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Applicant:
MEI, Inc.

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Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (yes)

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T 0410/96

Catchword:

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Case Number: T 0240/11 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 10 July 2015

Appellant: (Applicant)	MEI, Inc. 3222 Phoenixville Pike Suite 200 Malvern, PA 19355 (US)
Representative:	Peterreins, Frank Peterreins Schley Patent- und Rechtsanwälte Söltlstraße 2a 81545 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 1 October 2010 refusing European patent application No. 02255885.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Eliasson
Members:	S. Ward
	C. Schmidt

Summary of Facts and Submissions

I. The appeal is against the decision of the Examining Division refusing European patent application No. 02 255 885 on the ground that the claimed subject-matter of the main request and the first to third auxiliary requests did not involve an inventive step within the meaning of Article 56 EPC.

II. The appellant requested in writing that the decision under appeal be set aside, and that a patent be granted based on the following main request:

- Claims 1 to 22 of the main request as filed with the letter of 23 August 2010;
- Description: pages 1 to 18 as filed with the letter of 2 June 2015; and
- Drawings: figure sheets 1/7 to 7/7 as originally filed.

III. The following documents cited by the Examining Division are referred to in this decision:

D1: US 6 056 104 A
D2: WO 99/49423 A
D3: EP 0 294 068 A
D4: EP 1 050 857 A.

IV. Claim 1 of the main request reads as follows:

- *"A method of monitoring the operation of a group of currency acceptors (4) in a transaction system (2) in which performance data from the acceptors (4) is analysed to determine whether an aspect of the performance of a plurality of acceptors (4)*

differs in a similar way from an expected distribution, thereby indicating that external influences are likely to have caused that performance difference, wherein the performance data for the group of acceptors (4) is transferred for analysis to a server (6)."

Independent claim 22 of the main request reads as follows:

- *"A transaction system (2) comprising a plurality of acceptors (4) and means for performing a monitoring operation as claimed in any preceding claim."*

V. The Examining Division found essentially as follows:

Document D1 disclosed monitoring the operation of a currency acceptor installed in a host machine in which performance data of the currency acceptor was analysed to determine whether performance changed in some way from that expected, thereby indicating an external influence affecting performance, for example a change in coin population. The data gathered was statistical, so that the change was with respect to an expected distribution.

The system included a central station which implied that each of a plurality of currency acceptors was connected to the central station. Assessments and adjustments according to D1 related to large regions of a country which were subject to different external influences (many or few foreign coins), so that the skilled person would understand that each region might well contain several currency acceptors connected to a single central station. The use of modems strongly

hinted at such a network because the use of a modem was generally to form networks.

D1 disclosed that the currency acceptor could be adjusted according to the data collected, and this adjustment could be carried out remotely by means of a connection to a central site. This indicated remote analysis and the skilled person would select between the two possibilities for the location of the analysis of field data apparent from D1: local or remote.

The feature "in a similar way" in claim 1 did not necessarily mean that performance data from the plurality of currency acceptors is combined in any way but rather might mean that the data from any given acceptor indicated that it deviated from expectation in some way.

Even if some relationship or connection among a plurality of currency acceptors such as combining data from several acceptors was assumed to be present in the subject-matter of claim 1, that feature too was indicated by D1, because a change in coin population would be similar for each of the currency acceptors (within a region for example), the performance of which would change in a similar way, whereby it would occur to the skilled person that the sample involved in the statistical analysis would yield more reliable information more quickly in the usual way if the data from plural acceptors were combined.

Therefore the subject-matter of claim 1 did not involve an inventive step within the meaning of Article 56 EPC.

The subject-matter claim 1 according to the first to third auxiliary requests also did not involve an inventive step within the meaning of Article 56 EPC.

VI. The appellant's arguments may be briefly summarised as follows:

The finding of lack of inventive step was incorrect and stemmed from the fact that the Examining Division had ignored technical features of the claims on the one hand and had attributed more disclosure to the prior art than is actually disclosed there on the other hand.

The subject-matter of claim 1 differed from the disclosure in Dl at least in that "the performance data for the group of acceptors (4) is transferred for analysis to a server (6)", and in that "performance data from the acceptors (4) is analysed to determine whether an aspect of the performance of a plurality of acceptors (4) differs in a similar way from an expected distribution, thereby indicating that external influences are likely to have caused that performance difference."

Dl described primarily a sensor which can be used to simultaneously obtain data relating to two or more parameters of a coin or other object, such as size and conductivity of the object. The skilled person reading the passage which was mainly addressed by the Examiner (column 16, lines 5 to 52) might understand that the error rate changed based on the definition of the acceptance regions or boxes shown in Figs. l0A and l0B of Dl, that those boxes might be defined based on a statistical analysis of Q, D values for a standard or sample coin population, and that the size and shape of

the boxes might also be adjusted depending on the anticipated coin population.

There was no teaching that performance data from acceptors was analyzed, and especially no teaching that there was any analysis to determine whether an aspect of the performance of a plurality of acceptors differed in a similar way from an expected distribution.

It was described in document D1 that certain statistics could be obtained within a single device in the field. This information might be used within the particular device to adjust software or hardware, perform maintenance on the device and the like. There was no central unit and no transmission of any data, and thus there was also no analysis of the performance of a plurality of acceptors to determine whether they differed in a similar way from an expected distribution, which was to be understood as meaning that that data of the plurality of acceptors was compared.

The statements of the appealed decision that these aspects could be read into the disclosure of document D1 were based on hindsight, as Dl did not describe or hint anywhere that definitions for a currency acceptor should be adapted based on data gathered from multiple acceptors. To the contrary, Dl taught to adjust software or hardware, perform maintenance on a device to compensate for ageing or wear of sensors (Dl, column 16, lines 38 to 41). The Examining Division used the insight of the invention and the explanation in the present application and argued basically that the present invention is obvious because it was advantageous. Such a hindsight approach was inappropriate.

From the only sentence in D1 which could be regarded as describing a network (column 16, lines 41-47) the skilled person would learn that he could download the definition of the regions from a central site to a field site. This sentence mentioned the unidirectional transfer of specific data from a central site to a field site. There was no transfer of data from a field site to the central site at all, and especially no performance data was transferred for analysis to a server.

Accordingly, the skilled person would not arrive at the present invention starting from D1. A similar conclusion would be reached based on any one of documents D2, D3 or D4 or on any combination of documents D1 to D4.

Reasons for the Decision

1. The appeal is admissible.

2. Main Request: Claim 1

2.1 In the contested decision the subject-matter of claim 1 of the main request was found to lack inventive step. No other objections were raised in respect of claim 1 and the Board also sees no reason to discuss other issues.

2.2 Although the Examining Division and the appellant both base their analyses of inventive step on document D1, there is a significant disagreement between them about

which features of claim 1 are actually disclosed in this document.

It is undisputed that document D1 discloses a method and device for coin discrimination (see D1, claim 1) which involves the collection, in a sensor region 123, of data allowing coins to be discriminated, and the use of this data by a computer 290 housed within the machine to control coin routing etc. Furthermore, there does not appear to be any disagreement that in at least one passage (column 16, lines 33–52), procedures are defined which could legitimately be described as methods for monitoring the operation of the coin discrimination device.

Claim 1 of the present application, however, defines *inter alia* a method of monitoring the operation of a *group* of currency acceptors in a transaction system.

According to the appellant, document D1 is concerned with "a single device in the field", and therefore no method of monitoring the operation of a *group* of currency acceptors is disclosed. In the contested decision also, it was not alleged that document D1 *explicitly* discloses a transaction system including a group of coin discrimination devices or a method of monitoring such a group.

2.3 However, in a passage in column 16 (lines 41–47), the following is stated:

- *"In one embodiment, the apparatus in which the coin discrimination device is used may be provided with a communication device such as a modem and may be configured to permit the definition of the regions 1002a-1002e, 1002a'-1002e' or other data*

or software to be modified remotely (i.e., to be downloaded to a field site from a central site)".

It was held in the contested decision that this passage "implies that each of a plurality of currency acceptors are connected to the central station".

2.4 A further passage of document D1 cited in the contested decision (column 16, lines 27–32) reads as follows:

- *"in regions near national borders, regions may need to be defined so as to discriminate foreign coins, even at the cost of raising the false negative error rate whereas such adjustment of the size or shape of the regions may not be necessary at locations in the interior of a country where foreign coins may be relatively rare".*

2.5 Neither of these passages *explicitly* discloses that multiple currency acceptors exist at a plurality of locations. Nevertheless, on a sensible reading, the Board accepts that it is implicit that what is under discussion is a group of currency acceptors located at various sites.

2.6 Immediately after the passage cited under point 2.4, the following is stated (column 16, lines 33–41):

- *"If desired, the computer can be configured to obtain statistics regarding the Q, D values of the coins which are discriminated by the device in the field. This data can be useful to detect changes, e.g., changes in the coin population over time, or changes in the average Q, D values such as may result from aging or wear of the sensors or other components. Such information may be used to adjust*

the software or hardware, perform maintenance on the device and the like."

2.7 In the view of the Board, this passage, which discloses a method of monitoring a currency acceptor, introduces a possibility which must be considered to apply (at least) to the arrangement described in the text immediately preceding it, i.e. the passage referred to in paragraph 2.4, above.

Hence, these passages taken together can be considered to disclose a method of monitoring the operation of a group of currency acceptors. Since no other portions of document D1 can be considered to disclose these features, this subject-matter (from "In one embodiment" on line 17 of column 16 to the next appearance of "In one embodiment" on line 41 of column 16) must be regarded as constituting the closest prior art.

2.8 It is, however, pointed out that although such a group of currency acceptors may be referred to as a "transaction system", there is no disclosure that they are linked to form a network or that such a transaction system constitutes anything more than a plurality of the stand-alone devices depicted in figure 1A. This interpretation is confirmed by the reference to "the computer" (column 16, line 33), which can only be seen as referring to the computer 290 of figure 1A.

Hence, the closest prior art is considered to correspond to a method of monitoring the operation of a group of currency acceptors in a transaction system, in which each currency acceptor 123 is incorporated in a stand-alone device which also incorporates a computer 290, the method involving a statistical analysis of the Q and D values of each individual acceptor, carried out

by means of each respective computer, to detect any change in performance of that particular acceptor.

2.9 Accordingly, the features in which the claimed subject-matter differs from the closest prior art, in the order in which they appear in the claim, are as follows:

- performance data from the acceptors is analysed to determine whether an aspect of the performance of a plurality of acceptors differs in a similar way from an expected distribution (first distinguishing feature);

- thereby indicating that external influences are likely to have caused that performance difference (second distinguishing feature);

- the performance data for the group of acceptors is transferred for analysis to a server (third distinguishing feature).

2.10 The second distinguishing feature represents a statement of the purpose or aim of the monitoring method, whereas the first and third distinguishing features represent the means by which the aim is achieved. Hence it is apparent from the claim itself that the problem to be solved is to provide an indication whether external influences are likely to have caused a performance different from expectations.

2.11 The manner in which the claimed invention solves the problem is explained, in general terms, in the description (page 3, line 22 – page 4, line 3) as follows:

- *"Using the techniques of the present invention, because data is collected from a plurality (and preferably many) currency acceptors, changes resulting from external circumstances affecting some or all of the validators can be detected readily from statistical analysis, and are distinguished from changes affecting an individual machine, for example as a result of a fault."*

The Board is satisfied that the claimed method represents a plausible solution to the technical problem posed.

2.12 With respect to the second distinguishing feature, which sets out the aim of the claimed method, a passage in column 16 (lines 33–41) of document D1 discloses that performance data ("the Q, D values") from the acceptor is analysed to "detect changes, e.g., changes in the coin population over time, or changes in the average Q, D values such as may result from aging or wear of the sensors or other components." While a change in the coin population over time represents an external influence, and ageing or wear of the sensors or other components represents an internal influence, it is nowhere suggested that the disclosed monitoring method is aimed at distinguishing between the two, or would be capable of so doing.

The method of document D1 does not, therefore, have the same purpose as that of the claimed method, i.e. determining whether external influences are likely to have caused a performance difference. For this reason alone the Board finds it doubtful that the alleged obviousness of the subject-matter of claim 1 can be convincingly demonstrated only on the basis of document D1.

2.13 Moreover, neither the first nor the third distinguishing feature can be considered to be disclosed in any of the embodiments of document D1.

The Board has no doubt that the clear meaning of the first distinguishing feature is that performance data from multiple acceptors is analysed to determine whether there are correlations which would indicate external influences. This approach is neither disclosed nor suggested in document D1.

The third distinguishing feature is that the performance data for the group of acceptors is transferred for analysis to a server. One passage in document D1 (column 16, lines 41–47) mentions the possibility of data or software being downloaded via a modem *from* a central site (implying the existence of a computer/server at the central site), but there is no disclosure of such a link being used to transfer any data (including performance data) *to* the central site.

Even if a skilled person were to understand that such a communication link *could*, in general, be used to transfer data both ways (to and from the central site), it is not disclosed in document D1 that performance data is transferred to the central site, nor is there any suggestion that the statistical analysis of the Q and D data is performed anywhere other than in the computer 290 at the field site.

2.14 In summary, according to claim 1, a method is proposed for a purpose which not the purpose of the method of document D1, and which is achieved by features which are not disclosed in document D1. This would appear to point strongly to the conclusion that the subject-

matter of claim 1 of the main request is not obvious with respect to document D1.

2.15 Furthermore, it is not considered convincing that a skilled person would arrive at the claimed subject-matter via a two stage process, that is to say, firstly choosing to have the statistical analysis performed remotely, and then hitting on a method whereby an analysis of correlations could be used to indicate external influences.

Apart from involving a great deal of conjecture and speculation, such an argument would rely on defining different problems for the first and third distinguishing features. In the contested decision, for example, it is said that "the skilled person would select between the two possibilities for the location of the analysis of field data apparent from Dl: local or remote", and hence the first problem is apparently seen in terms of merely selecting an alternative data analysis location.

In a second stage, the skilled person would somehow have to arrive at a procedure involving an analysis of performance data correlations to solve the problem of detecting external influences.

Such an approach amounts to adopting a "partial problems" analysis, in which the distinguishing features are treated as entirely separate solutions of two distinct problems. According to established case law of the boards, "partial problems exist if the features or sets of features of a claim are a mere aggregation of these features or sets of features (juxtaposition or collocation) which are not functionally interdependent, i.e. do not mutually

influence each other to achieve a technical success over and above the sum of their respective individual effects, in contrast to what is assumed in the case of a combination of features." (See Case Law of the Boards of Appeal, 7th edition 2013, I.D.9.2.2).

In the present case, applying such an approach would not be appropriate, as it would fail to recognise that transferring performance data for the group of acceptors to a server *enables* the comparison of the performance data from the respective acceptors to be carried out in a straightforward manner at a single central location. The two features therefore combine to solve the technical problem, i.e. to allow a determination of whether external influences are likely to have caused performance differences.

2.16 In the light of the above, it is not plausible that the skilled person would arrive at the method of claim 1 on the basis of document D1 alone.

2.17 Document D2 discloses pay phones 5 having coin check units 30, and a line cable 20 which is:

- *"utilised to transmit data information regarding the current operation status of the payphone 5 to the remote facility computer 80, by utilising the modem 70. This ensures that the condition of a large number of pay phones can be monitored from the central facility computer 80, and it ensures that an error or a need for maintenance occurring on any pay phone 5 is quickly detected."* (page 10, lines 7-11.)

In addition, the computer downloads initial criteria for calibrating the coin check unit to receive a new coin denomination (page 12, lines 1–16).

It is not disclosed that performance data concerning the coin check unit 30 is transferred for analysis to the central computer. Furthermore it is not disclosed that any statistical analysis is performed to determine whether any aspect of performance of a plurality of coin check units differs in a similar way from an expected distribution.

2.18 Documents D3 and D4 appear to deal exclusively with single coin handling and validating units, and not with groups or networks of units.

2.19 Hence, none of the other cited documents (D2–D4), taken either alone or in combination with document D1, would lead the skilled person to the claimed invention, and the Board is therefore satisfied that the subject-matter of claim 1 of the main request involves an inventive step within the meaning of Article 56 EPC 1973.

3. Main Request: Claim 22

3.1 Claim 22 defines a transaction system comprising a plurality of acceptors and means for performing a monitoring operation as claimed in any preceding claim.

The Board interprets the expression "means for performing a monitoring operation" as defining means which are *adapted* to perform the claimed operation, rather than merely means which could be thus adapted (concerning so-called "means plus function" claims, see for example T 410/96, reasons 6).

3.2 For the reasons given above, *mutatis mutandis*, the subject-matter of claim 22 of the main request is also considered to involve an inventive step within the meaning of Article 56 EPC 1973.

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 based on the following documents:

   - Claims 1 to 22 of the main request as filed with the letter of 23 August 2010;
   - Description: pages 1 to 18 as filed with the letter of 2 June 2015; and
   - Drawings: figure sheets 1/7 to 7/7 as originally filed.

The Registrar: The Chairman:

S. Sánchez Chiquero G. Eliasson

Decision electronically authenticated