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Datasheet for the decision of 8 July 2015

Case Number: T 0681/14 - 3.5.05

Application Number: 09700008.7

Publication Number: 2122447

IPC: G06F3/048, G06F17/30, G06F17/22

Language of the proceedings: EN

Title of invention:
Touch event processing for web pages

Applicant:
APPLE INC.

Headword:
Tracking web-page gestures/APPLE

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (yes, after amendment)

Decisions cited:

Catchword:

Beschwerdekammern
Boards of Appeal
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Case Number: T 0681/14 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 8 July 2015

Appellant: (Applicant)	APPLE INC. 1 Infinite Loop Cupertino, CA 95014 (US)
Representative:	Gillard, Matthew Paul Withers & Rogers LLP 4 More London Riverside London SE1 2AU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 8 October 2013 refusing European patent application No. 09700008.7 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 novelty (Article 54 EPC) with respect to the claims of a main and a first auxiliary request, having regard to the disclosure of

D1: US-A-2005/0162402,

and on the ground of added subject-matter (Article 123(2) EPC) in respect of the claims of a second and third auxiliary request.

Moreover, in an *obiter dicta* part of the decision under appeal (sections 15.1 to 15.9), the examining division also expressed its opinion that the subject-matter of claim 1 of all claim requests on file was not inventive over the combined disclosures of D1 and

D2: "Document Object Model (DOM) Level 2 Events Specification", Version 1.0, W3C Recommendation, pp. 1-47, 13 November 2000.

In addition, the following prior-art document was also cited in the decision under appeal as support for the proper interpretation of D1:

D11: M.H. Brown and M.A. Najork: "Distributed active objects", Computer Networks and ISDN Systems, Vol. 28, No. 11, pp. 1037-1052, May 1996.

II. With the statement setting out the grounds of appeal, the appellant filed new sets of claims as a main request and four auxiliary requests. It requested that

the decision of the examining division be set aside and that a patent be granted on the basis of one of those claim requests.

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 Article 56 EPC with regard to all claim requests on file, mainly having regard to D2 combined with the disclosure of

D12: S. Ramachandran and R. Kashi: "An Architecture for Ink Annotations on Web Documents", Proceedings of the Seventh International Conference on Document Analysis and Recognition, pp. 256-260, August 2003.

Prior-art document D12 was introduced into the appeal proceedings by the board under Article 114(1) EPC due to its relevance for the assessment of novelty and inventive step of the underlying subject-matter.

Furthermore, the appellant was also informed that, regardless of whether or not the appeal was considered to be allowable, the board could not see that any procedural violation, let alone a *substantial* one within the meaning of Rule 103(1)(a) EPC, occurred in the examination proceedings.

IV. With a letter of reply, the appellant submitted amended claims according to five additional auxiliary requests as auxiliary requests A to E.

V. Oral proceedings were held as scheduled on 8 July 2015, during which the appellant filed a new claim request (auxiliary request D'') as its main and sole claim

request, replacing all the claim requests on file.

The appellant's final request was that the decision under appeal be set aside and that a patent be granted on the basis of the claims of auxiliary request D'' submitted during the oral proceedings before the board.

At the end of the oral proceedings, the decision of the board was announced.

VI. **Claim 1** of auxiliary request D'' (sole request) reads as follows:

"A method, comprising:

receiving touch input signals associated with one or more elements (102—108) of a web page (100) displayed on a touch sensitive device (400);

processing the touch input signals to determine if the touch input signals are associated with a touch gesture made with respect to the one or more elements (102—108) of the web page (100), wherein processing the touch input signals includes determining touch events based on the touch input signals, the touch events including a touch start event, one or more touch move events, and a touch end or touch cancel event; and

if the touch input signals are associated with a touch gesture, processing the touch events into gesture events using a touch model, said processing of the touch events including combining a plurality of the touch events into a gesture event containing scale and/or rotation information, and forwarding the gesture events to the web page (100) for further processing;

wherein the gesture events include a gesture start event, a gesture change event and a gesture end event."

The further independent **claim 11** of this auxiliary

request is directed to a corresponding computer program.

Reasons for the Decision

1. AUXILIARY REQUEST D''

Although this claim request was submitted for the first time during the oral proceedings before the board, i.e. at a very late stage of the overall procedure, the board admitted it into the appeal proceedings by virtue of Article 13(1) and (3) RPBA, since it was considered a legitimate and eventually successful attempt (see point 1.2 below) to overcome the objections raised by the board.

1.1 Independent claims 1 and 11 of the present claim set differ from those of the main request refused by the examining division essentially in that they now specify that (emphasis added by the board)

A) processing the touch input signals includes determining touch events based on the touch input signals;
B) the touch events include a touch start event, one or more touch move events, and a touch end or touch cancel event;
C) the touch events are processed into gesture events using a touch model;
D) said processing of the touch events include combining a plurality of the touch events into a gesture event containing scale and/or rotation information;
E) the gesture events include a gesture start event, a gesture change event and a gesture end event.

Amendment A) is supported e.g. by paragraph [0017] of the application as filed. Amendment B) is based on paragraph [0024] whilst amendments C) to E) find their support in paragraph [0025] of the original application. Hence, the board is satisfied that the above amendments comply with Article 123(2) EPC.

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

In the board's judgment, the present independent claims meet the requirements of Article 52(1) EPC in conjunction with Articles 54 and 56 EPC, for the following reasons:

1.2.1 The present invention concerns the implementation of a touch-event model to be used for processing user touch inputs on web pages displayed on a touch-screen device. Those web pages are supposed to be organised and handled based on the well-established Document Object Model (DOM) standard. According to the application, the problem to be solved by the invention is to correctly interpret touch events (rather than mouse events) on a touch-screen device and to allow web-page developers to fully utilise its capabilities (cf. [0003], last sentence of the application as filed).

1.2.2 Document D1 was regarded as novelty-destroying prior art for the subject-matter of claim 1 of the former main and auxiliary requests in the decision under appeal (cf. sections 6 and 8). Following the amendments made to the present independent claims as set out in point 1.1 above, the board finds that D1 fails to directly and unambiguously disclose at least features B), D) and E), i.e. the classification of different touch and gesture event types into specific event categories together with the provision of scale and/or

rotation data. Hence, the subject-matter of the present independent claims is found to be novel vis-à-vis D1 (Article 54 EPC).

1.2.3 For the purpose of assessing inventive step the board regards document D12, introduced by the board (cf. point III above), as the most suitable starting point, since it is - unlike D1 - directed to DOM-type processing of user touch inputs (i.e. pen inputs representing ink annotations on documents) on active HTML-based web pages, like the present invention. The board holds that D12 discloses the following limiting features of claim 1:

A method comprising the steps of:

a) receiving touch input signals ("ink points") associated with elements of a web page displayed on a touch-sensitive device (see e.g. section 3, first paragraph in conjunction with Fig. 2);

b) processing the touch input signals including determining touch events ("ink coordinates") based on the touch input signals to determine if the touch input signals are associated with a touch gesture made with respect to the elements of the web page (see e.g. section 4, second paragraph, third sentence: *"... ink points are first converted into coordinates ..."* and section 1, last paragraph, first sentence: *"... capturing ink coordinates ... and associating the ink with the underlying objects on the web pages ..."*);

c) if the touch input signals are associated with a touch gesture, processing the touch events into gesture events (i.e. gestures "left", "right", "up", "down"; see Table 1) using a touch model (see e.g. section 3.1, first paragraph, second sentence: *"The algorithm ... determines the slope*

of the best-fit line obtained by the ink coordinates captured in the gesture mode");

d) said processing of the touch events including combining the touch events into a gesture event (see e.g. section 1, last paragraph, last sentence: "*... the ink captured is treated as a pen gesture ...*" in conjunction with Table 1);

e) forwarding the gesture events to the web page for further processing (see e.g. section 3.1, second paragraph, first sentence: "*The ink-gesture is checked ... and on a match the appropriate gesture handlers are invoked*" in conjunction with Table 1).

1.2.4 Hence, the board concludes that the subject-matter of claim 1 differs from the disclosure of D12 in that

f) the touch events include a touch start event, one or more touch move events and a touch end/cancel event;

g) the gesture events include a gesture start event, a gesture change event and a gesture end event;

h) the gesture events contain scale and/or rotation information.

Accordingly, the subject-matter of claim 1 is also novel over D12 (Article 54 EPC).

1.2.5 The overall technical effect caused by distinguishing features f) to h) was extensively discussed at the oral proceedings before the board. The board takes the view that the mere classification of different touch and gesture events at a conceptual level only, according to features f) and g), does not in itself warrant an inventive step. However, the appellant persuasively argued that the additional provision of scale or

rotation information via the specific gesture events by virtue of feature h) synergistically yields the technical effect that the temporal development of multi-touch gestures (in particular resizing and rotation gestures as implied by feature h) via the terms "scale" and "rotation") may easily be tracked. This is essentially due to the fact that detecting the start, change and termination of gesture and touch events along with scaling or rotation data associated with a gesture enables the gesture's time progression to be monitored, to the benefit of both the user and the web-page developer. The board is also satisfied that the above effect can be derived from the application as filed (see e.g. paragraph [0025]).

1.2.6 From the above it follows that the objective problem to be solved by claim 1 may be formulated as "how to keep track of the dynamic evolution of multi-touch gestures applied to web pages displayed on the touch-screen device of D12".

1.2.7 Starting from the teaching of D12, the skilled person would notice that D12 relies solely on very basic gestures (i.e. gestures like "left", "right", "up" and "down"; see Table 1) and only aims at covering possibly more complex gestures at some time in the future, whatever they may be (see D12, section 3.1, second paragraph). However, it is evident to the board that there is no hint whatsoever in D12 which would lead the skilled person in the field of user interface design to even think about the problem or necessity of monitoring the time progression of certain gestures. In particular, for the basic gestures supported in D12, there is no arguable need for tracking and displaying their evolution over time, as the user is typically expected to immediately realise the result of the

corresponding left, right, up or down movements made on the touch-screen device. Nor is any motivation or incentive discernible in D12 towards the solution according to features f) to h) of claim 1, i.e. classifying different groups of gesture events made up of distinct touch events whilst providing different scale or rotation information associated with them. On the contrary, the board considers that the skilled person would in fact be deterred from applying the claimed solution, since he/she would be aware that additionally determining and delivering meta data such as scale and rotation information would markedly increase the complexity and the resulting processing delays of the touch-screen system of D12. Thus, contrary to the assertion made by the examining division in the *obiter dicta* part of the decision under appeal (see section 15.10), the solution according to present claim 1 goes beyond the mere construction of higher-level gesture events from lower-level DOM-based touch events.

Hence, starting from D12, the board sees no reason why the skilled person would come up with the claimed solution which is believed to sufficiently characterise the over-arching concept of tracking a multi-touch gesture from start to finish and thus credibly provides a technical effect going beyond the sum of the individual effects of its distinguishing features. The above observations apply likewise to the corresponding independent claim 11.

1.2.8 Furthermore, the board holds that none of the remaining relevant prior-art documents on file renders the subject-matter of claims 1 and 11 obvious, whether taken alone or in combination with the disclosure of D12, for the following reasons:

Document D1 relates to gesture recognition for alphanumeric inputs made on a touch pad separate from the display based on display regions and visual feedback (partly also for web pages). However, it is - apart from web browsing (see D1, [0068]) - completely silent as to the use of dynamic web-page processing and in particular as to recognising gestures composed of touch events supplemented with scaling and rotation data detected on web pages. As a consequence, there is neither a need nor a desire discernible in D1 for establishing and displaying the temporal progression of gesture events, let alone for *multi-touch* gesture events.

Document D2 addresses merely the issue of web-page input processing for conventional desktop devices (e.g. mouse input events) based on different HTML object elements such as text or graphic objects, whilst failing to provide any incentive to implement recognition of multi-touch gestures including scaling and rotation data detected on web pages.

Document D11 was cited in the decision under appeal solely as evidence of the skilled person's common general knowledge as regards utilising active objects as web-page regions with respect to D1. There is however no enticement whatsoever for the recognition of multi-touch gestures together with gesture-related meta data detected on web pages.

Therefore, even if the teachings of D12 and the above documents were combined, the skilled person would not end up with the claimed solution.

1.3 For the above reasons, the subject-matter of present independent claims 1 and 11 is held to be new and to

involve an inventive step within the meaning of Article 52(1) EPC in conjunction with Articles 54 and 56 EPC in the light of the cited prior art.

2. Since all the other requirements of the EPC are also found to be fulfilled, the board decides that a patent is to be granted on the basis of the claims according to auxiliary request D''.

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 with the order to grant a patent on the basis of claims 1 to 21 of auxiliary request D'' submitted during the oral proceedings, and a description and drawings to be adapted.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated