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Datasheet for the decision of 9 February 2022

Case Number: T 1657/17 - 3.5.04

Application Number: 11717381.5

Publication Number: 2559249

IPC: H04N7/26, H04N7/36

Language of the proceedings: EN

Title of invention:
MIXED TAP FILTERS

Applicant:
Qualcomm Incorporated

Headword:

Relevant legal provisions:
EPC Art. 84

Keyword:
All requests - support by the description (no)

Decisions cited:

Catchword:

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Beschwerdekammern

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Case Number: T 1657/17 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 9 February 2022

Appellant: (Applicant)	Qualcomm Incorporated International IP Administration 5775 Morehouse Drive San Diego, CA 92121-1714 (US)
Representative:	Richardson, Julie Kate Reddie & Grose LLP The White Chapel Building 10 Whitechapel High Street London E1 8QS (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 23 February 2017 refusing European patent application No. 11717381.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	B. Willems
Members:	B. Le Guen
	B. Müller

Summary of Facts and Submissions

I. The appeal is against the decision to refuse European patent application No. 11 717 381.5.

II. One of the grounds for refusing the application was that independent claim 8 of the sole request then on file lacked support by the description (Article 84 EPC).

III. The applicant ("appellant") filed notice of appeal. With the statement of grounds of appeal, the appellant filed amended claims according to auxiliary request 1 and auxiliary request 2. It requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the request that had formed the basis of the decision under appeal ("main request") or, alternatively, on the basis of the claims of auxiliary request 1 or auxiliary request 2. The appellant also requested oral proceedings as an auxiliary measure.

IV. The board issued a summons to oral proceedings. In a communication under Article 15(1) RPBA 2020, the board expressed its preliminary opinion that, inter alia, claim 1 of none of the requests was supported by the description (Article 84 EPC).

V. The appellant did not reply in substance. In a letter dated 5 January 2022, it informed the board that it would not be represented at the oral proceedings scheduled for 18 January 2022 and that "*a decision may be made on the basis of the papers on file*". The scheduled oral proceedings were thus cancelled.

VI. Claim 1 of the **main request** reads as follows:

"A method of predicting video signals, comprising:

obtaining a block of pixels, wherein the block of pixels includes integer pixel values corresponding to integer pixel positions within the block of pixels;

computing a first sub-pixel value for a first sub-pixel position of the block of pixels, wherein computing the first sub-pixel value comprises applying a first interpolation filter defining a first one-dimensional array of filter coefficients corresponding to filter support positions;

computing a second sub-pixel value for a second sub-pixel position of the block of pixels, wherein computing the second sub-pixel value comprises applying a second interpolation filter defining a second one-dimensional array of filter coefficients corresponding to horizontal filter support positions and applying a third interpolation filter defining a third one-dimensional array of filter coefficients corresponding to vertical filter support positions, wherein:

the first one-dimensional array comprises more filter coefficients than the second one-dimensional array;

the first one-dimensional array comprises more filter coefficients than the third one-dimensional array; and

generating a predication [sic] block based on at least the first sub-pixel value and the second sub-pixel value, and

wherein the first sub-pixel position is on either a common vertical axis with integer pixel positions or a common horizontal axis with integer pixel positions, and

wherein the second sub-pixel position is not on a common vertical axis with integer pixel positions and not on a common horizontal axis with integer pixel positions."

VII. Claim 1 of the **first auxiliary request** reads as follows (features added to or deleted from claim 1 of the **main request** are underlined or crossed out, respectively):

"A method of predicting video signals, comprising:

obtaining a block of pixels, wherein the block of pixels includes integer pixel values corresponding to integer pixel positions within the block of pixels;

computing ~~a~~ first sub-pixel value<u>s</u> for ~~a~~ first sub-pixel position<u>s</u> of the block of pixels, wherein computing the first sub-pixel value<u>s</u> comprises applying a first interpolation filter defining a first one-dimensional array of filter coefficients corresponding to filter support positions;

computing ~~a~~ second sub-pixel value<u>s</u> for ~~a~~ second sub-pixel position<u>s</u> of the block of pixels, wherein computing the second sub-pixel value<u>s</u> comprises applying a second interpolation filter defining a second one-dimensional array of filter coefficients

corresponding to horizontal filter support positions and applying a third interpolation filter defining a third one-dimensional array of filter coefficients corresponding to vertical filter support positions, wherein:

the first one-dimensional array comprises more filter coefficients than the second one-dimensional array;

the first one-dimensional array comprises more filter coefficients than the third one-dimensional array; and

generating a predication [sic] block based on at least the first sub-pixel value and the second sub-pixel value, and

wherein the first sub-pixel positions ~~is~~ are on either a common vertical axis with integer pixel positions or a common horizontal axis with integer pixel positions, and

wherein the second sub-pixel positions ~~is~~ are not on a common vertical axis with integer pixel positions and not on a common horizontal axis with integer pixel positions."

VIII. Claim 1 of the **second auxiliary request** reads as follows (features added to or deleted from claim 1 of the **first auxiliary request** are underlined or crossed out, respectively):

"A method of predicting video signals, comprising:

obtaining a block of pixels, wherein the block of pixels includes integer pixel values corresponding to integer pixel positions within the block of pixels;

computing first sub-pixel values for first sub-pixel positions of the block of pixels, wherein computing the first sub-pixel values comprises applying a first interpolation filter defining a first one-dimensional array of filter coefficients corresponding to integer pixel filter support positions;

computing second sub-pixel values for second sub-pixel positions of the block of pixels, wherein computing the second sub-pixel values comprises applying a second interpolation filter defining a second one-dimensional array of filter coefficients corresponding to horizontal filter support positions and applying a third interpolation filter defining a third one-dimensional array of filter coefficients corresponding to vertical filter support positions the second or third support positions being integer pixel positions, wherein:

the first one-dimensional array comprises more filter coefficients than the second one-dimensional array;

the first one-dimensional array comprises more filter coefficients than the third one-dimensional array; and

generating a predication [sic] block based on at least the first sub-pixel value and the second sub-pixel value, and

wherein the first sub-pixel positions are on either a common vertical axis with integer pixel positions or a common horizontal axis with integer pixel positions, and

wherein the second sub-pixel positions are not on a common vertical axis with integer pixel positions and not on a common horizontal axis with integer pixel positions."

Reasons for the Decision

1. *All requests, support by the description (Article 84 EPC)*

1.1 Article 84 EPC stipulates that the claims must be supported by the description.

1.2 It is established case law that a claim which does not include a feature described in the application (on proper interpretation of the description) as an essential feature, and which is therefore inconsistent with the description, is not supported by the description for the purpose of Article 84 EPC (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, II.A.5.1).

1.3 Claim 1 of all the requests comprises a step of computing (at least) one second sub-pixel value for (at least) one second sub-pixel position "*compris[ing] applying a second interpolation filter ... and applying a third interpolation filter ...*".

1.4 The claim does not specify any relationship between the output of the second interpolation filter and the input of the third interpolation filter (or vice versa).

1.5 However, according to the equations disclosed in paragraph [0073] of the description as filed, a value obtained by a second (horizontal) interpolation filter is an **intermediate value** fed to the third (vertical) interpolation filter. In fact, not *one* but *N* second interpolation filters must be applied to obtain the *N* values that are to be combined by the third interpolation filter in order to obtain the desired second sub-pixel value (see equation (13) in paragraph [0073]), where N is the number of taps of the third interpolation filter.

1.6 The description does not describe any other alternative for applying a "second interpolation filter" and a "third interpolation filter". Under point 2.10 of the statement of grounds of appeal, the appellant itself noted that the values obtained by the second interpolation filter were "intermediate values", which, in light of paragraph [0073] of the description as filed, are to be understood as the values to be processed by the third interpolation filter.

1.7 In view of this - and since the aim of the application in hand is to "*enhance the accuracy of predictive data used during fractional interpolation ... without a large increase in computational complexity*" (see paragraphs [0008] and [0009] of the description as filed) - the board considers that, on proper interpretation, the relationship between the second and third interpolation filters specified in the description is an essential feature of the invention.

1.8 Since this essential feature is not mentioned in claim 1 of any of the requests, the board had, in its preliminary opinion, expressed the view that none of the requests met the requirements of Article 84 EPC.

1.9 The appellant did not reply in substance to the board's preliminary opinion. Since the board sees no reason to change its view, the preliminary opinion becomes final. Thus, none of the requests meets the requirements of Article 84 EPC.

2. Since none of the requests on file is allowable, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Boelicke B. Willems

Decision electronically authenticated