DECISION
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

DE 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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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I. European patent No. 0 212 615 was revoked by a decision of the Opposition Division posted on 7 December 1994 pursuant to Article 102(1) EPC, on the ground that claim 1 of the patent as granted did not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


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:


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 revalidating 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. Umprogrammiervergänge 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 **EEPROMs** were available.

**Order**

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

The appeal is dismissed.

The Registrar: 

R. Schumacher

The Chairman: 

G. Davies