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Datasheet for the decision of 25 April 2016

Case Number: T 2175/13 - 3.5.05

Application Number: 06787898.3

Publication Number: 1915834

IPC: H04L7/033

Language of the proceedings: EN

Title of invention:
Bit-deskewing input output method and system

Applicant:
ATI Technologies ULC

Headword:
Clock recovery/ATI

Relevant legal provisions:
EPC Art. 84, 111(1)

Keyword:
Clarity - (yes, after amendment)
Remittal to the first instance for further prosecution - (yes)

Decisions cited:

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Case Number: T 2175/13 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 25 April 2016

Appellant: (Applicant)	ATI Technologies ULC One Commerce Valley Drive East Markham, Ontario L3T 7X6 (CA)
Representative:	Robinson, David Edward Ashdown Marks & Clerk LLP 1 New York Street Manchester M1 4HD (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 24 April 2013 refusing European patent application No. 06787898.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	K. Bengi-Akyuerek
	D. Prietzel-Funk

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division to refuse the present European patent application on the ground of lack of clarity (Article 84 EPC) with respect to the claims of a main request and an auxiliary request, as the sole ground for refusal.

By way of an *obiter dictum* under the heading "Further points", the decision under appeal (section 8) also indicated that the subject-matter claimed lacked an inventive step:

> *"In view of the clarity objections set out above, the subject-matter of the independent claims of both the Main Request and the First Auxiliary Request is a mere aggregation and juxtaposition of features that does not achieve any advantage or produce any effect as compared to the best prior art D1 ...".*

II. With the statement setting out the grounds of appeal, the appellant filed amended sets of claims according to a main request and an auxiliary request. It requested that the decision of the examining division be set aside and that a patent be granted on the basis of the main or auxiliary request. In addition, oral proceedings were requested as an auxiliary measure.

III. In an annex to the summons to oral proceedings pursuant to Article 15(1) RPBA, the board gave its preliminary opinion on the appeal. In particular, it raised objections under Articles 123(2) and 84 EPC. The board also informed the appellant that the case could be remitted to the department of first instance, if those

objections were overcome.

IV. By a letter of reply, the appellant submitted amended claims of two further auxiliary requests with the aim of overcoming the objections raised in the board's communication, and requested that the case be remitted to the examining division for further prosecution.

V. By a telefax, the board informed the appellant that it would be minded to remit the case to the department of first instance for further prosecution, in accordance with the appellant's request, on the basis of an accordingly amended third auxiliary request.

VI. With a letter of reply dated 13 April 2016, the appellant filed an amended third auxiliary request and withdrew its higher-ranking claim requests, so that this "third auxiliary request" was its sole claim request on file. It reiterated its request that the case be remitted to the examining division for further prosecution.

VII. By a communication, the board informed the appellant that the scheduled oral proceedings had been cancelled.

VIII. Claim 1 of the **third auxiliary request** (sole claim request) reads as follows:

"A receiver for receiving a plurality of data bits comprising:

a forward strobe clock recovery circuit (112(S)) configurable to align a forward strobe sampling clock (DQSrclk) with a received forward strobe clock (DQS) by generating a forward strobe clock offset (DQSPC) which represents the number of delays required to achieve alignment of the forward strobe

sampling clock (DQSrclk) and the received forward strobe clock (DQS); and

at least one data bit clock recovery circuit (113()) configurable to align a data bit sampling clock (DQrclk) with a received data bit (DQ())

wherein the receiver operates in one of a normal operation, a training phase for the forward strobe clock recovery circuit (112(S)), or a training phase for the data bit clock recovery circuit (113());

wherein the training phase for the forward strobe clock recovery circuit (112(S)) occurs before the training phase for the data bit clock recovery circuit (113()) and normal operation;

wherein during the training phase for the data bit clock recovery circuit (113()) the forward strobe clock recovery circuit (112(S)) is inactive and the at least one data bit clock recovery circuit (113()) is active, and the data bit sampling clock (DQrclk) is aligned with a received data bit (DQ()) by a data bit clock offset with the at least one data bit clock recovery circuit (113()), and wherein the data bit clock offset includes an intermediate data bit clock offset (DQPC()) combined with the forward strobe clock offset (DQSPC), wherein the intermediate data bit clock offset (DQPC) is determined from a phase difference between the data bit sampling clock and the received data bit; and

wherein during normal operation of the receiver, the at least one data bit clock recovery circuit (113()) is inactive, the forward strobe clock recovery circuit is active, the intermediate data bit clock offset (DQPC()) is fixed, and the data bit clock offset varies with the forward strobe clock offset (DQSPC); and

wherein during the training phase for the forward strobe clock recovery circuit the forward strobe clock recovery circuit (112(S)) is active, the at least one

data bit clock recovery circuit is inactive, and the forward strobe clock recovery circuit aligns the forward strobe sampling clock (DQSrclk) with the received forward strobe clock (DQS)."

The further independent claim 15 of this claim request is directed to a corresponding method.

Reasons for the Decision

1. SOLE CLAIM REQUEST

This claim request ("third auxiliary request") was filed in response to the objections raised by the board under Articles 84 and 123(2) EPC (cf. point III above), and differs from the auxiliary request underlying the appealed decision essentially in that independent claims 1 and 15 as amended now specify that (emphasis added by the board)

A) the forward strobe clock recovery circuit is configurable to align a forward strobe sampling clock with a received forward strobe clock by generating a forward strobe clock offset which represents the number of delays required to achieve alignment of the forward strobe sampling clock and the received forward strobe clock;
B) the receiver operates in one of a normal operation, a training phase for the forward strobe clock recovery circuit, or a training phase for the data bit clock recovery circuit;
C) the training phase for the forward strobe clock recovery circuit occurs before the training phase for the data bit clock recovery circuit and normal operation;

D) during the training phase for the data bit clock recovery circuit, the forward strobe clock recovery circuit is inactive and the at least one data bit clock recovery circuit is active, and the data bit sampling clock is aligned with a received data bit by a data bit clock offset with the at least one data bit clock recovery circuit, wherein the intermediate data bit clock offset is determined from a phase difference between the data bit sampling clock and the received data bit;

E) during normal operation of the receiver, the at least one data bit clock recovery circuit is inactive and the forward strobe clock recovery circuit is active;

F) during the training phase for the forward strobe clock recovery circuit, the forward strobe clock recovery circuit is active, the at least one data bit clock recovery circuit is inactive, and the forward strobe clock recovery circuit aligns the forward strobe sampling clock with the received forward strobe clock.

Feature A) is supported by page 5, lines 23-27 in conjunction with Figure 1 of the application as originally filed. Features B) and C) find their support in page 5, line 29 to page 7, line 6 in combination with Figure 2. Feature D) is based on page 6, lines 2-20 in conjunction with Figure 1 and Figure 2, steps 208 and 210. Feature E) is based on page 6, lines 24-29 in conjunction with Figure 2, steps 212 and 214, while feature F) is supported by page 7, lines 9-20 in conjunction with Figure 2, steps 204 and 206 of the original application. Hence, the amendments according to features A) to F) comply with Article 123(2) EPC.

1.1 Clarity (Article 84 EPC)

As a result of the amendments made to independent claims 1 and 15 in response to the objections under Article 84 EPC raised by the examining division (cf. appealed decision, sections 4 and 5) and by the board (cf. board's communication under Article 15(1) RPBA, sections 2.1 and 3.1), the board is satisfied that those deficiencies are overcome. Consequently, the sole ground for refusal, namely lack of clarity as regards the application's independent claims, no longer applies.

1.2 Article 52(1) EPC: novelty and inventive step

The compliance of the present application with the requirements of Article 52 EPC, in particular novelty and inventive step, was not decided in the appealed decision. Only a cursory statement as to inventive step was provided in its *obiter dictum* (cf. point I above). Thus, the board does not consider itself in a position to assess the correctness of any conclusion of the first-instance department as regards novelty and inventive step.

2. *Remittal of the case for further prosecution*

2.1 The appellant requested that the case be remitted to the examining division for further prosecution based on the "third auxiliary request" (cf. points IV and VI above).

2.2 In view of the fact that the present claims according to the "third auxiliary request" were filed for the very first time in the appeal proceedings in order to overcome all the formal objections (under Articles 84

and 123(2) EPC) raised in the first and second-instance proceedings, the board concludes that under the present circumstances it is not appropriate to take a final decision on the matters of novelty and inventive step for the first time in the appeal proceedings.

2.3 For these reasons, the board decides, in the exercise of its discretion conferred by Article 111(1) EPC and in accordance with the appellant's request, to remit the case to the department of first instance for further prosecution, on the basis of claims 1 to 18 submitted as "third auxiliary request" with the letter dated 13 April 2016.

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 for further prosecution.

The Registrar: The Chair:

L. Malécot-Grob A. Ritzka

Decision electronically authenticated