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Datasheet for the decision
of 7 July 2015

Case Number:	T 2488/13 - 3.5.05
Application Number:	09700006.1
Publication Number:	2232357
IPC:	G06F3/048, G06F17/22, G06F17/30
Language of the proceedings:	EN

Title of invention:
Touch event model for web pages

Applicant:
APPLE INC.

Headword:
Detecting web-page gestures/APPLE

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - main request (no): obvious gesture extension
Inventive step - auxiliary request (yes, after amendment)

Decisions cited:

Catchword:

Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 2488/13 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 7 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 15 July 2013 refusing European patent application No. 09700006.1 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 grounds of lack of inventive step
        (Article 56 EPC) with respect to the claims of a main
        request and an auxiliary request, having regard to the
        disclosure of

        D1:   US-A-2005/0162402

        combined with the skilled person's common general
        knowledge as exemplified by

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

        The following prior-art documents were also cited in
        the decision under appeal as evidence of the skilled
        person's common general knowledge:

        D10:   "Java Programming/Applets/Event Listeners",
               Internet document, 1 May 2007;
        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.

        Further prior-art documents quoted in the course of the
        examination proceedings included the following:

        D3:   EP-A-1 517 228;
        D6:   US-A-2006/0026521.

II.   With the statement setting out the grounds of appeal,
        the appellant filed amended sets of claims as a main

request and two 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 the filed 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 123(2) EPC with regard to the first auxiliary request and under Article 56 EPC with regard to the other 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.

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

V. Oral proceedings were held as scheduled on 7 July 2015, during which the main request and the first auxiliary request ("auxiliary request A") were discussed. Following this discussion the appellant withdrew all other 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 the main request or of auxiliary request A.

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

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

"A method for processing touches comprising:
receiving (302) simultaneous touch input signals associated with two or more regions of a web page (100) displayed on a touch sensitive device (400), wherein each region is associated with a different respective node (152-160) in a document object model (150);
determining (304) two or more separate touch events associated with the two or more regions of the web page based on the touch input signals;
detecting a gesture event by combining the two or more separate touch events associated with the two or more regions of the web page; and
sending the gesture event to the web page for processing."

Claim 1 of **auxiliary request A** reads as follows:

"A method for processing touches comprising:
receiving (302) first and second touch input signals simultaneously, wherein the first and second touch input signals are associated with first and second regions, respectively, of a web page (100) displayed on a touch sensitive device (400), wherein each region is associated with a different respective node (152-160) in a document object model (150), the first touch input signal corresponds to a first touch input at a first location that corresponds to the first region of the web page, the second touch input signal

corresponds to a second touch input at a second
location that corresponds to the second region of the
web page, and the second location is distinct from the
first location;

     determining (304) a first touch event associated
with the first region of the web page based on the
first touch input signal;

     determining (304) a second touch event associated
with the second region of the web page based on the
second touch input signal;

     detecting a gesture event by combining the at least
the first and second touch events; and

     sending the gesture event to the web page for
processing."

The further independent claim 12 of both claim requests
is directed to a corresponding computer program.

Reasons for the Decision

1.   MAIN REQUEST

      Claim 1 of this request differs from claim 1 of the
      main request underlying the appealed decision in that
      it now specifies that

        A) each region is associated with a <u>different</u>
           respective node in a document object model
           (emphasis added by the board).

      This amendment was apparently made in response to the
      objection raised in the *obiter dictum* part of the
      appealed decision (cf. section 10.1) and is based e.g.
      on the disclosure of paragraph [0016] in conjunction
      with Figs. 1A and 1B of the application as filed, thus

complying with Article 123(2) EPC.

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

The board judges that claim 1 of the main request does
not meet the requirements of Article 52(1) EPC in
conjunction with Article 56 EPC, for the following
reasons:

1.1.1   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).

1.1.2   Claim 1 of the main request is specifically directed to
processing simultaneous user touch inputs, also called
"multi-touch inputs". It is common ground that the
subject-matter of claim 1 is novel over the cited
prior-art documents. In the decision under appeal,
document D1 was considered to be the closest prior art
for the subject-matter of claim 1 on file (cf. appealed
decision, section 7.1). However, the board agrees with
the appellant that D1 is silent on implementational
details about DOM-type touch/gesture processing of web
pages depending on web-page regions and thus is not
concerned with dynamic or active web pages, unlike the
present invention. Since a DOM-based input processing
scheme inherently includes a specific way of using
input event types and corresponding event handlers at

each predefined node (see e.g. D2), the board cannot
subscribe to the finding of the decision under appeal
that applying the DOM technique for designing,
organising and managing various objects included in a
web page had no technical effect (cf. appealed
decision, section 7.3).

The board also agrees with the appellant that D2,
although relating to input processing for HTML-based
web pages according to the DOM standard, fails to
address any *simultaneous* user input events. Rather, the
board regards document D12, introduced by the board
(cf. point III above), as the most suitable starting
point for assessing inventive step, since it is indeed
directed to DOM-type processing of user touch inputs
(i.e. pen inputs representing ink annotations on
documents) for HTML-based web pages, like the present
invention.

1.1.3   The board holds that D12 discloses the following
         limiting features of claim 1:

         A method for processing touches comprising the steps
         of:
           a) receiving touch input signals ("ink points")
              associated with regions of a web page displayed on
              a touch-sensitive device (see e.g. section 3,
              first paragraph in conjunction with Fig. 2);
           b) wherein each region is associated with a different
              respective node in a document object model
              (inherently performed in a DOM-based web page
              processing scheme as described in D12; see e.g.
              section 3.1);
           c) determining separate touch events ("ink
              coordinates") associated with the regions of the
              web page based on the touch input signals (see

e.g. section 1, last paragraph, first sentence: *"... capturing ink coordinates ... and associating the ink with the underlying objects on the web pages"* in conjunction with section 4, second paragraph, third sentence: *"... ink points are first converted into coordinates ..."*);

d) detecting a gesture event (ink gestures "left", "right", "up" and "down"; see Table 1) by combining separate touch events ("ink coordinates") associated with the regions of the web page and determined based on the touch input signals (see e.g. section 1, last paragraph, last sentence: *"... the ink captured is treated as a pen gesture ..."* and 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"*);

e) sending the gesture event to the web page for processing (see 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).

1.1.4   Hence, the difference between the subject-matter of claim 1 and the disclosure of D12 is that <u>simultaneous</u> touch input signals are received. Accordingly, the subject-matter of claim 1 is considered to be novel over D12 (Article 54 EPC).

1.1.5   The board considers that the objective problem associated with the above-identified distinguishing feature may be formulated as "how to extend the single-touch gesture recognition scheme of D12 to *multi-touch* inputs on a touch-screen device".

1.1.6   When confronted with the above objective problem with
         which the skilled person in the field of touch-screen
         devices might realistically have been faced at the
         application's priority date, the person skilled in the
         art would know that recognising multi-touch user inputs
         on different regions of the screen was well known at
         the application's priority date (see e.g. D3, [0042] or
         D6, [0114] in conjunction with Fig. 17C). Therefore,
         and further considering that D12 relies on very basic
         gestures and aims at covering more complex gestures in
         the future (see section 3.1, second paragraph), the
         board finds that the skilled person would readily use,
         in an obvious way, the ink coordinates captured on one
         or more regions of the web page for also recognising
         multi-touch gestures.

1.1.7   The appellant argued at the oral proceedings before the
         board that e.g. D3 and D6 described merely how
         simultaneous touches are recognised, without providing
         any information about the actual transformation of
         touch input signals into touch events and then into
         gesture events as claimed.

         The board notes, however, that D12 already teaches that
         kind of transformations, with the "ink points" (i.e.
         the actual pen positions) corresponding to the touch
         input signals and the "ink coordinates" corresponding
         to the touch events (see also the present description
         as filed, [0018], last sentence: *"... each touch event
         can include a set of coordinates at which a touch is
         currently occurring"*) in respect of the phraseology of
         claim 1. Furthermore, documents D3 and D6 are solely
         intended to exemplify that simultaneously detecting
         multiple touch input signals and/or touch events was
         well within the reach of the skilled person at the

application's priority date.

1.1.8   In view of the above, the subject-matter of claim 1 of
         the main request does not involve an inventive step
         having regard to D12 (Article 56 EPC).

1.2   In conclusion, this request is not allowable under
         Article 56 EPC.

2.   AUXILIARY REQUEST A

         This request was submitted for the first time after the
         appellant had filed its statement setting out the
         grounds of appeal, i.e. at a relatively late stage of
         the overall procedure. The board admitted it into the
         appeal proceedings under Article 13(1) RPBA, since it
         was in fact an appropriate and eventually successful
         attempt (see point 2.2 below) to overcome the
         objections raised by the board.

2.1   Independent claims 1 and 12 of this auxiliary request
         differ from those of the main request in that they now
         specify that (emphasis added by the board)

         B) first and second touch input signals are received
            simultaneously and are associated with first and
            second regions, respectively, of the web page;
         C) the first touch input signal corresponds to a
            first touch input at a first location that
            corresponds to the first region of the web page,
            the second touch input signal corresponds to a
            second touch input at a second location that
            corresponds to the second region of the web page,
            and the second location is distinct from the first
            location;

D) a <u>first touch event</u> associated with the first
   region of the web page is determined based on the
   first touch input signal and a <u>second touch event</u>
   associated with the second region of the web page
   is determined based on the second touch input
   signal;

E) the gesture event to be sent to the web page is
   detected by combining at least the <u>first and</u>
   <u>second touch events</u>.

Features B) to E) are taken in combination from the
embodiment relating to the so-called "rotating gesture"
based on moving two fingers placed on two different
web-page regions clockwise or counterclockwise (cf.
[0024] of the description as filed). With respect to
the feature of sending the gesture event to the web
page, the corresponding passage in paragraph [0024] of
the original description states:

> *"Gesture Events <u>can</u> be sent to the web page 100*
> *before TouchEvents ... The gesture event <u>can</u> then*
> *be sent to the web page 100, followed by the touch*
> *events ..."* (emphasis added by the board).

From this disclosure the board concludes that
additionally sending the touch events, after sending
the gesture event, is foreseen as an *optional* measure
rather than disclosed as an *essential* feature. Hence,
the board is satisfied that the above feature of
claim 1 is sufficiently supported by the original
application (Article 123(2) EPC).

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

        The board holds that the independent claims of the
        present auxiliary request also meet the requirements of

Article 52(1) EPC, for the following reasons:

2.2.1   The board considers document D12 to be the closest
        prior art also for the subject-matter of independent
        claims 1 and 12 of the present auxiliary request. As
        D12 is directed to a single-touch device, it inevitably
        fails to disclose features B) to E).

2.2.2   As to the wording of the independent claims, it is
        apparent to the board that distinguishing features B)
        and C) are related to the user's specific input
        behaviour, whilst distinguishing features D) and E)
        describe the specific reaction of the touch-screen
        device to the user input. With respect to the technical
        effect achieved by such a human-machine interaction
        scheme, the board accepts that distinguishing
        features B) to E), together with feature A),
        synergistically yield the overall effect of enabling
        the underlying touch-screen device to recognise
        gestures composed of simultaneous two-finger touches on
        distinct web-page regions instead of accommodating
        gestures applied only in a certain region. In practice,
        this may allow implementing gestures such as the
        described "rotating gesture" which involves different
        web-page elements e.g. for rotating them, thereby
        manifestly extending the usability of the touch-screen
        device in question for different user purposes. This
        may also be derived from the present description as
        originally filed (see e.g. [0024], last sentence).

2.2.3   In view of the above, the objective technical problem
        to be solved by the independent claims may be
        formulated as "how to improve the extendability of
        gesture-to-function mappings applied to web pages
        displayed on the touch-screen system of D12".

2.2.4   Starting out from D12 the skilled person would be aware
        that in a DOM-based input event processing scheme,
        event listeners or handlers are associated to each
        individual web-page region for collecting touch events
        (ink coordinates), possibly forming gestures and
        forwarding them to the web page for further processing.
        Hence, even if D12 were to support multiple touches,
        the skilled person would still assume that a gesture is
        recognised based only on the touch events of the
        associated event listener/handler, i.e. of the
        corresponding web-page region (see e.g. Fig. 2 in which
        different text ranges correspond to different web-page
        regions). Consequently, the skilled person would
        foresee that the touch events recognised within *one and
        the same* region are used for building the respective
        gestures to be sent to the web page rather than
        combining touch events arising from *different* web-page
        regions. In order to solve the above objective problem
        and in view of the fact that D12 provides the prospect
        of supporting more complex gestures (see D12,
        section 3.1, second paragraph), the person skilled in
        the art would rather devise more intuitive and/or
        sophisticated gestures and associated functions to be
        applied within the individual web-page regions, thus
        ending up with a solution different from that of
        claims 1 and 12. Therefore, the board holds that the
        present independent claims credibly provide a
        synergistic non-obvious effect which goes beyond the
        sum of the individual effects of their distinguishing
        features.

2.2.5   Moreover, the board finds that none of the other cited
        prior-art documents renders the subject-matter of
        claims 1 and 12 obvious, whether taken alone or in
        combination with the disclosure of D12:

Document D1 relates to gesture recognition for
alphanumeric inputs made on a touch pad separate from
the display based on display regions ("active objects")
and visual feedback (partly also for web pages).
However, it is - beyond optionally involving web
browsing (see D1, [0068]) - completely silent as to the
matter of the use of DOM-based dynamic web-page
processing or event handler/listeners and in particular
as to recognising gestures composed of touch events
detected on distinct web-page regions (see also
point 1.1.2 above).

Document D2 touches merely on 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 composed of touch
events detected on distinct web-page regions.

Documents D3 and D6, albeit relating to multi-finger
gesture recognition based on different display regions,
likewise does not provide a hint towards web-page
processing based on recognising gestures composed of
touch events detected on distinct web-page regions.

Lastly, documents D10 and D11 were cited in the
decision under appeal solely as evidence of the skilled
person's common general knowledge as regards using
event handlers or active web-page objects and HTML tags
in relation to D1 respectively. No motivation
whatsoever is however given for the recognition of
multi-touch gestures composed of touch events detected
on various web-page regions.

Accordingly, even if the teachings of D12 and the above

prior-art documents were combined, the skilled person would not arrive at the claimed solution.

2.3   Hence, having regard to the cited prior art, the subject-matter of the present independent claims is held to be new and to involve an inventive step within the meaning of Articles 54 and 56 EPC.

3.   As 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 set of claims according to auxiliary request A.

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 19 of auxiliary request A submitted with
        the letter dated 5 June 2015 and pages 2 to 25 of the
        description as published, page 1 of the description as
        filed on 19 April 2011, and drawing sheets 1 to 6 as
        published.

The Registrar: The Chair:

K. Götz-Wein   A. Ritzka

Decision electronically authenticated