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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : W 07/84
International Application No. PCT/GB84/00028

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 25 November 1987

Applicant :

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Subject of the Decision : **Protest according to Rule 40.2(c) of the Patent Cooperation Treaty made by the applicants 18 June 1984 against the invitation by the European Patent Office (Branch at The Hague) for payment of additional search fees dated 28 May 1984.**

Composition of the Board :

Chairman : P.K.J. Van den Berg

Member : J.A.H. van Voorthuizen

Member : F. Benussi

Summary of Facts and Submissions

I. On 3rd February 1984 the Applicants filed an International Patent Application PCT/GB84/00028 with the United Kingdom Patent Office.

II. On 28th May 1984 the European Patent Office, being charged with the performance of the international search of the above-identified application, issued an invitation pursuant to PCT Article 17(3)(a) and Rule 40.1 to pay an additional search fee in view of the fact that it considered the above-identified application as not complying with the requirements of unity of invention.

The invitation stated that Claims 1-3 are directed to a microprocessor implemented FSK/PSK receiver with a Costas loop as a first invention, that Claims 4-8, 10 concern a microprocessor-controlled sampling circuit as a second invention, and
that Claim 9 pertains to a microprocessor-controlled sampling and heterodyning circuit as a third invention.

It was also stated that the International Searching Authority would establish the international search report on those parts of the international application which relate to the invention first mentioned in Claims 1-3 and furthermore that the international search report would be established on the other parts of the international application only if, and to the extent to which additional fees would have been paid, the total amount of additional fees being £880, i.e. £440 for a search of each additional invention, setting a time limit of 30 days for the payment to be fulfilled.

III. On 18th June 1984 the Applicants paid the additional search fee under protest (Rule 40.2(c) PCT). They asserted that Claims 2 to 10 are all dependent either directly or indirectly on Claim 1 and that only one invention is claimed independently. They furthermore referred to PCT Rules 13.4, 6.4(b) and 33.3(b) arguing as follows :

Rule 13.4 of the PCT regulations states "Subject to Rule 13.1, it shall be permitted to include in the same international application a reasonable number of dependent claims, claiming specific forms of the invention claimed in an independent claim, even where the features of any dependent claim could be considered in themselves an invention".

Rule 6.4(b) of the PCT regulations states "Any dependent claim shall be construed as including all the limitations contained in the claim to which it refers or, if the dependent claim is a multiple dependent claim, all the limitations contained in the particular claim in relation to which it is considered".

Accordingly, each of Claims 2 to 10 includes all the integers of Claim 1 with some additional limitation. The Claims therefore exhibit unity with Claim 1 as required by the regulations regardless of the novelty of Claim 1.

Thus, although Rule 33.3(b) requires that the international search "shall cover the entire subject-matter to which they (the claims) might reasonably be expected to be directed after they have been amended" it should not be allowable for the International Searching Authority to assert that a further fee should be paid on the basis that if amended in a particular manner non-unity of invention would arise.

Accordingly, it is submitted that the invitation to pay additional fees is outside the ambit of the search authority's powers, and that the additional fees should not have been levied.

A refund of the additional fees paid is requested.

In the alternative it is submitted that if the International Searching Authority is within its rights to levy an additional fee, Claims 4 to 9 should be considered as a group of inventions linked by a common inventive concept, that of using a microprocessor derived signal to control the selection of a signal sample for further processing.

The imposed additional fee is therefore excessive. Under Rule 40.2(c) a review of the fees is requested.

IV. In a letter dated 13th August 1984 the Applicants asked the European Patent Office when they could expect a decision on the refund of the additional fees they had paid under protest. In the same letter they confirmed the receipt of the full International Search Report, mailed by the EPO on 26th July 1984, in which report it is acknowledged that all additional search fees were timely paid and were accompanied by the Applicants' protest.

V: Claims 1-10 on which the Invitation by the International Searching Authority to pay additional fees is based, read as follows:

Claims

1. A demodulator for recovering digital data from a frequency-shift-keyed (FSK) or phase-shift-keyed (PSK) modulated signal characterised in that an incoming signal is applied to an input of a microprocessor (100) which is

programmed to subtract a mathematical function (1') representative of the carrier signal from the incoming signal to provide a baseband signal containing the data to be recovered, said microprocessor (100) also being arranged to derive from said baseband signal a value representative of the apparent phase difference between the actual carrier and said mathematical function and to vary said mathematical function in dependance upon said derived value, and said microprocessor (100) is further arranged to recover the digital data from said baseband signal and to derive timing signals from said baseband signal in respect of said recovered data and to provide signals at an output (108, 109) representing the recovered data and timing related thereto.

2. A demodulator as claimed in Claim 1 further characterised in that said microprocessor (100) is arranged to provide signals at a first output (108) representing the data and timing for data (if any) which is in-phase with the carrier signal and to provide signals at a second output (109) representing the data and timing for data (if any) which is in quadrature phase with the carrier signal.

3. A demodulator as claimed in Claim 2 further characterised in that the data at each of the outputs (108, 109) is in respect of a plurality of independent data channels.

4. A demodulator as claimed in Claim 1, Claim 2 or Claim 3 further characterised in that a sampling circuit (103) is controlled by a variable function derived by the microprocessor (100) to sample an incoming signal at periodic intervals, said circuit being arranged to hold a value representative of the incoming signal at the instant of sampling and to provide a signal to the microprocessor (100) representing the value held.

5. A demodulator as claimed in Claim 4 further characterised in that the sampling circuit (103) samples in the manner known as sub-Nyquist sampling.

6. A demodulator as claimed in claim 4 or Claim 5 further characterised in that the control signals from the microprocessor (100) control the frequency of an oscillator (102) which in turn controls the sampling circuit (103).

7. A demodulator as claimed in Claim 5 further characterised in that the oscillator (102) is a digitally controlled oscillator.

8. A demodulator as claimed in Claim 6 or Claim 7 further characterised in that the sampling circuit (103) is an analogue sample and hold circuit.

9. A demodulator as claimed in Claim 1, Claim 2 or Claim 3 further characterised in that a sampling circuit (103) is controlled by a function derived by the microprocessor (100) to sample an incoming signal at periodic intervals and to provide a signal to the microprocessor (100) representing the value held and an oscillator (300) is responsive to signals from the microprocessor (100) to vary the synthesised carrier frequency mixed with an incoming signal prior to sampling.

10. A demodulator as claimed in Claim 7 or Claim 8 further characterised in that the digitally controlled oscillator (102) comprises a first divider (309) arranged to divide an input reference frequency (Fr) by a first fixed function (N) and to provide an output signal to cause a second divider (311) to divide the input reference frequency (Fr) by a variable function ($f-N_{\xi}$) determined by the microprocessor (100) to provide a first sampling

signal to the sampling circuit (103) and to provide a start signal to a third divider (310) arranged to divide the reference frequency (Fr) by a further fixed function (C) and to provide a second sampling signal to the sampling circuit (103).

Reasons for the Decision

1. Pursuant to Article 154(3) EPC and Article 9 of the Agreement between WIPO and the EPO, the Boards of Appeal of the EPO are responsible for deciding on protests made by an applicant against an additional search fee charged by the EPO under the provisions of Article 17(3)(a) PCT.

   The protest, complies with Rule 40.2(c) PCT and is therefore admissible.

2. With regard to an earlier decision concerning Rule 40.1 PCT taken by a Board of Appeal of the European Patent Office, dated 6 June 1986, in the case W 07/86, published in the Official Journal of the EPO, 2/1987, pages 67-69, the present Board notes that the present case is straightforward in the sense that the list of the application's subject-matter, as summed up by way of groups of claims in the Invitation to pay additional fees is all that is necessary to substantiate the International Search Authority's finding a lack of unity, as expressed under Reason 4 of the cited decision.

3. In their letter dated 18th June 1984, the Applicants quote Rules 13.4 and 6.4(b) of the PCT.

The Board does not agree to the general conclusion drawn by the Applicants, that because all Claims 2-10 are dependent on Claim 1, these claims exhibit unity of invention regardless of the novelty of Claim 1.

4. Although indeed in the situation where there is a single independent claim from which all other claims depend, the possibility of making an a priori finding of non-unity could be regarded as excluded, the same does not hold for non-unity a posteriori, i.e. non-unity which becomes evident after a comparison with the prior art has shown that the independent claim lacks novelty or inventive step.

5. If the independent claim lacks novelty or inventive step, the situation may arise that several independent claims (or groups of independent claims), although still all being limited by the features of the independent claim nevertheless relate to inventions which have no longer a single inventive concept in common, even if initially they were linked by a pretended single inventive concept expressed by the independent claim. In the a posteriori case, therefore, non-unity is not found between the independent claim and any dependent claim but rather between (groups of) dependent claims relating to different inventions.

6. Concerning Rule 13.4 PCT it is to be noted that this Rule starts with the proviso "Subject to Rule 13.1", so that Rule 13.4 cannot be satisfied, if Rule 13.1 is not.

Therefore the part of Rule 13.4 particularly emphasized by the Applicants holds, in case an application comprises more than one invention, solely if those inventions are so linked as to form a single inventive concept, as required by Rule 13.1.

This is in agreement with what the Board of Appeal considers as the purpose of the concept of unity of invention i.e. to avoid the carrying out of multiple complete searches on a plurality of unrelated inventions which are comprised within one application against the payment of solely one search fee, be it that these inventions are claimed in independent claims, or that they are also comprised in dependent claims.

The Board has also considered in this context the Guidelines for Examination in the European Patent Office, as applied by DG 2, C-III, 7.8 (page 26) which state that no objection on account of lack of unity is justified in respect of a dependent claim and the claim from which it depends, even when the dependent claim contains an independent invention.

This EPO guideline is entirely in line with the cited PCT Rule 13.4. But also this EPO guideline only holds under the proviso of Article 82 and Rule 30 EPC, which constitute the only references to unity of invention, provided for in the EPC and where Article 82 EPC corresponds to Rule 13.1 PCT.

In the present case which is concerned with an International Search, it is clear that solely the PCT requirements are decisive.

7. In this context it is to be noted that it is not clear from the Invitation to pay additional search fees in how far the European Patent Office as an International Searching Authority has in fact taken into consideration the provisions of Rule 33.3(b) of the PCT in finding non-unity in the present case.

Therefore also this reason given by the Applicants for their protest is not considered convincing.

8. In summarizing the Board of Appeal arrives at the conclusion that the reasons for the protest given by the Applicants in their letter dated 18th June 1984, as such do not justify reimbursement of the additional search fees.

9. In the following the Board of Appeal will consider the contents of the claims more closely and will examine of its own motion, in accordance with Article 114(1) EPC which applies to all proceedings before the EPO, in how far the International Searching Authority's Invitation to pay additional fees was justified.

a) Claims 4-8, 10 pertain to a sampling circuit and its control to be applied to a demodulator for recovering digital data according to Claims 1-3.

The use of a sampling circuit at the entrance of a demodulator for recovering digital data not only constitutes normal practice and belongs to the general technical knowledge of a person skilled in the art, but the presence of such a sampling circuit is often indispensable in demodulating systems of this kind. Furthermore, the demodulator of Claims 1-3 being microprocessor-implemented, it seems only natural that the sampling circuit of Claims 4-8, 10 be controlled by the same microprocessor as well.

b) Claim 9 refers to Claims 1, 2 and 3, as does Claim 4. The first part of the characterising part of Claim 9 is identical to the whole characterising part of Claim 4.

In fact Claim 9 solely differs from Claim 4 in that it adds to Claim 4 the phrase "and an oscillator (300) is responsive to signals from the microprocessor (100) to vary the synthesised carrier frequency mixed with an incoming signal prior to sampling."

Claim 9 concerns the block diagram of Fig. 17 which is the only drawing containing an oscillator (300).

On page 17 of the description of the application it is indicated that the demodulator of Fig. 1 has to be modified e.g. into the one of Fig. 17, if it is to be used in, for example, satellite communications.

It is clear that the basic principle governing the demodulator of Claim 1 is also present in the demodulator of Claim 9 and that Claim 9 only adds the cited useful technical feature to Claim 1 and thus merely incorporates an embodiment of the demodulator according to Claim 1, the other features of Claim 9 already being mentioned in Claim 4.

c) In view of the foregoing analysis the Board of Appeal is of the opinion that the features of Claims 2-10 are interwoven with those of Claim 1 to such an extent that even when the subject-matter of Claim 1 or of Claim 1 and some other claims were known, that is not novel, the remaining claims would not fall apart in different subject-matters which could be considered as constituting independent inventions in a meaningful way.

d) All the three inventions according to the three sets of claims (i.e. Claims 1-3; Claims 4-8 and 10; Claim 9), therefore, not only exhibit unity of invention a priori, but also a posteriori.

10. Thus, the requirement of Rule 13(1) PCT is met.

Consequently, the invitation to pay additional search fees, mailed 28th May 1984 was not justified. The protest is allowable.

Order

For these resaons, it is decided that

the reimbursement of the total additional search fee to the Applicant is ordered.

The Registrar The Chairman

F.Klein P.K.J.van den Berg