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**Datasheet for the decision
of 18 December 2007**

Case Number: T 0451/04 - 3.4.01

Application Number: 99939993.4

Publication Number: 1038257

IPC: G06K 7/00

Language of the proceedings: EN

Title of invention:

System for the transmission of data from a data carrier to a station by means of at least one other auxiliary carrier signal

Patentee:

NXP B.V.

Opponent:

INSIDE CONTACTLESS

Relevant legal provisions:

EPC Art. 123(2)

RPBA Art. 13(1)

Relevant legal provisions (EPC 1973):

EPC Art. 54(1)(2), 56, 84

Keyword:

"Novelty (yes: all requests)"

"Inventive step (no: main request and first auxiliary request; yes: fourth auxiliary request)"

"Clarity (no: second auxiliary request)"

"Admissibility of late-filed requests (no: third auxiliary request; yes: fourth auxiliary request)"

Decisions cited:

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Catchword:

-



Case Number: T 0451/04 - 3.4.01

D E C I S I O N
of the Technical Board of Appeal 3.4.01
of 18 December 2007

Appellant:
(Opponent)

INSIDE CONTACTLESS
BAT. 11 A Parc Club du Golf
F-13856 Aix en Provence (FR)

Representative:

Marchand, André
OMNIPAT
24 Place des Martyrs de la Résistance
F-13100 Aix-en-Provence (FR)

Respondent:
(Patent Proprietor)

NXP B.V.
High Tech Campus 60
NL-5656 AG Eindhoven (NL)

Representative:

Röggla, Harald
NXP Semiconductors
IP Department
Cross Oak Lane
Redhill
Surrey RH1 5HA (GB)

Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 11 February 2004
rejecting the opposition filed against European
patent No. 1038257 pursuant to Article 102(2)
EPC 1973.

Composition of the Board:

Chairman: B. Schachenmann
Members: H. Wolfrum
F. Neumann

Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal against the decision of the opposition division, dispatched on 11 February 2004, rejecting the opposition against European patent No. 1 038 257. The notice of appeal was received on 30 March 2004 and the prescribed fee was paid on the same day. On 11 June 2004 a statement of grounds of appeal was filed.
- II. Pursuant to Article 100(a) EPC 1973, the opposition and the appeal were based on the grounds of lack of novelty and inventive step (Articles 52(1) and 56 EPC 1973).
- III. Oral proceedings were held at the request of the parties on 18 December 2007.
- IV. The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent (patent proprietor) requested as a **main request** that the appeal be dismissed and the patent maintained as granted. As auxiliary measures the respondent requested the maintenance of the patent in amended form on the basis of amendments to claims 11 and 16 proposed by letter of 6 August 2004 according to a **first** and a **second auxiliary request**, respectively, or on the basis of a set of claims 1 to 20 filed in the oral proceedings as a **third auxiliary request**, or on the basis of claims 1 to 10 filed in the oral proceedings as **fourth auxiliary request** together with description pages 2 to 10 filed in the oral proceedings and the drawings of the patent as granted.

V. In the appeal the following documents were of particular relevance :

- D1.1 : Philips Press Release 10/1996, "New 'multimode' RFID Chip presented by Philips/Mikron" (1 page);
- D2 : Article ISO/IECJTC1/SC17/WG8/TF3 N0083, "Contribution to ISO 15693 part 2", 06/1998, pages 1 to 6;
- D2.1 : US-A-5 345 231;
- D2.2 : EP-A-0 845 751;
- D5 : EP-A-0 750 200; and
- D6 : US-A-4 075 632.

VI. The **main request** encompasses the following four independent claims :

"1. A method for the contactless transmission of data (DA) from a data carrier (D) to a write/read station (1), wherein

the write/read station (1) generates a carrier signal (CS) and the generated carrier signal (CS) is applied to contactless operative transmitter means (20) of the write/read station (1), wherein a carrier signal (CS) is obtained in the data carrier (D) by means of contactless operative transmitter means (40) of the data carrier (D) which are coupled to the transmitter means (20) of the write/read station (1) in a contactless manner, wherein load modulation of the carrier signal (CS) is performed by means of one auxiliary carrier signal (SCS1) in a transmission mode for the transmission of a data block (DB) from the data carrier (D) to the write/read station (1),

wherein the carrier signal (CSB) load modulated by means of the one auxiliary carrier signal (SCS1) is demodulated by means of demodulation means (25) in the write/read station in order to obtain the transmitted data block (DB), wherein a test is performed in the write/read station (1) in order to determine whether disturbances occur in the signal path beyond the demodulation means (25), and

wherein control information is generated upon detection of disturbances, characterized in that

at least one transmission mode data block (MDB1, MDB2, MDB3) is generated as control information,

that the transmission mode data block (MDB1, MDB2, MDB3) is transmitted to the data carrier (D),

that the transmitted transmission mode data block (MDB1, MDB2, MDB3) is evaluated in the data carrier (D), and

that, in conformity with the evaluation of the transmitted transmission mode data block (MDB1, MDB2, MDB3), the data carrier (D) is controlled to an other transmission mode in which, in order to transmit a data block (DB) from the data carrier (D) to the write/read station (1), load modulation of the carrier signal (CS) is performed by means of at least one other auxiliary carrier signal (SCS2), the at least one frequency (f2) of the at least one other auxiliary carrier signal (SCS2) and the frequency (f1) of the one auxiliary carrier signal (SCS1) having different values."

"6. A write/read station (1) for the contactless reception of data from a data carrier (D), which station includes

carrier signal generating means (7) for generating a carrier signal (CS), and

contactless operative transmitter means (20) which can be supplied with the carrier signal (CS) and can be coupled to contactless operative transmitter means (40) of the data carrier (D) in a contactless manner so that a carrier signal (CS) can be obtained in the data carrier (D) by means of the transmitter means (40) of the data carrier (D), in which load modulation of the carrier signal (CS) can be performed by means of one auxiliary carrier signal (SCS1) in a transmission mode for the transmission of a data block (DB) from the data carrier (D) to the write/read station (1),

includes demodulation means (25) for demodulating the carrier signal (CSB) load modulated by means of the one auxiliary carrier signal, which demodulation means can output a data block (DB1) transmitted from the data carrier (D) to the write/read means (1), and

includes test means (3) which are arranged to test whether disturbances occur in the signal path beyond the demodulation means (25), and to generate control information upon detection of disturbances, characterized in that

the test means (3) are arranged to generate at least one transmission mode data block (MDB1, MDB2, MDB3) as control information whereby in the data carrier (D) an other transmission mode can be activated in which load modulation of the carrier signal (CS) can be performed by means of at least one other auxiliary carrier signal (SCS2) in order to transmit a data block (DB) from the data carrier (D) to the write/read station (1), the at least one frequency (f2) of the at least one other auxiliary carrier signal (SCS2) and the frequency (f1) of the one auxiliary carrier signal (SCS1) having different values."

"11. A data carrier (D) for the contactless output of data (DA) to a write/read station (1), which data carrier includes:

contactless operative transmitter means (40) which can be coupled to contactless operative transmitter means (20) of the write/read station (1), where a carrier signal (CS) generated in the write/read station (1), [sic!] can be obtained in the data carrier (D) in the coupled state

and also includes load modulation means (47) whereby the carrier signal (CS) can be load modulated by means of one auxiliary carrier signal (SCS1) in a transmission mode for the transmission of a data block (DB) from the data carrier (D) to the write/read station (1),

characterized in that

the data carrier (D) includes evaluation means (67) for evaluating a transmission mode data block (MDB1, MDB2, MDB3) which is transmitted to the data carrier (D) by the write/read station (1) and can control the data carrier (D) to an other transmission mode in which load modulation of the carrier signal (CS) by means of at least one other auxiliary carrier signal (SCS2) can be performed in order to transmit a data block (DB) from the data carrier (D) to the write/read station (1), and

that the data carrier (D) includes control means (68) which can be influenced by the evaluation means (67) and whereby the data carrier (D) can be controlled, in conformity with an evaluated transmission mode data block (MDB1, MDB2, MDB3), to an other transmission mode in which, in order to transmit a data block (DB) from the data carrier (D) to the write/read station (1), load modulation of the carrier

signal (CS) can be performed by means of at least one other auxiliary carrier signal (SCS2), the at least one frequency (f2) of the at least one other auxiliary carrier signal (SCS2) and the frequency (f1) of the one auxiliary carrier signal (SCS1) having different values."

"16. An integrated circuit (42) for a data carrier (D) for the contactless output of data (DA) to a write/read station (1), which integrated circuit includes :

connection means (43) for the connection of contactless operative transmitter means (41) which can be coupled to contactless operative transmitter means (21) of the write/read station (1), where a carrier signal (CS) generated in the write/read station (1) can be obtained in the circuit (42), in the coupled state, and

also includes load modulation means (47) whereby the carrier signal (CS) can be load modulated by means of one auxiliary carrier signal (SCS1) in a transmission mode for the transmission of a data block (DB) from the circuit (42) to the write/read station (1),

characterized in that

the circuit (42) includes evaluation means (67) for evaluating a transmission mode data block (MDB1, MDB2, MDB3) which is transmitted to the circuit (42) by the write/read station (1) and can control the circuit (42) to an other transmission mode in which load modulation of the carrier signal (CS) can be performed by means of at least one other auxiliary carrier signal (SCS2) in order to transmit a data block (DB) from the circuit (42) to the write/read station (1), and

that the circuit (42) includes control means (68) which can be influenced by the evaluation means (67) and whereby the circuit (42) can be controlled, in conformity with an evaluated transmission mode data block (MDB1, MDB2, MDB3), to an other transmission mode in which, in order to transmit a data block (DB) from the circuit (42) to the write/read station (1), load modulation of the carrier signal (CS) can be performed by means of at least one other auxiliary carrier signal (SCS2), the at least one frequency (f2) of the at least one other auxiliary carrier signal (SCS2) and the frequency (f1) of the one auxiliary carrier signal (SCS1) having different values."

Claims 2 to 5, 7 to 10, 12 to 15 and 17 to 20 are dependent claims.

The **first auxiliary request** differs from the main request in that at the end of claim 11 the feature has been added "*, and that the data carrier (D) includes encoding means (85) to encode the data block for the transmission from the data carrier (D) to the write/read station (1)*". A corresponding restriction is added to claim 16.

The **second auxiliary request** differs from the main request in that at the end of claim 11 the following wording has been added "*, and that the data rate[s] [sic!] of the data block transmitted in the transmission mode or the data block transmitted in the other transmission mode are about the same*". A corresponding amendment is made to claim 16.

The **third auxiliary request** differs from the main request in that at the end of claims 11 and 16 the following wording has been added "*, whereby the data carrier (D) also includes first frequency division means (71) and second frequency division means (72) which are connected to the regenerated clock signal (CLK), regenerated from the received non-modulated carrier signal (CS)*".

The **fourth auxiliary request** differs from the main request in that claims 11 to 20 of the patent as granted have been deleted.

VII. The appellant essentially relied on the following submissions :

As regards the main request, a data carrier according to claim 11 and an integrated circuit according to claim 16 lacked novelty with respect to the embodiment of Figure 4 of document D5. At any rate, the claimed subject-matter lacked inventive step in view of document D5 and knowledge which the skilled person gained from collective work on an emerging ISO standard, as evidenced by document D2. Alternatively, the skilled person would have arrived at the claimed subject-matter by merely exploiting the technical capabilities of the data carrier and integrated circuit known from D5 for selectable communication with the two systems of subcarrier modulation existing at the time, *ie* the single frequency subcarrier mode, for which document D2.1 showed an example, and the two frequency subcarrier mode required for FSK modulation, as shown by document D2.2. The assessment of inventive step made by the opposition division was erroneous for the simple

reason that it was based on an incorrect formulation of the objective problem, given the fact that claims 11 and 16 were directed to a data carrier and an integrated circuit as such and did not contain any limitation concerning a test of the quality of data transmission and a switching of the modulation frequency in relation to the result of such a test.

As regards the first auxiliary request, the added feature constituted a common measure, as was evidenced by each of documents D5 and D2.1, and thus did not contribute to inventive step.

The amendment made to the second auxiliary request was unclear, lacked an unambiguous basis of disclosure and was at any rate a basic characteristic of the emerging ISO standard.

The third and fourth auxiliary requests were filed at a very late stage of the appeal proceedings and thus should not be admitted by the Board.

In particular, the amendments made to claims 11 and 16 according to the third auxiliary request, which were derived from the patent description, caught the appellant by surprise and rendered it difficult for him to argue in substance.

As far as the fourth auxiliary request was concerned, a method for contactless transmission of data and the corresponding write/read station as defined, respectively, by the remaining independent claims 1 and 6 lacked inventive step. The claimed subject-matter was obvious for the skilled person, who readily devised

such a method and station once a data carrier and integrated circuit were realised which allowed to switch from one mode of data transmission (using a single frequency subcarrier) to another mode (using two subcarriers of different frequency). Moreover, in assessing inventive step it should be taken into account that the objective problem was more general than the specific problem stated in the patent description because the claim definitions did not mention a relationship between the detection of disturbances and the change of the mode of transmission. At any rate, everyday experience already provided an example for the claimed solution since every radio listener or TV viewer was familiar with the attempt of switching from one channel to another if disturbances deteriorated reception of the one channel.

VIII. The respondent's submissions may be summarised as follows:

As regards the main request, any attack on novelty and inventive step of the subject-matter of claims 11 and 16 which was based on document D5 was flawed because D5 related to a different technical field and taught a different solution. Even just the title of D5, which referred to a modulated backscatter system, made it clear that the document was concerned with a system operating in the UHF frequency range. In distinction thereto, a data carrier and an integrated circuit according to the present patent relied on load modulation and thus operated in the HF regime, ie at frequencies two orders of magnitude lower. Whereas data carriers and integrated circuits operating in the UHF domain were used for comparatively long range

communication and had antenna structures which merely reflected incoming UHF radiation from a write/read station, data carriers in the HF regime worked at close distances relying on an inductive interaction of two coils. In distinction to the case of UHF backscatter modulation, data carriers and circuits in the HF regime effecting load modulation were passive devices which received the necessary energy supply from the incoming unmodulated electromagnetic field, from which furthermore the full clock signal and the modulation subcarrier frequencies were derived by frequency dividers. For these reasons, a skilled person working in the HF domain would not take documents relating to UHF solutions, such as D5, seriously into account. Moreover, D5 taught switching between two modulation modes differing in the transmission range and the transmitted data rate. In distinction thereto, the present patent effected a change of the modulation technique in that the data carrier and the integrated circuit were capable of being switched from a noisy modulation subcarrier frequency to another subcarrier frequency.

Furthermore, the claimed subject-matter was not rendered obvious by the work on an emerging ISO standard, to which document D2 made reference. At the time the invention was devised, two systems existed for data transmission between stationary write/read stations and portable data carriers, namely a system using a single subcarrier frequency for uplink communication and a system operating with FSK modulation and thus two subcarrier frequencies. None of the experts united in the work on the standard had a solution to the problem of how to combine the

advantages of the two technologies within a single system.

As regards the first and second auxiliary requests, the proposed amendments were intended to emphasize the fact that the claimed subject-matter concerned load modulation in the HF regime and thus related to a technology which was fundamentally distinguished from the backscatter modulation technique in the UHF regime to which document D5 belonged.

The late filing of the third auxiliary request was due to the fact that, unfortunately, the representative and the inventor of the patent were only able to meet shortly before the date of the oral proceedings. The claimed amendment was clearly disclosed in the description of the original application and served to further emphasise the differences between the HF technology used by the patent and the UHF technology of document D5.

The fourth auxiliary request was to be seen as a reaction to the position which the Board took on the main request in the course of the oral proceedings. Since two complete groups of independent and associated dependent claims were simply deleted, the amendment did not create a surprising situation. The claims of the remaining groups were directed to the specific subject-matter of changing the subcarrier frequency in the modulation for uplink communication in reaction to the detection of disturbances. None of the documents of the available prior art hinted at such a functionality.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 64 EPC 1973 and is, therefore, admissible.

2. In accordance with Article 7(1), 2nd sentence of the Revision Act of 29 November 2000 ("Act revising the Convention on the Grant of European Patents (European Patent Convention) of 5 October 1973, last revised on 17 December 1991"), the revised version of the Convention shall not apply to European patent applications pending at the time of its entry into force, unless otherwise decided by the Administrative Council of the European Patent Organisation. In accordance with the transitional provisions for the amended and new provisions of the EPC (Decision of the Administrative Council of 28 June 2001), Articles 52 and 123 EPC shall apply to the present application, but not Articles 54(1) and (2), 56 and 100 EPC.

3. *Main request*
 - 3.1 Novelty (Article 100(a) EPC 1973 in conjunction with Article 52(1) EPC and Article 54(1) and (2) EPC 1973) of the subject-matter of claims 11 and 16
 - 3.1.1 Document D5 (see Figures 1, 3 and 4 with the corresponding description) discloses a data carrier in the form of a radio frequency identification (RFID) tag 105 and an associated integrated circuit for the contactless output of data to a write/read station (interrogator) which has transmitter means 301, means

for effecting backscatter modulation 302, evaluation means 305 and control means 307 so that it is capable of providing two types of responses for uplink communication from the data carrier to the write/read station, depending on the evaluation of a transmission mode data block sent from the station to the data carrier (see claims 1 and 14; column 5, line 52 to column 7, line 4). The two types of responses consist of a "single tone" acknowledgement or low data rate transmission, to achieve communication over a long range, and an "information signal" transmission of greater data rates at shorter range. In case of responses of the second type, the data carrier modulates data blocks onto the carrier signal of frequency f_1 incident from the write/read station by using either a single subcarrier signal of frequency f_2 (example of Figure 3) or two subcarrier signals of different frequencies to effect a frequency-shift key (FSK) type of modulation (example of Figure 4). In the specific case of a single tone acknowledgement consisting of a single bit of information, the data carrier generates a single subcarrier frequency which is modulated onto the incident carrier signal (see column 6, lines 24 to 28).

- 3.1.2 In the Board's view, the transmission of a single bit cannot be regarded as an example of an uplink transmission of a data block in the generally accepted meaning of this term, to which the claimed subject-matter under consideration is directed. Therefore, as far as the transmission of data blocks is concerned, document D5 discloses that for each of the two selectable types of uplink responses either a modulation by a single subcarrier frequency or a

modulation with two subcarrier frequencies may be employed.

However, document D5 does not provide a clear and unambiguous teaching that a change in the type of response of the data carrier (ie a change from a low data rate mode to a high data rate mode) under the influence of a control signal received from the write/read station would be accompanied by a change in the type of modulation employed. In fact, D5 discloses two independent embodiments and does not suggest that the arrangement of Figure 4 may be switched between a single-subcarrier-frequency mode and a two-subcarrier-frequency mode. Therefore, contrary to what is defined by claims 11 and 16 of the patent as granted, document D5 does not teach that the type of modulation employed for the response generated by the data carrier may be controlled by the control signal received from the write/read station.

Already for this reason, the subject-matter of claims 11 and 16 is considered novel over the prior art given by document D5.

3.1.3 It is debatable whether a further difference may be seen in the fact that claims 11 and 16 refer to load modulation as the technique used for uplink communication whereas document D5 expressly teaches to employ backscatter modulation.

The problem here is that the technical literature uses these terms with different meanings. The Board concurs with the respondent that sometimes the terms are indeed used in a stricter sense for specifying two distinct

techniques which differ particularly in the type and structure of the antenna of the data carrier and the associated antenna circuit. On the other hand, even in the case of backscatter modulation it is normally a load in the antenna circuit which is modulated. Thus, in the absence of further information in the claim definitions under consideration, the mere expression that "load modulation of the carrier signal can be performed" is not suitable to unambiguously distinguish the claimed subject-matter from the prior art according to document D5.

- 3.1.4 For the sake of completeness, the Board notes that claims 11 and 16 are not specific as to the frequency regime in which the data carrier and integrated circuit would operate. Document D5 on the other hand refers to radio frequency in general. Therefore, no difference can be seen between the claims under consideration and the prior art according to document D5 with respect to the frequency regimes (HF versus UHF) as alleged by the respondent.

Finally, no distinction can be seen in the alleged capability of the claimed subject-matter of being switched from a noisy modulation subcarrier frequency to another subcarrier frequency. Firstly, the claimed data carrier and integrated circuit are not and cannot be limited to the cause underlying the generation of the transmission mode data block formed in the write/read station. Secondly, it is noted that no difference exists between the FSK type modulation shown by Figure 4 of document D5 and the example of Figure 5 of the patent in suit which shows a kind of FSK

modulation as an embodiment of a switching to "at least one other subcarrier frequency".

3.2 Inventive step (Article 100(a) EPC 1973 in conjunction with Article 52(1) EPC and Article 56 EPC 1973) of the subject-matter of claims 11 and 16

3.2.1 Figures 3 and 4 of D5 illustrate the two approaches which have coexisted in the RFID world for the modulation of the uplink communication from an RFID tag to a write/read station. Either a tag using a single subcarrier frequency or a tag using two subcarrier frequencies is employed. This either/or approach has the disadvantage that certain tags cannot communicate with certain write/read stations.

With this background in mind and based on the technical difference established in paragraph 3.1.2 above, the objective problem is to be seen in the task of creating a multimode data carrier and integrated circuit the transmission mode of which is compatible with both RFID systems and unifies the two systems.

The more specific problem "to provide a data carrier and integrated circuit which, in case of disturbances occurring in the data block received at the write/read station, may be switched to another transmission mode to enable error-free communication with the write/read station", as relied on by the respondent, cannot be accepted as objective problem given the fact that the claimed data carrier and integrated circuit are not limited to the nature and origin of the control signal sent by the write/read station.

3.2.2 As noted above, at the priority date of the patent in suit the skilled person was aware of the fact that two RFID systems for uplink communication existed in parallel, one system using a single subcarrier frequency and the other using two subcarrier frequencies (*ie* "at least one other subcarrier frequency"). Evidence for this fact is given *inter alia* by the work on an ISO norm for RFID transponders, as illustrated for instance by document D2, as well as by documents D2.1 (see Figures 2, 4 and 8; column 3, lines 59 to 65; column 8, lines 14 to 25), showing an example of the single subcarrier frequency type, and D2.2 (see Figure 3; column 11, lines 9 to 29), showing a specific example of the second type.

Indeed, the alternatives of Figures 3 and 4 of document D5 are representative of the two RFID systems existing at the time. Thus for a manufacturer of RFID transponders or tags a commercial incentive existed to provide a tag which is compatible with both systems. Moreover, given the fact that the idea of changing the modulation mode of a data carrier was already known from document D5 (see column 7, lines 40 to 54) and that the document offered an RFID tag fully equipped with the required hardware, it would have been immediately apparent to the skilled person that a tag and the associated integrated circuit compatible with both types of existing RFID systems could be obtained simply by rendering selectable the number of subcarrier frequencies used for the modulation of the uplink transmission. Therefore, no exercise of inventive skill would have been required to arrive at the subject-matter of claims 11 and 16 of the patent as granted.

3.2.3 In arriving at this conclusion the Board does not share the respondent's opinion that document D5 concerned a different technology and thus was not a valid starting point for the assessment of inventive step for the present invention.

First of all, the argument is based on an alleged distinction between the technology of load modulation and that of backscatter modulation, which, for the reasons set out in paragraph 3.1.3 above, does not find support in the definitions of claims 11 and 16 under consideration. Apart from this, it is to be noted that the claimed subject-matter is not limited to a certain frequency regime, such as HF, and that document D5 refers to the field of data carriers operating at radio frequencies in general. In this respect the Board considers the skilled person to be familiar with the technical field of radio frequency transponders as a whole and not to be a specialist for a certain frequency regime, be it HF or UHF, only.

Moreover, even if for the sake of the argument the term "load modulation" in claims 11 and 16 of the patent as granted were given a specific meaning which excluded the technique of "backscatter modulation" mentioned in document D5, the claimed technique would nevertheless constitute a standard alternative as is evidenced for instance by document D2.1 (column 3, lines 24 to 49). Given the fact that no technical interaction exists between the modulation technology employed (backscatter or load modulation), on the one hand, and the number of subcarrier frequencies used for data transmission, on the other hand, the skilled person would have readily

chosen one or the other technology according to circumstances.

Finally, the argument that the claimed subject-matter was inventive because at the time of filing the patent none of the experts united in the work on the ISO standard knew how to combine the advantages of the two technologies within a single system is not convincing. This argument presumes that the invention came up with a new RFID system based on an hitherto unknown technology somehow combining the functionalities of the existing RFID systems. However, this is not the case since the claimed solution merely requires compatibility of a data carrier and associated integrated circuit with the two existing technologies. The claimed idea, however, is rendered obvious to the skilled person for the reasons set out in paragraph 3.2.2 above.

3.2.4 In summary, claims 11 and 16 do not comply with the requirement of Article 56 EPC 1973.

Consequently, the respondent's main request is not allowable.

4. First auxiliary request

The additional feature given in claims 11 and 16 concerns the presence of encoding means in the data carrier for the uplink communication and is already known from document D5. In fact, D5 refers in column 4, lines 13 to 16, specifically to Manchester encoding for the downlink communication and mentions in column 7, lines 51 to 54, the possibility of code modulation for

the uplink communication as well. Therefore, the amendment made cannot contribute to the presence of an inventive step.

Consequently, claims 11 and 16 of the first auxiliary request do not comply with the requirement of Article 56 EPC 1973.

For this reason, the respondent's first auxiliary request is not allowable.

5. *Second auxiliary request*

The expression given in amended claims 11 and 16 that the data rates in the one or the other transmission mode "*are about the same*" is vague and thus renders the claimed subject-matter unclear.

Therefore, claims 11 and 16 of the second auxiliary request do not comply with the requirement of Article 84 EPC 1973.

For this reason, the respondent's second auxiliary request is not allowable either.

6. *Third auxiliary request*

- 6.1 Article 13(1) RPBA (as in force from 13 December 2007) states that "any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. The discretion shall be exercised in view of *inter alia* the complexity of the new subject-matter submitted, the

current state of the proceedings and the need for procedural economy."

- 6.2 The present third auxiliary request was filed only at an advanced state of the oral proceedings. The explanation that the request arose from a discussion between the representative and the inventor, who could only meet on the day before the oral proceedings, does not constitute an acceptable excuse for the late filing.

The amendments made to claims 11 and 16 concern features, *ie* the provision of first and second frequency division means within the data carrier, which had not previously been the subject of the debate in the opposition and appeal proceedings and were not even part of any of the claims of the patent as granted. Thus, allowing the amendments into the proceedings would have necessitated a fresh examination as to their inventive merits.

Moreover, although it appears that the amendments are based on information contained in the description of the application as originally filed (cf the paragraph bridging pages 11 and 12 and the first paragraph on page 13 of the published PCT application), the requirement that the claimed frequency division means have to be specifically connected to the clock signal regenerated from the received non-modulated carrier signal nevertheless gives rise, *prima facie*, to new problems under Articles 84 EPC 1973 and 123(2) EPC. In fact, since claims 11 and 16 only specify means for a down-link communication of data blocks load modulated onto the carrier signal it remains obscure which means would be responsible for transmitting and receiving a

non-modulated carrier signal and for regenerating clock information therefrom. Thus, if the third auxiliary request were to have been admitted into the proceedings, this would have called for a detailed examination as to the clarity and support of the claim definitions.

6.3 Hence, given the advanced state of the proceedings and the fact that the amendments were not immediately allowable but instead raised new questions which could not be resolved without a further, detailed examination, the Board decided not to admit the third auxiliary request into the appeal proceedings.

7. *Fourth auxiliary request*

7.1 Admissibility

In distinction to the situation encountered in the third auxiliary request, the amendments made to the fourth auxiliary request consist in the deletion of complete groups of claims, ie of independent claims together with all of the associated dependent claims.

Therefore, the amendments did not result in a fresh case which could not have been considered beforehand by the other party and by the Board.

For this reason, the Board decided to admit the fourth auxiliary request into the appeal proceedings.

7.2 Novelty and inventive step

7.2.1 The method for the contactless transmission of data from a data carrier to a write/read station according to claim 1 and the write/read station for the contactless reception of data from a data carrier according to claim 6 of the patent as granted both rely on a test which is performed in the write/read station in order to determine whether disturbances occur in the uplink communication and on the respective generation of control information which causes the data carrier to switch to at least one other frequency of the auxiliary carrier signal for the modulation of the uplink data transmission.

Since none of the documents of the available prior art hints at such a functionality for the interaction between a write/read station and a data carrier, the claimed subject-matter is novel and inventive.

7.2.2 The arguments put forward by the appellant which contest this finding are not convincing.

The inventive step consideration proposed by the appellant starts from a data carrier and integrated circuit which enabled switching from one mode of data transmission (using a single frequency subcarrier) to another mode (using two subcarriers of different frequency) and continues to speculate on possible situations which rendered such a switching desirable. However, since, as discussed in paragraphs 3.1.1 and 3.1.2 above, the existence of such a data carrier has not been proven, the starting point relied on by the appellant is only a hypothetical situation and as such

cannot form a valid basis for a proper problem-solution-approach. In fact, document D2.2 could represent a reasonable starting point for the problem-solution-approach, which shows a write/read station having test means which check the integrity of the uplink communication. However, in reaction to detected disturbances, the known write/read station varies the manner in which it demodulates the uplink signal from the data carrier. Neither D2.2 nor any other document of the cited prior art hints at the idea to improve the quality of signal transmission by changing specifically the subcarrier frequency used for the modulation of the uplink transmission.

Moreover, the Board cannot share the appellant's point of view that the claim definitions under consideration did not mention a relationship between the detection of disturbances and the change of the mode of transmission. In the Board's opinion, the definitions in claim 1 that "*a test is performed in the write/read station (1) in order to determine whether disturbances occur in the signal path beyond the demodulation means (25)*", that "*control information is generated upon detection of disturbances*", that "*at least one transmission mode data block (MDB1, MDB2, MDB3) is generated as control information*", and that "*the transmission mode data block (MDB1, MDB2, MDB3) is transmitted to the data carrier (D)*", as well as corresponding definitions in claim 6 of the patent as granted leave no doubt that it is the control signal produced in reaction to the detection of disturbances which ultimately effects a switching of the subcarrier frequencies.

7.3 The description has been adapted to the subject-matter of the remaining claims.

7.4 For the reasons given above, the fourth auxiliary request has been found allowable.

Order

For these reasons it is decided that :

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent in amended form with: claims 1 to 10 as filed in the oral proceedings of 18 December 2007 as fourth auxiliary request corresponding to claims 1 to 10 of the patent as granted;
description pages 2 to 10 filed in the oral proceedings; and
drawings of the patent as granted.

The Registrar

The Chairman

R. Schumacher

B. Schachenmann