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**D E C I S I O N**
**of 12 April 2000**


**Case Number:** T 0130/95 - 3.4.1

**Application Number:** 86111419.7

**Publication Number:** 0212615

**IPC:** G07F 7/10

**Language of the proceedings:** EN

**Title of invention:**
IC card

**Patentee:**
CASIO COMPUTER COMPANY LIMITED

**Opponent:**
GAO Gesellschaft für Automation und Organisation mbH

**Headword:**
-

**Relevant legal provisions:**
EPC Art. 56

**Keyword:**
"Inventive step - no"

**Decisions cited:**
-

**Catchword:**
-

**Case Number:** T 0130/95 – 3.4.1

**D E C I S I O N**
**of the Technical Board of Appeal 3.4.1**
**of 12 April 2000**

**Appellant:** CASIO COMPUTER COMPANY LIMITED
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**Representative:** Strasse, Joachim, Dipl.-Ing.
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**Respondent:** GAO Gesellschaft für Automation und
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**Representative:** Klunker, Schmitt-Nilson, Hirsch
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted 7 December 1994 revoking European patent No. 0 212 615 pursuant to Article 102(1) EPC.**


**Composition of the Board:**

**Chairman:** G. Davies
**Members:** U. G. O. Himmler
G. Assi

## Summary of Facts and Submissions

I.      European patent No. 0 212 615 was revoked by a decision
        of the Opposition Division posted on 7 December 1994
        pursuant to Article 102(1) EPC, on the ground that
        claim 1 of the patent as granted did not comply with
        the requirement of novelty having regard to the
        following prior art document:

        D1:  DE-A-27 38 113

II.     The patent proprietor (appellant) lodged an appeal
        against the above decision on 2 February 1995, paid the
        appeal fee the same day and filed a statement of
        grounds of appeal on 10 March 1995. In the grounds of
        appeal, according to its main request the proprietor
        contended that the patent should be maintained on the
        basis of an amended description and claims 1 to 5 as
        granted.

        The appellant further requested that, in the event that
        the main request were not to be allowed, the patent be
        maintained on the basis of the description as granted
        and an amended set of claims 1 to 5 in which the
        granted claim 1 had been divided into two independent
        claims 1 and 2 specifying two particular solutions
        (auxiliary request).

        Oral proceedings were requested in the event that the
        Board intended not to allow either of the above
        requests.

III.    In reply, the opponent (respondent) requested that the
        appeal be dismissed on the ground that claim 1
        according to the main request as well as claims 1 and 2

according to the auxiliary request were not inventive over the state of the art.

Oral proceedings were requested as an auxiliary request.

IV. In a letter dated 11 October 1995, the appellant contested the arguments of the respondent and maintained its requests.

In its reply dated 24 January 1996, the respondent contested the argumentation of the appellant and asserted that claim 1 according to the main request was not novel with respect to the state of the art of document D1 and that the independent claims 1 and 2 of the auxiliary request were not inventive with respect to the teaching of document D1.

V. The Board then issued a communication informing the parties of its provisional view that the subject-matter of claim 1 according to the main request was not new having regard to the disclosure in document D1 and that the subject-matter of the independent claim 2 according to the auxiliary request was not inventive having regard to a combination of documents D1 and D2: EP-B-00 18 889. The Board, therefore, appointed oral proceedings.

In response, the patent proprietor contested the above provisional view of the Board, maintained its main and auxiliary requests and filed a further second auxiliary request.

VI. Oral Proceedings were held on 12 April 2000 during which the appellant waived its request according to the

granted version of claim 1, but maintained as a main
request its previously-filed first auxiliary request
and as first auxiliary request its previously-filed
second auxiliary request. Further the appellant filed a
new document

D3:    "Bauelemente - Technische Erläuterungen und
       Kenndaten für Studierende", 4. Auflage, 1984,
       pages 282 to 285, Herausgeber Siemens AG, Bereich
       Bauelemente, München.

This document was considered to represent the common
general knowledge concerning memories at the priority
date of document D1.

This document was admitted to the proceedings by the
Board over the objection of the respondent.

VII.   The independent claims 1 and 2 according to the main
       request read as follows:

"1.    An IC card comprising memory means (65) having at
       least one memory area for storing secret data
       therein, means(58) for reading out data stored in
       said memory means, and comparator means(63) for
       checking whether externally supplied data and data
       read out by said reading means are coincident,
characterized by
       further comprising erasing means(50) for deleting
       the secret data by altering the data stored in the
       flag area of the memory means(65) when the
       coincidence of data compared in said comparator
       means(63) is detected.

2.     An IC card comprising memory means(65) having at

least one memory area for storing secret data
therein, means(58) for reading out data stored in
said memory means, and comparator means(63) for
checking whether externally supplied data and data
read out by said reading means are coincident,
characterized by
further comprising erasing means(50) for directly
clearing the secret data when the coincidence of
data compared in said comparator means(63) is
detected."

VIII.   The auxiliary request was identical to the main request
except that the independent claim 2 of the main request
was deleted and the dependent claims 3 to 5 were
renumbered as dependent claims 2 to 4.

IX.     The appellant made essentially the following
submissions in support of the patentability of the
subject-matter of the independent claims of the main
request and claim 1 of the first auxiliary request,
respectively:

Both solutions according to claims 1 and 2 of the main
request had been possible at the priority date of D1
but nobody had found them. In particular, at the
priority date of D1, erasing data by burning through
diodes having the function of a gate (cf. D3, page 283,
last line), as well as the "flag solution" (cf. D3,
page 284, paragraph "Programmierbare Festwertspeicher")
were technically possible. The fact that 9 years had
elapsed between the priority date of D1 and the
priority date of the patent in suit was an indication
of inventive step.

Combining documents D1 and D2 was not admissible, D2

being irrelevant. Indeed, in D2 the memory area was again made available for use whereas the invention was concerned with generally preventing the entry to the secret data.

X.        The respondent essentially made the following comments:

The patent in suit dealt with the problem of security of data on the card. Whereas D1 proposed the solution of destroying a gate, claim 2 of the main request recited the feature of erasing the secret data. This solution was an obvious measure permitting high security to be achieved

The solution of claim 1 of the main request followed directly from a combination of D1 with D2 , in particular claim 3 of D2. Altering the data stored in the flag area according to the invention was equivalent to the code giving free access to the protected area in D2. The only condition was to be entitled to use the code giving free access. In particular, D2 referred directly and unambiguously (expressis verbis) to D1; cf. column 1, lines 30 to 40 of D2.

Further, **selectively** erasing data was indeed not possible at the priority date of D1, as was clearly derivable from D3, where it was stated that erasing was only possible "en bloc"; cf. page 284, paragraph "Umprogrammierbare Festwertspeicher".

**Reasons for the Decision**

1.        The copy of document D3 handed over during the oral proceedings was taken from the 4th edition of that

textbook, the preamble of which referred to a 2nd edition dated April 1977. The textbook was used by the appellant to establish what had been state of the art at the priority date of document D1, 6 September 1976. The copy of D3 handed over by the appellant gave no other indication of when it had been published. The Board, therefore, made inquiries as to the publishing date of the 4th edition of that textbook and the differences, if any, between the 4th edition and the 2nd edition in the chapter "Mikrocomputer - Speicherbausteine" of that textbook. The outcome of these inquiries was that the 4th edition had been published in 1984 and that the subchapter "**Schreib-Lese-Speicher**" of the 2nd edition contained the following additional text at the end of paragraph 5 (page 258 of the 2nd edition and page 283 of the 4th edition:

*Zu den "Nichtflüchtigen" Halbleiterspeichern in MNOS-Technik zählt z.B. ein 256 Bit-Baustein von Siemens. Solche Bausteine finden infolge der aufwendigen Einschreib- bzw. Umprogrammiervorgänge zur Zeit nur als Ersatz für Festwertspeicher Verwendung, wie im folgenden noch näher erläutert wird.*

Further, there is an additional phrase at the end of the subchapter "**Umprogrammierbare Festwertspeicher**" of the 2nd edition which reads as follows:

*Nachteil: EPROMs sind noch teurer als PROMs.*

As a consequence of these inquiries, the Board came to the conclusion that the 2nd edition has to be taken into account when considering the state of the art at the priority date of document D1.

2.      *The only issue in the present appeal is that of*

        *Inventive step*

2.1     Claims 1 of the main request and of the auxiliary
        request are identical.

        The Board and the parties unanimously agree that D1 is
        the closest prior art.

        The underlying problem of the patent in suit (cf.
        column 1, line 57 to column 2, line 14) is to prevent
        secret data used to check the authenticity of the card
        holder and stored in certain parts of the memory of an
        IC card being read out, altered or otherwise reused.
        Document D1 is concerned with exactly the same problem
        (cf. page 9, paragraph 3).

        This document discloses (the numbers in brackets refer
        to the reference signs of the drawings in D1):

        "An IC card comprising memory means (13 to 17) having
        at least one memory area (13, 14, 41) for storing
        secret data therein, means (10,11) for reading out data
        stored in said memory means, and comparator means (10;
        cf page 16, second paragraph) for checking whether
        externally supplied data and data read out by said
        reading means are coincident, further comprising
        erasing means (20,22,23,24,26) for deleting the secret
        data stored in said memory means when the coincidence
        of data compared in said comparator means is detected."

        Cf. the description of D1: page 13, first paragraph;
        page 14, paragraph 2 to 4; page 15, paragraph 4 to
        page 16, paragraph 3; page 16, paragraph 5 to page 17,

paragraph 2.

Thus, the subject-matter of claim 1 is distinguished
from the IC card according to D1 in that:

the deleting of the secret data in said memory means is
accomplished by **altering the data stored in the flag
area** of said memory means.

The phrase **"altering the data stored in the flag area
of said memory means"** can only be interpreted, in the
Board's opinion, as meaning that depending on the
address on the flag the respective memory part is
reprogrammed.

Document D2 discloses

-       a process for checking the validity of the memory
        of a data carrier
        - and also the matching IC (cf. Figure 2)

-       the said memory comprising a protected zone
        wherein are stored data inaccessible from the
        outside

comprising the features of

-       prerecording a confidential key in the said
        protected zone

-       connecting the data carrier to a device
        - causing a key to be fed in from the outside
        - comparing this key to the key prerecorded on the
          carrier
        - causing an (reprogramming) operation for

validation of the memory if the two keys are
identical or irrevocably invalidating the
carrier if these two keys are different

-     the validation key being an erase key erasing the
      contents of said memory zone; (cf. claim 1 in
      combination with claim 3, column 2, line 59 to
      column 4, line 24 and column 5, line 45 to
      column 6, line 9)

Thus, document D2 (which explicitly refers twice -
column 1, line 40 and column 3, lines 36 to 37 - to
document D1) teaches exactly what is proposed as the
solution to the well-known problem underlying the
patent in suit: reprogramming of that part of the
memory containing the sensitive data.

Therefore, it was obvious for the skilled person to
combine the teaching of these two documents and to
arrive at the subject-matter of claim 1. Accordingly,
claims 1 of the main and auxiliary requests are not
allowable.

2.2     Independent claim 2 of the main request:

This claim refers to the solution that the erasing
means are means for *"directly clearing the secret
data"*. This possibility of "directly clearing the
secret data" cannot be considered to involve an
inventive step because it would be obvious to the
skilled person that secret data which are of no further
use should be destroyed.

As it was technically no problem at the priority date
of the patent in suit to electrically erase

programmable, read-only memories (EEPROM), the skilled
person knowing about this possibility of *"directly
clearing the secret data"*, would, therefore, regard it
as a normal design option to include this feature as a
solution in document D1 in order to solve the problem
which is also known from this document.

Consequently, the subject-matter of claim 2 of the main
request appears to lack an inventive step and,
therefore, is not allowable.

2.3     The Board cannot agree with the appellant that the
        background of D2 is completely different from the
        subject-matter of D1 and that of the patent in suit. On
        the contrary, the Board is of the opinion that D2
        refers to the protection of secret data in the memory
        of IC cards -- just as D1 and the patent in suit do.
        The fact that D2 in particular refers to the
        **re**validating of a used IC card makes no real **functional**
        difference to the validation of an IC card as disclosed
        in D1 and claimed in the patent in suit.

        Therefore, the person skilled in the art would
        immediately recognize that the teaching of D2 can be
        applied directly to the teaching in D1 thereby arriving
        at the subject-matter of claim 1 according to the main
        and auxiliary requests.

        Furthermore, the Board does not accept the appellant's
        argument that the "flag solution" as well as the
        "clearing the secret data" solution had been possible
        at the priority date of D1 and that, since nobody had
        found these solutions in the intervening 9 years, this
        was a strong indication that the subject-matter of the
        patent in suit included an inventive step.

The Board takes the view that:

(a)   if the appellant intended to advance a prejudice
      against one or both solutions of the patent in
      suit, no evidence in support of such a prejudice
      had been submitted.

(b)   if the appellant intended to advance the argument
      that the long period of 9 years is an indicator
      for the difficulty of finding the claimed
      solutions, the question arises not only whether
      one **could** have chosen these solutions, but whether
      the skilled person **would** have chosen one or both
      of these solutions at the priority date of D1.In
      this respect, the Board considers that the skilled
      person would **not** have chosen one or the other of
      these solutions at the priority date of D1 (even
      if he could have realised the one or the other),
      because at that time the **EEPROM** was not yet
      available. The Board's view on this matter has
      been strengthened by the additional remarks in the
      second edition of the textbook D3:

      "*Solche Bausteine finden infolge der aufwendigen
      Einschreib- bzw. Umprogrammiervorgänge zur Zeit
      nur als Ersatz für Festwertspeicher Verwendung*"

      and

      "*Nachteil: EPROMs sind noch teurer als PROMs*".

Consequently, at that time reprogramming or simply
clearing the data was only possible by taking measures
within the **hardware** (burning through diodes or erasing
data "en bloc" by ultraviolet light), but it was not

possible to realise one or both solutions by simply
changing the **software**. Therefore, the skilled man would
not have chosen one of these solutions at the priority
date of D1 as opposed to the time of the priority date
of the patent in suit when **EEPROM**s were available.


**Order**


**For these reasons it is decided that:**


The appeal is dismissed.


The Registrar:                         The Chairman:




R. Schumacher                          G. Davies


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