 occurred in the first-instance proceedings. No other procedural violation, let alone a substantial one within the meaning of Rule 67 EPC 1973, has become apparent either.

8.4   Therefore, the appellant's request for reimbursement of the appeal fee is to be refused.

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 for further prosecution.
3.   The request for reimbursement of the appeal fee is
        refused.

The Registrar: The Chairman:

K. Boelicke   B. Müller

Decision electronically authenticated