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D E C I S I O N
of 2 December 2003

Case Number: T 0313/01 - 3.5.1

Application Number: 96110204.3

Publication Number: 0817085

IPC: G06F 13/28, G06F 13/12

Language of the proceedings: EN

Title of invention:
Addressing means and method

Applicant:
MOTOROLA, INC.

Opponent:
–

Headword:
Addressing means and method/MOTOROLA

Relevant legal provisions:
EPC Art. 84, 123(2)

Keyword:
"Support by the description (yes)"

Decisions cited:
T 0630/93

Catchword:
–

Case Number: T 0313/01 **-** 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 2 December 2003

Appellant: MOTOROLA, INC.
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Representative: Gibson, Sarah Jane
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Decision under appeal: **Decision of the Examining Division of the**
                             European Patent Office posted 22 October 1999
                             refusing European application No. 96110204.3
                             pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: S. V. Steinbrener
Members: R. Randes
                  B. J. Schachenmann

Summary of Facts and Submissions

I.   European patent application No. 96 110 204.3
        (publication No. 0 817 085) was refused in a decision
        by the Examining Division.

II.   The decision was based on claims 1 to 9 filed on
        22 October 1998, of which claims 1 and 7 were
        independent.

        Claim 1 reads as follows (the text added to the claim
        in relation to the original claim 1 has been written in
        bold and the text deleted in relation to original
        claim 1 has been put within square brackets):

        "An electronic system (10') comprising:

            a direct access controller (40) for generating N x
            M addresses **in response to a single instruction**;

            a peripheral (30') having N data stores (77) **[**of
            length L**]**;

            an address decoder (70) for receiving the N x M
            addresses and generating therefrom access commands
            (76) for cyclically accessing the N data stores
            (77) M times."

        Claim 7 reads as follows (the text added to claim 7 in
        relation to corresponding original claim (claim 8) has
        been written in bold and the text deleted in relation
        to that original claim has been put within square
        brackets):

"A method (100, 120) for cyclically accessing N memory locations (770, 770') M times in a system (10') **in response to a single instruction**, using a (sic) **[**single**]** N x M **addresses [**address space**]** comprising:

    generating a single set of **[**contiguous**]** N x M addresses;

    sending the N x M addresses to a peripheral having the N memory locations; and

    decoding the N x M addresses so as to cyclically access the N memory locations M times."

III.   The reason for refusal was that the independent claims did not meet the requirements of Article 84 EPC. The Examining Division found that the description only offered support for addressing by fixed addressing increments. It was pointed out that original claim 8 (corresponding to present claim 7) contained a method step which required that a single set of contiguous N x M addresses was generated. Contiguous in this sense meant that each subsequent address equalled the previous address plus a fixed increment (published application, column 7, lines 9 and 10). This feature was however not contained in the claims before the Examining Division. According to the opinion of Examining Division, the requirement of support by the description was not fulfilled since the description did not disclose the functionality claimed, i.e. variable address increments in combination with the issuance of a single instruction by the processor.

IV.   A notice of appeal was filed against the decision on
        6 December 1999 and the appeal fee was paid on the same
        day. A statement of grounds of appeal was submitted on
        12 February 2000.

        In the statement of grounds of appeal the Appellant
        argued that the refused independent claims were clear
        and met the requirements of Article 84 EPC also in the
        sense that they were supported by the teaching of the
        original documents. In particular, the Appellant
        supported his argumentation by referring to decision
        T 630/93, in which it was pointed out that the main
        purpose of a claim was to set out the scope of the
        invention and that the function of the essential
        features was to define the borders of an invention
        rather than to define the invention in detail within
        the borders. They could often be of a very general
        character; in extreme cases they could only indicate
        principles or a new idea. The degree of generalisation
        was however always dependent on the prior art.

V.   The Appellant requested that the decision under appeal
        be set aside and that a patent be granted on the basis
        of the claims attached to the decision under appeal.
        The Appellant also made an auxiliary request for oral
        proceedings.

VI.   In a communication annexed to the summons to oral
        proceedings (to be held on 2 December 2003), the Board
        noted that the subject-matter of the refused
        independent claims 1 and 7 had been generalised with
        respect to that of the original independent claims
        mainly by deleting the features "of length L" and
        "contiguous" in the corresponding original claims 1 and

8, respectively. The admissibility of these changes was to be discussed at the oral proceedings.

VII.   In a fax received on 1 December 2003, the Appellant stated that "Motorola will not be attending oral proceedings concerning appeal proceedings T 0313/01-351 to be held on the 2nd December 2003".

VIII.   Oral proceedings took place on 2 December 2003 without the participation of the Appellant. The Board gave its decision at the end of the oral proceedings.

Reasons for the Decision

1.   The appeal is admissible, since it meets the requirements set out in Rule 65(1)EPC.

2.   The reason for refusing the application was, according to the appealed decision, that the independent claims did not meet the requirements of Article 84 EPC. Thus the Board has to investigate whether the refused independent claims 1 and 7 are supported by the description and thus meet the requirements of Article 84 EPC. However, since the non-compliance with Article 84 EPC alleged by Examining Division arose due to amendments to the original claims, it appears to be necessary to primarily consider whether the requirements of Article 123(2) EPC are met.

2.1   Article 123(2) EPC, Claim 1

        Refused claim 1 (see point II above) differs from original claim 1 by the addition of the feature "in

response to a single instruction" and the deletion of
the feature "of length". In this respect it is noted
that the Examining Division stated in a communication
(dated 8 December 1997) that "The repetitive or cyclic
execution of a read/write operation by a DMA controller
should be based on a single instruction" was a feature
which was essential to the performance of the
invention. The Board agrees with this statement by the
Examining Division and also agrees that the added
feature is disclosed in the original description (see,
for example, the published application, column 1,
line 57 to column 2, line 4).

Having regard to the deletion of the feature "of length
L", the Board does not share the doubts of the
Examining Division as to whether a claim without this
feature extends beyond the content of the application
as filed. It is true that in column 5, lines 35 to 36
it is stated: "For example, suppose that there are 16
registers of 32 bits length that are to be interrogated
1024 times". In the Boards's view this statement is
however only a proposal as to the capacity of the
registers. It is only made clear that in this specific
embodiment the 16 registers could have the same length
of 32 bits. Indeed, in column 4, lines 11 to 13, it is
stated that "Registers 770 in bank 77 (e.g. registers
R0-R15 in FIG. 3) can be of any desired length". Thus
the deletion of the feature "of length L" is allowable.
Moreover this feature can hardly be considered to be
limiting, since it only seems to imply that each data
store has a certain length.

The amendments to claim 1 consequently meet the
requirements of Article 123(2) EPC.

2.2   Article 123(2) EPC, Claim 7

Claim 7 differs from the corresponding original claim
firstly in that the feature "in response to a single
instruction", in correspondence with refused claim 1
has been introduced into the claim. As has been shown
above (point 2.1) with regard to claim 1, this
amendment was also introduced into claim 7 after the
Examining Division had expressed its opinion that the
feature was essential for the invention. The Board
agrees with the Examining Division that this feature is
an essential feature and considers this amendment to be
allowable, like the corresponding amendment in claim 1
(see point 2.1 above).

The second amendment to refused claim 7 concerns the
change of the expression "a single NxM address space"
to "a (sic) NxM addresses". This amendment (apart from
a clerical mistake resulting from the non-deletion of
the indefinite article) clarifies the language and is
supported by the original description, in particular by
the two embodiments disclosed.

The third amendment to refused claim 7 concerns the
deletion of the word "contiguous" in the phrase
"generating a single set of **contiguous** NxM addresses".
The Examining Division in the appealed decision
expresses the opinion that the deletion of "contiguous"
is not allowable, since it was an essential feature.

The principle aim of the invention, as described in the
introductory part of the original application (see the
published application, column 1, last line to column 2,

line 4), appears to be to provide a means and method by
which "a system can cause a DMA controller to
repetitively or cyclically execute a read/write (or
other fetch/store operation) based on a single
instruction covering the whole repetitive sequence".
Thus the main idea of the invention appears to be to
use only a single instruction to the DMA controller. In
this sentence there is no detailed teaching of how to
perform such an instruction or how to address the
peripheral. However, in column 7, lines 7 to 12, it is
stated that:

"It is desirable for achieving simplicity of address
generator 40 and decoder 70, that the addresses be
contiguous (each subsequent address equals the previous
address plus a fixed increment), as for example, in the
manner illustrated in FIGS. 3-4, but this is not
essential".

Thus this passage explains that a simple way of
addressing is to use contiguous addresses in the sense
that a new address is formed by adding a fixed
increment to the previous address. However this passage
ends with the statement that this way of addressing (in
Figures 3 and 4) is not essential for the invention.
The Examining Division considered that the statement at
the end of the passage did not support "the case of
variable address increments in combination with
issuance of a single instruction by the processor, as
claimed", since there are no embodiments disclosed in
the application indicating any other way of addressing
other than that shown in the cited Figures.

The Board however is not convinced by this argument. Although other ways of addressing are not described, it appears that a skilled person in the present technical field, who must also be skilled in mathematics, would not hesitate in particular situations to use different addressing, including, for example, increments varying in accordance with some algorithm or being even chosen at random. Therefore, in the Board's view the teaching of the description that fixed increments are not essential has a direct and unambiguous meaning for a skilled person. Indeed the last paragraph of the description of the present application reiterates that the skilled man would understand that "there are many equivalent ways of generating the desired register select outputs based upon the address inputs, and that the present invention is not intended to be limited to the particular means and method illustrated in FIG. 2-6". According to the invention, it is important that the method (and system) allows **the N memory locations in a peripheral to be cyclically accessed M times** using a single instruction. The way in which addressing occurs in detail does not appear to be important for the formulation of the claim. At least, not as long as there is no prior art requiring such restrictions of the claim (see point II above - T 630/93, not published in OJ, EPO). In this respect, the subject-matter of claim 7 appears to be properly distinguished from and identified in relation to the prior art given in the introductory part of the description.

The Board therefore concludes that also claim 7 meets the requirements of Article 123(2) EPC.

Moreover, the Board notes in passing that claim 1 of
the original application did not contain the
requirement that the DMA controller generate NxM
contiguous addresses (cf. point II). This appears to be
a clear indication to the skilled man that, according
to the invention, it is not always necessary to use
contiguous addressing. The claimed contiguous
addressing in original claim 8 (corresponding to
refused claim 7) appears to represent a convenient step
that could, but need not, be used in the method
described in the application.

3.   *Article 84 EPC, Support, Claims 1 and 7*

The second sentence of Article 84 EPC requires that the
claims be clear and concise and be supported by the
description. The valid description in substance
corresponds wholly to the original description.

Under point 2.1 above the Board has come to the
conclusion that claim 1 with the two amendments meets
the requirements of Article 123(2) EPC. The Examining
Division, however, in its decision concluded that the
feature concerning contiguous addresses was an
essential one which was missing from claim 1. The Board
in considering the question of added matter,
Article 123(2) EPC, in respect of the method claim 7
(see point 2.2) has however found that the feature
concerning contiguous addresses cannot be considered to
be an essential feature. Since the method and the
system described and claimed in the present application
correspond to each other, it is apparent that the
feature of contiguous addresses can also not be an
essential feature missing from the system claim

(claim 1). The Board is therefore of the opinion that claim 1 is also supported by the description, as required by Article 84 EPC.

It is therefore apparent that also claim 7 is supported by the description.

4.   *Remittal for further prosecution*

Since the Examining Division refused the application under Article 84 EPC and did not examine the application with regard to any other requirements of the EPC, it is necessary to remit the case to the first instance for further prosecution. The Board notes in this respect that the language of the claims may need some clarification, in particular, with respect to consistency of terminology (see summons to oral proceedings before the Board).

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.

The Registrar: The Chairman:

M. Kiehl   S. V. Steinbrener