Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 18 May 2017

Case Number: T 2520/11 - 3.4.03

Application Number: 07100142.4

Publication Number: 1818878

IPC: G07F7/02, G07F7/08

Language of the proceedings: EN

Title of invention:
Information communication system, information communication device, information communication method and computer program

Applicant:
Sony Corporation

Headword:

Relevant legal provisions:
EPC 1973 Art. 56, 84

Keyword:
Claims - clarity (yes)
Inventive step - after amendment (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 2520/11 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 18 May 2017

Appellant: (Applicant)	Sony Corporation 1-7-1 Konan Minato-ku Tokyo (JP)
Representative:	Delumeau, François Guy Cabinet Beau de Loménie 158, rue de l'Université 75340 Paris Cedex 07 (FR)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 20 July 2011 refusing European patent application No. 07100142.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Eliasson
Members:	T. M. Häusser
	C. Schmidt

Summary of Facts and Submissions

I. The appeal concerns the decision of the examining division refusing the European patent application No. 07 100 142 for lack of clarity (Article 84 EPC 1973) and lack of inventive step (Article 56 EPC 1973) over the combination of the following documents:

D1: EP 1 517 277 A,
D5: US 2004/0215964 A.

II. At the oral proceedings before the board the appellant requested that the decision under appeal be set aside and that the patent be granted in the following version:

- claims 1 to 14 of the main request as filed at the oral proceedings before the board,
- description: pages 6, 7 and 9 to 11 as filed at the oral proceedings before the board, pages 1 to 5, 8 and 12 to 25 as originally filed, page 26 as filed with letter dated 18 April 2017,
- drawings: sheets 1/10 to 10/10 as originally filed.

The appellant declared at the oral proceedings that this request should replace all requests on file.

III. The wording of the independent claims of the sole request is as follows (board's labelling "(a)", "(b)", and "(c)"):

Main request:

"1. An information communication system comprising:
an information storage medium (1) provided with a contactless proximity data communication function and

capable of storing one or more of application services; and

a card read/write device (2) configured to access the information storage medium (1) by contactless proximity data communication; wherein:

the information storage medium (1) is configured to store service directory data describing attribute information for each of the stored application services, and,

(a) the card read/write device (2) being configured to respond to detection of the information storage medium (1) coming close thereto by reading the service directory data from the detected information storage medium (1), to acquire the attribute information regarding a desired one of the application services, to confirm the application service is stored on the information storage medium (1) and to start up a service program corresponding to the application service to perform access to the application service,

(b) wherein the data communication function is configured to apply a given physical layer regarding communication, and

(c) the card read/write device (2) being configured to automatically detect the physical layer of communication applied in the data communication function of the detected information storage medium (1), from among a plurality of potential physical communication layers and to perform acquisition of the service directory data and access to the application service stored on the information storage medium (1) in accordance with a protocol associated with the detected physical layer."

"6. A card read/write device (2) for performing data exchange by contactless proximity data communication with an information storage medium (1), which has a contactless proximity data communication function, and

is capable of storing one or more application services, wherein:

the information storage medium (1) is configured to store service directory data describing attribute information for each of the stored application services, and in that the card read/write device (2) comprises:

communication means (201, 202, 203, 208, 209, 210) for performing communication with the information storage medium (1) using the data communication function;

service directory data acquisition means (204, 206) configured to read the service directory data from the detected information storage medium in response to detection of the information storage medium (1) coming close to the card read/write device; and

service access means (205) for acquiring attribute information regarding desired one of the application services from the service directory data, confirming the application service is stored on the information storage medium (1) and starting up a service program corresponding to the application service to perform access to the application service,

wherein the data communication function of the information storage medium (1) is configured to apply a given physical layer regarding communication, and

the communication means is configured to automatically detect the physical layer of communication applied in the data communication function of the detected information storage medium (1), from among a plurality of potential physical communication layers and to perform acquisition of the service directory data and access to the application service stored on the information storage medium (1) in accordance with a protocol associated with the detected physical layer."

"11. An information communication method implemented by a card read/write device (2) to perform data exchange by contactless proximity data communication with an information storage medium (1), which has a contactless proximity data communication function, and is capable of storing one or more application services, wherein:

the information storage medium (1) stores service directory data describing attribute information for each of the stored application service, and in that the method comprises the steps of:

reading (S4-1, S4-2) the service directory data from the detected information storage medium (1) in response to detecting the information storage medium (1) coming close to the card read/write device (2); and

acquiring (S5-1, S5-2) attribute information regarding a desired one of the application services from the service directory data confirming the application service is stored on the information storage medium (1) and starting-up (S6) a service program corresponding to the application service to perform access to the application service,

wherein the data communication function of the information storage medium (1) applies a given physical layer regarding communication, and

the method further comprises the step of:

automatically detecting (S3) the physical layer of communication applied in the data communication function of the detected information storage medium (1) from among a plurality of potential physical communication layers to perform acquisition of the service directory data and access to the application service stored on the information storage medium (1) in accordance with a protocol associated with the detected physical layer."

"14. An article of manufacture described in a computer-readable form so as to execute a process, on a computer system of a card read/write device (2), for exchanging data by contactless proximity data communication with an information storage medium (1), which has a contactless proximity data communication function, and is capable of storing one or more application services, wherein:

the information storage medium (1) stores service directory data describing attribute information for each of the stored application services, and in that the article of manufacture comprises instructions for making the computer system perform the steps of:

reading (S4) the service directory data from the detected information storage medium (1) in response to detecting the information storage medium (1) coming close to the card read/write device (2); and

acquiring (S5) attribute information regarding desired one of the application services from the service directory data confirming the application service is stored on the information storage medium (1) and starting-up (S6) a service program corresponding to the application service to perform access to the application service,

wherein the data communication function of the information storage medium (1) applies a given physical layer regarding communication, and

further performing the step of:

automatically detecting (S3) the physical layer of communication applied in the data communication function of the detected information storage medium (1) from among a plurality of potential physical communication layers to perform acquisition of the service directory data and access to the application service stored on the information storage medium (1) in

accordance with a protocol associated with the detected physical layer."

IV. The appellant argued essentially as follows:

(a) Clarity

In the context of an information communication system the skilled person knew the difference between an upper level data link layer and a lower level physical layer. According to the Open Systems Interconnection (OSI) communications model, in which seven layers were identified, the physical layer constituted the lower layer 1 and was used to convey the bit stream through the network at the electrical and mechanical level. The physical layer might thus be a combination of software and hardware programming and might include electro-mechanical devices. Moreover, the passage in the description on page 12, line 28 to page 13, line 5, related to examples of the physical layer according to the invention. Therefore, the application met the clarity requirements of the EPC.

(b) Inventive step

It was acknowledged in the decision under appeal that the subject-matter of claim 1 differed from D1 at least in the communication function applying a given physical layer regarding communication and in that the information communication device was configured to automatically detect the physical layer of communication applied in the data communication function. The problem solved by the invention was to facilitate the use of multiple service information storage media to the user when he was operating the device in connection with various application service devices. Document D5 failed

to disclose a plurality of potential physical communication layers and an automatic detection of the physical layer of communication applied in a data communication function. D1 as well as D5 always considered a single type of information storage medium and could not be associated with the context of an environment requiring compatibility of a plurality of different layers. The skilled person would therefore not combine documents D1 and D5 and would not arrive at the claimed subject-matter.

Reasons for the Decision

1. Amendments

Claims 1, 6, 11, and 14 of the sole request are based on original claims 1, 7, 13, and 17, respectively, in combination with original claim 4 and the description as originally filed (page 7, lines 15-18; page 8, second paragraph; paragraph bridging pages 24 and 25; page 25, fourth paragraph).

Dependent claims 2-5, 7-10, 12-13 are based on original claims 2-3, 5-6, 8-9, 11-12, and 15-16, respectively. The description has been brought into conformity with the amended claims and supplemented with an indication of the relevant content of the prior art without extending beyond the content of the application as filed.

Accordingly, the board is satisfied that the amendments comply with the requirements of Article 123(2) EPC.

2. Clarity

2.1 In the decision under appeal the examining division held that the term "physical layer" used in the claims pending at the time was not clear (see point 3 of the Reasons).

2.2 The board is of the opinion that it is known to the skilled person, i. e. an electrical engineer with particular knowledge of IC card systems, that in a characterization of the communication functions of a computing system the *physical layer* defines the electrical, physical, functional and procedural characteristics to control the physical link between the communicating devices. This is in line with the examples of the different physical layers of communication provided in the description of the application, namely those of the FeliCa™ or Mifare™ contactless IC card systems (see page 24, lines 7-15; Figure 10). Therefore, the board agrees with the appellant in that the term "physical layer" is clear for the relevant skilled person.

Accordingly, the claims fulfill the requirements of Article 84 EPC 1973.

3. Main request - inventive step

3.1 Closest state of the art

The examining division regarded document D1 as the closest state of the art (see point 4 of the Reasons). Indeed, that document discloses subject-matter that is conceived for the same purpose as the claimed invention, namely for providing contactless proximity data communication between a card read/write device and an information storage medium, and has many relevant technical features in common with it, as detailed below.

Document D1 is therefore considered to constitute the closest state of the art.

3.2 Distinguishing features

3.2.1 Document D1 discloses in relation to embodiment 8 (see paragraphs [0132] to [0136], Figures 19 to 21) a mobile communications terminal 60 such as a mobile telephone, in which a secure device 10 is incorporated. The secure device 10 is provided with a plurality of card functions, and has obverse side data 361 corresponding to the respective card functions stored in obverse side data storing means 36. The secure device 10 also includes card application storing means 37, in which card applications 371 for executing the respective card functions are stored. The secure device 10 receives instructions from the mobile communications terminal 60 via contact communications means and returns the result of the instructed processing thereto. Further, the secure device 10 receives an instruction from a peripheral reader/writer 30 (e. g. a ticket examiner, POS terminal, and credit terminal) through contactless communications means and carries out a process on the basis of a prescribed card function. Whenever the mobile communications terminal 60 is swung horizontally, obverse side images expressing the card functions of the secure device are sequentially displayed on the display screen of the mobile communications terminal 60. In addition, if the mobile communications terminal 60 is swung vertically, the mobile communications terminal 60 stops displaying the obverse side image and is returned to a standby status of communications. When the secure device 10 attached to the mobile communications terminal 60 reaches a contactless communications area of the peripheral reader/writer 30, the secure device 10 commences communications with the

peripheral reader/writer 30 via the contactless communications means and starts processing using the card function of the displayed obverse side image 22.

3.2.2 When identifying the distinguishing features the examining division held in the decision under appeal that the mobile communications terminal of document D1 corresponded to the "information communication device" claimed at the time (see point 4.1 of the Reasons).

This correspondence has been averted by way of amending the claims, in particular by replacing in claim 1 "information communication device" by "card read/write device" and by specifying that the card read/write device is configured to access the information storage medium "by contactless proximity data communication" (feature defining a card read/write device) and "to respond to detection of the information storage medium (1) coming close thereto" by reading service directory data from the information storage medium, etc. (feature (a)).

3.2.3 Hence, using the wording of claim 1, document D1 discloses an information communication system comprising:

an information storage medium (secure device 10) provided with a contactless proximity data communication function (contactless communications means to a peripheral reader/writer 30) and capable of storing one or more of application services (card applications 371 are stored in storing means 37); and

a card read/write device (peripheral reader/writer 30) configured to access the information storage medium (secure device 10) by contactless proximity data communication (using the contactless communications means); wherein:

the information storage medium (secure device 10) is configured to store service directory data

describing attribute information for each of the stored application services (obverse side data 361 corresponding to the respective card functions are stored in obverse side data storing means 36).

3.2.4 The subject-matter of claim 1 differs from the information communication system of document D1 in comprising features (a), (b), and (c) (see point III above).

3.3 Objective technical problem

3.3.1 The examining division held that the objective technical problem was to facilitate the use of multiple service information media (see point 4.3 of the Reasons). Indeed, it is the effect of features (b) and (c) to allow the use of a plurality of types of information storage media. Moreover, feature (a) allows application service discovery, independent of the type of the employed information storage medium, without bloating the software (see page 7, last paragraph - page 9, first paragraph of the description of the application). The objective technical problem is therefore to allow the use of a plurality of types of information storage media without bloating the software.

3.4 Obviousness

3.4.1 In the system according to document D1 the exchange of data concerning the IC card applications is between the mobile communications terminal and the multi-application IC card.

In particular, in relation to embodiment 10 document D1 discloses (see paragraphs [0171] to [0175], Figure 27)

that the mobile communications terminal 20 comprises information reading means 25 that is freely capable of accessing the application information managing card applications 32 of the multi-application IC card 30. When the mobile communications terminal 20 receives certain display instructions from a user, obverse side data registered in the writing area 34 of the multi-application IC cards 30 are read out by the in-card information reading means 25 and displayed by displaying means 22 of the mobile communications terminal 20.

Such data exchange is intended to allow the selection by the user of the desired IC card application by swinging the mobile communication terminal or by touching the display screen (see paragraphs [0156] to [0158]).

This arrangement is structurally and functionally entirely different from the claimed system according to which the data exchange is between the card read/write device and the information storage medium and the service program corresponding to the application service is to be started without any prior selection by the user (see feature (a)). Hence, having regard to document D1 alone or in combination with his common general knowledge, the skilled person would not consider incorporating the distinguishing features into the system of D1 in order to solve the posed technical problem.

3.4.2 The examining division held that claim 1 pending at the time lacked inventive step over document D1 in combination with document D5, which was held to disclose feature (b) and the part of feature (c) relating to the automatic detection of the physical layer of communica-

tion applied in the data communication function (see point 4.3.1.1 of the Reasons of the decision).

3.4.3 Document D5 discloses (see paragraphs [0032] to [0038]) a computer system 10 having a computer 12 and a multi-purpose integrated circuit (IC) card 14. The IC card 14 is a portable card-like device with processing capabilities, allowing it to be used for many different purposes. A card reader 26 is coupled to the computer 12. The card reader 26 interfaces with the IC card 14 to transfer information to and from the IC card. The multi-purpose IC card 14 contains various resources that might be used by, or in support of, an application executing on the computer 12. The IC card may contain resources in the form of electronic assets, which represent value, for example electronic entertainment tickets, travel reservations, or service contracts.

Paragraph [0040] of D5, which is referred to by the examining division in this respect, merely relates to a software application interface executing on the computer 12 for preventing possible covert attacks. The application interface provides services which facilitate access to the resources on the IC card 14, without allowing the application itself to directly access the card-based resources. However, there is no mention of either features (b) or the part of feature (c) relating to the automatic detection of the physical layer of communication applied in the data communication function. Therefore, this document would not lead the skilled person to the claimed subject-matter, either.

3.4.4 In view of the above, the subject-matter of claim 1 of the sole request involves an inventive step. Independent claims 6, 11, and 14 of the sole request relating to a card read/write device, an information communica-

tion method, and an article of manufacture described in a computer-readable form so as to execute a process, respectively, correspond essentially to claim 1 relating to an information communication system. Claims 2 to 5, 7 to 10, and 12 to 13 are dependent on claims 1, 6, and 11, respectively.

Accordingly, the subject-matter of claims 1 to 14 of the sole request involves an inventive step (Article 52(1) EPC and 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 the patent in the following version:
   - claims 1 to 14 of the main request as filed at the oral proceedings before the board,
   - description: pages 6, 7 and 9 to 11 as filed at the oral proceedings before the board, pages 1 to 5, 8 and 12 to 25 as originally filed and page 26 as filed with letter dated 18 April 2017,
   - drawings: sheets 1/10 to 10/10 as originally filed.

The Registrar: The Chairman:

D. Magliano G. Eliasson

Decision electronically authenticated