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**Datasheet for the decision
of 5 October 2020**

Case Number: T 1732/15 - 3.5.02

Application Number: 08006405.8

Publication Number: 2031757

IPC: H03K3/356, G06F9/38

Language of the proceedings: EN

Title of invention:

Sequential circuit element including a single clocked transistor

Applicant:

Qualcomm Incorporated

Relevant legal provisions:

RPBA Art. 13(1)
EPC Art. 123(2)

Keyword:

Late-filed requests - main request and auxiliary requests I and II - justification for late filing (yes)
Amendments - main request and auxiliary requests I and II - allowable (no)



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Case Number: T 1732/15 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 5 October 2020

Appellant: Qualcomm Incorporated
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 14 July 2015
refusing European patent application No.
08006405.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Lord
Members: H. Bronold
W. Ungler

Summary of Facts and Submissions

- I. The appeal of the patent applicant lies from the decision of the examining division to refuse European patent application No. 08 006 405.8 due to lack of inventive step.
- II. In a communication under Article 15(1) RPBA, the board informed the appellant *inter alia* of its preliminary opinion, that claim 1 according to the pending requests as underlying the contested decisions contravened Article 123(2) EPC.
- III. With their reply dated 3 March 2020, the appellant filed a new main request as well as auxiliary requests I and II and requested grant of a patent based on the claims of those requests.

In addition, the appellant filed several requests to hold the oral proceedings by videoconference or to postpone the oral proceedings with their letters dated 2 June 2020, 24 September 2020, 30 September 2020 and 2 October 2020. In the last of these letters the appellant requested postponement of the oral proceedings until videoconference facilities were available, the grant of a patent on the basis of the claims of their main request or one of their auxiliary requests I and II as filed with letter dated 3 March 2020, or, in the case that the board decided not to admit the requests filed on 3 March, the grant of a patent on the basis of one of their main and auxiliary requests filed with letter dated 12 August 2015, or the remittal of the case to the examining division if the board considered that "any of

the independent claims of any of the abovementioned requests overcomes some objections raised in the abovementioned decision and/or the preliminary opinion of the Board, while some minor formal issues would still remain".

- IV. The requests to hold the oral proceedings per videoconference or to postpone the oral proceedings were refused by the board in communications dated 30 September 2020 and 2 October 2020. The oral proceedings before the board were held on 5 October 2020 in the absence of the appellant, as announced in the appellant's letter dated 2 October 2020.
- V. Independent claim 1 according to the main request reads as follows:

"A method comprising:
selectively propagating data via a first path (112, 212, 334) of a sequential circuit element (102, 202, 406, 408, 412, 414, 418, 420, 711) in response to a clock signal (106, 206, 308, 404) received at a single clocked transistor (110, 214, 326, 422, 424) of the sequential circuit element (102, 202, 406, 408, 412, 414, 418, 420, 711), wherein when the clock signal (106, 206, 308, 404) is high, data is propagated (606) and when the clock signal (106, 206, 308, 404) is low, data is not propagated and the first path (112, 212, 334) is blocked, wherein the first path (112, 212, 334) includes a first transistor (210, 324), wherein the first transistor (210, 324) is an n-channel transistor and is responsive to an output of the single clocked transistor (110, 214, 326, 422, 424)

characterized in that

when the clock signal (106, 206, 308, 404) is low, retaining (608) information related to the data

propagated via the first path (112, 212, 334) at a retention circuit element (116, 222) of a second path (114, 218, 336) coupled to the first path (112, 212, 334), wherein the retention circuit element (116, 222) comprises at least two transistors (316, 330) and an inverter (322), wherein at least one transistor (316) of the at least two transistors (316, 330) is a p-channel transistor and wherein at least one other transistor (330) of the at least two transistors (316, 330) is an n-channel transistor and wherein the inverter (322) includes a first terminal coupled to the first data path (112, 212, 334) and wherein the first transistor (210, 324) having a current flow capacity higher than each of the at least two transistors (316, 330) associated with the second path (114, 218, 336) allowing the first transistor (210, 324) to overcome any contention with the two transistors (316, 330) of the retention circuit element (116, 222) and wherein the information retained at the retention circuit element (116, 222) is retained without applying the clock signal (106, 206, 308, 404) to the retention circuit element (116, 222)."

Independent claim 6 defines a device comprising corresponding features.

- VI. Independent method claim 1 according to each of auxiliary requests I and II contains inter alia the following additional features:
- in the preamble it is further specified that the first transistor "comprises a gate terminal connected to a data input (114, 204, 306) and another terminal connected to a first node (342) in the first path (112, 212, 334)", and
 - in the characterising portion it is further specified that the at least one transistor "comprises a gate

terminal connected to a second node (344) and another terminal connected to a third node (340)", that the at least one other transistor "comprises a gate terminal connected to the third node (340) and another terminal connected to the second node (344), and that the first terminal of the inverter is further coupled to "the second node (344) and another terminal connected to the third node (340)".

Independent device claim 6 according to each of the auxiliary requests I and II comprises identical amendments to those in the corresponding claim 1.

VII. The appellant's arguments, as far as they are relevant for the appeal, can be summarised as follows:

The oral proceedings had to be carried out per video conference or postponed until videoconference facilities were available. On 24 September 2020, the Covid-19 7-day incidence value for Munich had exceeded 50. Thus, travelling to Munich was unreasonable. The fact that the 7-day incidence value for Munich had fallen to 37,92 did not change this, because 37,92 was still above the "early warning level" of 35. Restrictions were in force in Munich and it was not foreseeable that this would change prior to the date of the oral proceedings. The fact that the 7-day incidence value in the Munich outskirts (Haar) was even lower was not relevant because the representative would have taken the train and would therefore have needed to travel through Munich city. It was further not conceivable why one board of appeal had accepted to hold oral proceedings per video conference on 6 October 2020 whereas the present board of appeal had refused to do so under the same conditions for 5 October 2020. The limited number of videoconference

facilities could not be an objective standard, because this limitation was the same for all boards. Due to the very limited flight connections between Munich and Düsseldorf, an adequate preparation for the following oral proceedings on 6 October 2020 would not have been possible.

The objection under Article 123(2) EPC had been raised for the first time in the board's communication under Article 15(1) RPBA 2020. Amendments to overcome this objection were therefore admissible. The amendments carried out in the independent claims according to the main request and auxiliary requests I and II overcame the board's objections under Article 123(2) EPC. Paragraph [0037] of the originally filed application disclosed that the first transistor was an n-channel transistor, transistor p2, one of the at least two transistors in the retention circuit element, was a p-channel transistor and transistor n3, which was another one of the at least two transistors in the retention circuit element, was an n-channel transistor. Further, the first transistor had a higher flow capacity than each of the at least two other transistors. The amendments made to the new main request were therefore directly and unambiguously derivable from the application as filed and were in compliance with Article 123(2) EPC. The amendments in auxiliary request I specified the connections of the transistors within the circuitry in more detail based on figure 3 and paragraphs [0028] to [0040] of the originally filed application. Thereby, it was explicitly highlighted how the transistors were connected to the data input, the first path, the inverter, and to each other. The amendments in auxiliary request II were based on paragraph [0020] of the originally filed application.

Reasons for the Decision

1. Admissibility of the appeal

The appeal was filed in due time and form and sufficiently substantiated. Therefore, the appeal is admissible.

2. Requests for a videoconference or to postpone the oral proceedings

2.1 The requests to hold the oral proceedings by videoconference or to postpone the oral proceedings until they could be held by a videoconference were refused.

2.2 In general, oral proceedings may be conducted by videoconference in order to avoid travel for one or more parties only if all sides agree. This agreement includes that of the board, which in the present case had attempted to book a videoconference room to hold the oral proceedings by videoconference. Unfortunately, no room was available on 5 October 2020.

Before the appellant's letter dated 24 September 2020, nothing in the file indicated that the responsible representative had moved from Munich to Düsseldorf. All the letters up to that date were sent from the representative's Munich office, including the letter dated 2 June 2020 requesting a videoconference for the first time. As such, nothing in the file indicated that holding the oral proceedings by videoconference might

be appropriate in order that the appellant did not have to travel, because it was assumed that the appellant's representative was anyway in Munich. Thus, no urgent need to arrange the oral proceedings by videoconference was apparent.

The board acknowledges that, should an official travel warning or restriction have been issued by the German or Bavarian government, no party should have been forced to be present in oral proceedings before the boards during a phase when such a travel restriction was in force.

However, regarding the 7-day incidence value (of new Covid-19 cases per 100,000 population) the board is not convinced that a value of 50 and above alone can be regarded as an official travel warning, and even less as an official travel restriction. In the process of setting an official travel restriction into force, the 7-day incidence value is merely one of a plurality of indicators to be considered by the authorities. The board is thus consequently even less convinced that a 7-day incidence value below 50 but above 35 can be already regarded as a travel restriction and that consequently oral proceedings in a region where this value is exceeded are to be considered unreasonable.

2.3 During the first phase of the coronavirus pandemic earlier this year when official travel restrictions were in force, the board had already acted accordingly and proactively postponed the oral proceedings in the present case from 27 April 2020 to 5 October 2020.

However, the situation around the date of oral proceedings on 5 October 2020 no longer fell under the conditions that existed in April 2020.

Contrary to the appellant's argument, the 7-day incidence value for the city of Munich was not above 50 on 24 September 2020. In fact, the official 7-day incidence value reported by the Bayerisches Landesamt für Gesundheit und Lebensmittelsicherheit (LGL) as published by the city of Munich for 24 September 2020 was 42.47 and had been declining for some days already.

Thus, even if one were to consider a 7-day incidence value above 50 as an official travel restriction, nothing would have justified refusing to travel to Munich on 5 October 2020 because the 7-day incidence value was nowhere near 50 on that day. For 30 September 2020 the 7-day incidence had already fallen to 37.92 and for 5 October 2020 to 32.48. The value for Haar was even lower at 26.97. The 7-day incidence value for Düsseldorf, the representative's place of residence, on 5 October 2020 was indicated by the Landeshauptstadt Düsseldorf to be 28.0 and thus at a comparable level.

Therefore, the board concludes that the 7-day incidence value for Munich did not justify postponement of the oral proceedings on 5 October 2020, even less so the 7-day incidence value in Haar, which was then well below 35.

2.4 The appellant also argued that the increased 7-day incidence values in Munich had led to specific restrictions which were still in force and which rendered the representative's presence at the oral proceedings unreasonable.

The board is not convinced by this argument. It may be true that specific measures were in force in Munich,

which exceeded the general restrictions of wearing masks in public transport or to keep distance. However, these specific measures related to the maximum number of people allowed at events taking place in outdoors or indoors, in private or in public, the consumption of alcohol in public place etc. Since none of these specific measures seems to have any implication on general travelling or holding oral proceedings, the board cannot identify any bearing that such restrictions should have on the conduct of oral proceedings before the boards.

- 2.5 The appellant's argument that the flight connections between Munich and Düsseldorf were limited does not convince the board either. The board cannot identify how this limited availability of flights should have affected the preparation for oral proceedings on the next day. The summons to attend oral proceedings in the present case on 5 October 2020 were issued in April 2020. The board considers a period of 6 months more than sufficient to adequately prepare corresponding travel arrangements (including travelling by train as well). The fact that the representative of his own volition decided not to be present in Munich on the day following the oral proceedings before this board and instead to request that the oral proceedings on the following day be conducted by video conference from Düsseldorf lies exclusively in the representative's responsibility and can therefore not justify a postponement of the oral proceedings in the present case.

3. Admittance of the requests dated 3 March 2020

The appellant's main request and the auxiliary requests I and II as filed on 3 March 2020 represent a reaction to an objection under Article 123(2) EPC raised in the board's communication under Article 15(1) RPBA 2020.

The board therefore exercised its discretion under Article 13(1) RPBA 2020 to admit the new main request and auxiliary requests I and II into the appeal proceedings.

4. Amendments - Article 123(2) EPC

4.1 In the communication under Article 15(1) RPBA the board had raised an objection under Article 123(2) EPC against the former main request and against the former auxiliary request pending at that time because all independent claims according to the main request and the auxiliary request comprised the feature "the first transistor ...having a current flow capacity higher than each of the two transistors".

With respect to the differences in current flow capacity, the board indicated that it tended to the opinion that the embodiment according to figure 3, which is the embodiment having a retention circuit element with two transistors and an inverter, disclosed different current flow capacities not only for the transistors of the retention circuit element but for all transistors of the sequential circuit element, as was apparent in particular from paragraphs [0033] to [0037] of the originally filed description and figure 3.

The corresponding feature of the independent claims thus seemed to constitute an inadmissible generalisation. The present main request and the auxiliary requests I and II are not suitable to overcome the board's preliminary opinion.

The corresponding original disclosure in paragraph [0037] reads:

"In general, the p-channel transistors (p_1 and p_2) 312 and 316 and the n-channel transistors (n_3 and n_4) 330 and 332 are weak transistors relative to the n-channel transistors (N_1 and N_2) 324 and 328. The p-channel transistors (p_1 and p_2) 312 and 316 and the n-channel transistor (n_3) 330 are weak because they have less current carrying capacity than the n-channel transistors (N_1 and N_2) 324 and 328. Whenever the data (d) is inverted, at least one of the weak p-channel transistors 312 and 316 (sometimes referred to as keepers) briefly causes contention. However, the circuit device 300 does not rely on the weak p-channel transistors 312 and 316 to pull up the timing-critical nodes, such as the nodes (x and y) 342 and 344. When the clock signal (ϕ) is low, the single clocked transistor 326 is inactive and the node 338 (i.e., the output terminal of the single clocked transistor 326) is at a floating voltage level. The n-channel transistor (N_1) 324 turns off, and data (d) at the data input 306 is not propagated. The inverter 322, the node 340, the p-channel transistor (p_2) 316, the n-channel transistor (n_3) 330, and the p-channel transistor (p_1) 312 operate to retain state information related to the data propagated via the first data path 334."

4.2 Although the independent claims according to the pending main request and auxiliary requests I and II have been amended to include some details of the transistors originally described in this paragraph and depicted in figure 3, namely that at least one transistor of the at least two transistors is a p-channel transistor and at least one other of the at least two transistors is an n-channel transistor, none of the independent claims of these requests comprises all the details of the transistors as originally disclosed in the above-mentioned paragraphs [0033] to [0037] together with figure 3. No reasons were presented why an extraction of some of the detailed information regarding the transistors was allowable.

Having regard to the original disclosure of the embodiment shown in figure 3, it is clear that without p-channel transistors 312 and 316 and n-channel-transistors 330 and 332 being defined as weak relative to n-channel transistors 324 and 328, the circuit shown in figure 3 cannot function as described in paragraphs [0033] to [0037]. The omission of the corresponding detailed definition of the transistors as p-channel transistors and n-channel transistors and their current flow capacity as disclosed in paragraph [0037] in the independent claims of the main request thus represents an inadmissible intermediate generalisation. The same applies for auxiliary requests I and II.

4.3 Further, no argument has been presented as to why such an intermediate generalisation was allowable under Article 123(2) EPC. In the reply dated 3 March 2020 the appellant merely copied parts of paragraph [0037] in his letter, repeated that transistor 316 was a p-channel transistor and transistor 330 was a n-channel transistor and alleged that hence the amendments to the

independent claims were directly and unambiguously derivable from the application as filed without any further explanation.

4.4 The appellant's reply moreover contained no argument answering the board's objection that the missing definition of the transistors constituted an inadmissible intermediate generalisation. The board is thus not convinced that the objection under Article 123(2) EPC raised in the communication under Article 15(1) RPBA 2020 has been overcome.

4.5 Further, not only are the added features not suitable to overcome the board's objection under Article 123(2) EPC, the features added to the main request and the auxiliary requests I and II also introduce new technical information, which extends even further beyond the content of the application as originally filed.

In particular, the feature "wherein at least one transistor (316) of the at least two transistors (316, 330) is a p-channel transistor and wherein at least one other transistor (330) of the at least two transistors (316, 330) is an n-channel transistor" explicitly includes the case that transistor 316 is an n-channel transistor and transistor 330 is a p-channel transistor, although there is original disclosure only for the contrary, i.e. transistor 316 being a p-channel transistor and transistor 330 being an n-channel transistor. Consequently, the subject-matter of the independent claims according to the main request and auxiliary requests I and II covers new technical information that was not contained in the application as originally filed.

4.6 The independent claims according to auxiliary requests I and II comprise further additional technical information. Although some of the connections of the circuitry of the embodiment described with respect to figure 3 are specified in these requests, the amendments do not define the whole circuit as defined in the originally filed description and drawings. In particular, it is left open which of the "other terminals" of the p-channel transistor and the n-channel transistor of the retention circuit element are connected to the second and third nodes, respectively. Moreover, the direction in which the inverter is connected to the first path, the second node and the third node is left open as well. Therefore, the subject-matter of the independent claims according to auxiliary requests I and II comprises additional new technical information that was not contained in the application as originally filed.

4.7 Therefore, all independent claims according to all pending requests (of 3 March 2020) comprise inadmissible intermediate generalisations and generalisations that extend beyond the content of the application as originally filed.

Consequently, the board has arrived at the conclusion that all independent claims according to the main request and the auxiliary requests I and II contravene Article 123(2) EPC.

Therefore, the board concludes that, although admitted to the proceedings by the board under Article 13(1) RPBA 2020, none of the appellant's main request and auxiliary requests I and II as filed with letter dated 3 March 2020 is allowable.

5. Requests of 12 August 2015

According to item 4) of the appellant's letter dated 2 October 2020, the appellant's requests indicated as having been filed on 12 August 2015 would have become procedurally effective only if the board were to decide not to admit the main request and the auxiliary requests I and II of 3 March 2020. The condition for re-introduction of the requests indicated as having been filed on 12 August 2015 is thus not fulfilled. Thus, there is no need to deal with these requests.

6. Request for remittal

Since the main request and auxiliary requests I and II are not allowable because they each contravene Article 123(2) EPC, a remittal to the department of first instance for further examination of those requests would inevitably lead to the same result, because according to Article 111(2) EPC the examining division would be bound by the *ratio decidendi* of the board with respect to Article 123(2) EPC. Therefore, remittal of the case would serve no purpose.

Concerning the details of the appellant's request for remittal (item 5) of the letter of 2 October 2020), the board does not consider it as its responsibility to search for possibly allowable subject-matter in a patent application on the appellant's behalf. In the present proceedings, this would even contravene the principle of two distinct independent instances because any reasoning of the board under the conditions defined by the appellant with respect to their request to remit would inevitably imply the board's opinion about

allowable aspects of the patent application that still needed to be decided by the examining division independently. Therefore also this argument does not justify remittal.

Consequently, the request for remittal is refused.

7. Conclusion

As none of the appellant's relevant requests is allowable, the board cannot accede to any of the appellant's requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



U. Bultmann

R. Lord

Decision electronically authenticated