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**Datasheet for the decision
of 19 May 2021**

Case Number:	T 1422/19 - 3.5.07
Application Number:	14768301.5
Publication Number:	2976719
IPC:	G06F17/00, G06F17/30
Language of the proceedings:	EN

Title of invention:
Estimating visibility of content items

Applicant:
Google LLC

Headword:
Content item visibility/GOOGLE

Relevant legal provisions:
EPC Art. 56, 84

Keyword:
Claims - clarity (yes)
Inventive step - (yes)

Decisions cited:
G 0001/19, T 0258/03

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Case Number: **T 1422/19 - 3.5.07**

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 19 May 2021

Appellant: (Applicant)	Google LLC 1600 Amphitheatre Parkway Mountain View, CA 94043 (US)
Representative:	Pediani, Steven Peter 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 6 February 2019 refusing European patent application No. 14768301.5 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair	J. Geschwind
Members:	R. de Man
	P. San-Bento Furtado

Summary of Facts and Submissions

I.   The appellant (applicant) appealed against the decision
        of the examining division refusing European patent
        application No. 14768301.5, published as international
        application WO 2014/151292.

II.   The contested decision cited the following documents:

        D1: WO 2011/072048 A2, 16 June 2011;
        D2: US 2011/0196735 A1, 11 August 2011;
        D3: US 2012/0079366 A1, 29 March 2012;
        D4: US 2011/0029393 A1, 3 February 2011;
        D5: "Window outerWidth and outerHeight Properties",
            6 March 2013, retrieved from https://
            web.archive.org/web/20130306132235/https://
            www.w3schools.com/jsref/prop_win_outerheight.asp.

        The examining division decided that the subject-matter
        of independent claims 1, 10 and 12 of the sole request
        lacked inventive step in view of document D1.

III.   In its statement of grounds of appeal, the appellant
        maintained the claims considered in the decision under
        appeal as its sole main request.

IV.   In a communication accompanying the summons to oral
        proceedings, the board raised objections under
        Articles 84 and 123(2) EPC and expressed the
        preliminary view that the subject-matter of claim 1
        lacked inventive step in view of a combination of
        documents D1 and D5.

V.   With a letter dated 8 January 2021, the appellant filed
         a first auxiliary request.

VI.   During the oral proceedings, which were held on
         19 May 2021, the appellant replaced its requests with a
         sole main request. At the end of the oral proceedings,
         the Chair announced the board's decision.

VII.   The appellant requested that the decision under appeal
         be set aside and that a patent be granted on the basis
         of claims 1 to 10 of the sole main request filed in the
         oral proceedings.

VIII.   Claim 1 of the sole main request reads as follows:

         "A computer-implemented method (400) for determining
         content visibility when a content item is included in a
         cross-domain iframe (308), comprising:
             determining (402) a first estimate of a size of a
         webpage viewing area (206) of a browser window (202)
         associated with a browser including (i) reading, from
         inside the iframe (308), an outer bound for size of the
         browser window (202), (ii) performing a statistical
         analysis to determine an average size of one or more
         browser elements (204, 208a, 208b) including
         determining a browser header (204) size based on
         historical measurements that are gathered as
         statistical data, and (iii) subtracting from the size
         of the browser window (202) the average size of the one
         or more browser elements (204, 208a, 208b);
             determining (404) a second estimate for a size of
         the content item for display in the webpage viewing
         area (206), including reading iframe inside
         measurements for the iframe (308) from the browser;
             determining (406) content item visibility
         including determining of a location of the content item

relative to the webpage viewing area (206) by reading a location of the browser window (202) and, from inside the iframe (308), a location of the iframe (308) in screen coordinates and calculating how much of the content item is visible by determining an area of overlap of two rectangles, the first rectangle defined by the location of the browser window (202) and the estimate of the webpage viewing area (206), and the second rectangle defined by the location of the iframe (308) and the size of the content item; and

reporting (408) information about the visibility of the content item to a content sponsor."

Claims 2 to 4 are dependent on claim 1.

Claim 5 reads as follows:

"The method of claim 4, wherein the browser is a Firefox browser."

Claims 6 and 7 are dependent on claim 1.

Claim 8 reads as follows:

"A computer program product embodied in a tangible medium including instructions, that when executed, cause one or more processors to:

determine (402) a first estimate of a size of a webpage viewing area (206) of a browser window (202) associated with a browser including (i) reading, from inside the iframe (308), an outer bound for size of the browser window (202), (ii) performing a statistical analysis to determine an average size of one or more browser elements (204, 208a, 208b) including determining a browser header (204) size based on historical measurements that are gathered as

statistical data, and (iii) subtracting from the size of the browser window (202) the average size of the one or more browser elements (204, 208a, 208b);

determine (404) a second estimate for a size of the content item for display in the webpage viewing area (206), including reading iframe inside measurements for the iframe (308) from the browser;

determine (406) content item visibility including determining of a location of the content item relative to the webpage viewing area (206) by reading a location of the browser window (202) and, from inside the iframe (308), a location of the iframe (308) in screen coordinates and calculating how much of the content item is visible by determining an area of overlap of two rectangles, the first rectangle defined by the location of the browser window (202) and the estimate of the webpage viewing area (206), and the second rectangle defined by the location of the iframe (308) and the size of the content item; and

report (408) information about the visibility of the content item to a content sponsor."

Claim 9 is dependent on claim 8.

Claim 10 reads as follows:

"A system comprising:
one or more processors; and
one or more memory elements including instructions that, when executed, cause the one or more processors to:
determine (402) a first estimate of a size of a webpage viewing area (206) of a browser window (202) associated with a browser including (i) reading, from inside the iframe (308), an outer bound for size of the browser window (202), (ii) performing a statistical

analysis to determine an average size of one or more
browser elements (204, 208a, 208b) including
determining a browser header (204) size based on
historical measurements that are gathered as
statistical data, and (iii) subtracting from the size
of the browser window (202) the average size of the one
or more browser elements (204, 208a, 208b);

determine (404) a second estimate for a size of
the content item for display in the webpage viewing
area (206), including reading iframe inside
measurements for the iframe (308) from the browser;

determine (406) content item visibility including
determining of a location of the content item relative
to the webpage viewing area (206) by reading a location
of the browser window (202) and, from inside the iframe
(308), a location of the iframe (308) in screen
coordinates and calculating how much of the content
item is visible by determining an area of overlap of
two rectangles, the first rectangle defined by the
location of the browser window (202) and the estimate
of the webpage viewing area (206), and the second
rectangle defined by the location of the iframe (308)
and the size of the content item; and

report (408) information about the visibility of
the content item to a content sponsor."

IX.   The remaining application documents are:
       -   description:
           - pages 1, 1a, 2 and 3 as filed with the letter of
              30 May 2017;
           - pages 4 to 18 as published;
       -   drawing sheets 1/4 to 4/4 as published.

Reasons for the Decision

1.   *The application*

1.1   The application relates to determining "visibility of
        content" presented in a web browser (paragraph [0004]
        of the published application). Information on whether
        embedded content items, such as advertisements, are
        visible to the user is useful in the online advertising
        business.

1.2   According to paragraphs [0019] and [0020], certain
        existing techniques for determining/measuring the
        visibility of a content item do not work ("can be
        difficult") when the code that renders the content item
        runs from within a frame or iframe whose domain is
        distinct from the domain of the web page embedding the
        content item. In particular, browser security
        constraints may prevent access to information such as
        the size of the browser's viewport, the size of the
        content item, and the content's item location relative
        to the browser's viewport.

1.3   The application proposes a method that allows code to
        determine the visibility of a content item from within
        the content item's cross-domain iframe.

1.3.1   The visibility of the content item is determined by
        calculating the overlap of the rectangle corresponding
        to the "webpage viewing area" and the rectangle
        corresponding to the content item.

1.3.2   The rectangle corresponding to the web page viewing
        area is estimated by reading the size and location of
        the browser window from inside the iframe, i.e. by code

included in the iframe, and correcting for browser user
interface elements which are part of the browser window
but not part of the web page viewing area (paragraphs
[0023], [0024], [0043] and [0044]). The sizes of the
browser user interface elements are estimated on the
basis of statistical data obtained from historical
measurements (paragraphs [0024] and [0025]).

1.3.3   The rectangle corresponding to the content item is
         determined by reading the location and size of the
         content item from inside the iframe. The position can
         be determined by means of browser-specific APIs (see
         paragraphs [0026], [0054] and [0055]) or by means of
         mouse events (as explained in paragraph [0050]). The
         size can be approximated as the size of the "inside
         portion" of the iframe (paragraphs [0022], [0054] and
         [0055]).

2.   *Added subject-matter - Article 123(2) EPC*

2.1   Claim 1 is based on a combination of originally filed
         claims 1, 2, 6 and 10 with a number of further
         amendments based on the description as discussed below.

2.2   The term "viewport" has been replaced with "browser
         window". The application as filed uses these terms
         synonymously, as can been seen from paragraph [0026]:
         "if the browser's location is (200, 500) and the
         frame's location is (250, 510) in screen coordinates,
         then a determination can be made that the content item
         is located at (50, 10) in viewport coordinates".

2.3   The term "chrome elements" has been replaced with
         "browser elements". This is supported by paragraph
         [0023], which mentions scroll bars, universal resource

locator bars and bookmark bars as examples of browser "chrome" elements.

2.4   The outer bound for the size of the browser window and the location of the iframe in screen coordinates are read "from inside the iframe" (paragraph [0011], second sentence).

2.5   Performing the statistical analysis includes "determining a browser header size based on historical measurements that are gathered as statistical data" (paragraph [0024], third sentence).

2.6   The "reporting visibility" step has been replaced with "reporting information about the visibility of the content item to a content sponsor" (paragraph [0059]).

2.7   Hence, the subject-matter of claim 1 and corresponding independent claims 8 and 10 has a basis in the application as filed.

2.8   Dependent claim 2 combines original dependent claims 4 and 5. Dependent claims 3 to 7 and 9 correspond to original claims 7, 8, 9, 11, 13 and 17, respectively.

2.9   The amended application therefore complies with Article 123(2) EPC.

3.   *Clarity - Article 84 EPC*

3.1   The clarity objections raised by the board in its communication no longer apply to the current set of claims. In particular, the replacement of "viewport" with "browser window" has overcome the board's clarity objection in respect of the feature "a webpage viewing area of a viewport associated with a browser".

3.2   In the European search opinion, the search examiner
        objected to the feature "wherein the browser is a
        Firefox browser" of then claim 7, noting that "Mozilla
        Firefox" was a registered trademark and therefore had
        to be indicated as "Firefox®".

        No provision of the EPC or of national or international
        law mandates that trademarks be marked as such. In some
        jurisdictions, trademark owners can use the ® symbol to
        give notice to the public that a trademark has been
        registered. However, the appellant is not the owner of
        the Firefox trademark.

        Accordingly, the trademark symbol has been removed from
        present claim 5.

3.3   The board is aware that Part F, Chapter IV, 4.8 of the
        Guidelines for Examination in the EPO (March 2021)
        warns against the use of trademarks and similar
        expressions in claims as it is not normally guaranteed
        that the product or feature referred to is not modified
        while maintaining its name during the term of the
        patent.

        Although the term "Firefox browser" in dependent
        claim 5 does not refer to a fixed product but to a
        family of web browsers which grows over time, this does
        not lead to a lack of clarity in the present case. The
        term "(web) browser", while covering an ever growing
        number of different browser implementations, is a
        standard term in the art and refers to a relatively
        well-defined set of technical features. The term
        "Firefox browser" merely limits the scope of the claim
        to embodiments in which the web browser is one that was
        released under the "Firefox" brand - a criterion that

is easy to check. The question whether such a
limitation implies additional technical features
relevant to achieving a specific technical effect over
the whole scope of the claim can be examined under
inventive step if necessary. But since claim 5 is a
dependent claim, this question need not be answered.

3.4   Hence, the application complies with the requirements
        of Article 84 EPC.

4.   *Inventive step*

4.1   Document D1 relates to determining whether a predefined
        percentage of an advertisement is within the browser's
        viewport (see abstract and paragraphs [0003] and
        [0004]). It is undisputed that document D1 represents
        the closest prior art for the subject-matter of
        claim 1.

        It is clear from Figure 2 and paragraph [0012] that
        document D1 uses the term "viewport" in its standard
        meaning of the visible area within a browser window
        that displays (a portion of) the web page. This
        corresponds to the "webpage viewing area" of claim 1.

        Document D1 discloses, in paragraphs [0012], [0013],
        [0016] and Figures 2 and 4, a method of determining, by
        a program embedded in an advertisement unit of a web
        page, whether the advertisement is visible by
        determining

        -    the size and the location on the screen of the
             browser's viewport (Figure 2; paragraph [0012],
             "upper left corner viewport x, y display dimensions
             28"; paragraph [0016], "dimensions and the x,y
             coordinates of the viewport") and

-      the size and the location of the advertisement
       (paragraph [0012], "upper left corner x, y
       coordinates 34 and a total area of the Ad";
       paragraph [0016], "x, y coordinates and the
       dimensions of the Ad unit")

and then calculating how much of the advertisement is
visible, which is equivalent to determining the area of
overlap between the rectangle corresponding to the
viewport and the rectangle corresponding to the
advertisement (see Figure 2).

The advertisement may be enclosed in an iframe
(paragraph [0022]). The board agrees with the examining
division that, since the advertisement is retrieved
from a separate ad server (see paragraph [0011]), the
iframe is a cross-domain iframe. However, document D1
contains no discussion on cross-domain security
restrictions and the measures used to overcome them.

The determined visibility is reported to interested
parties, including "ad placement clients", i.e. content
sponsors (paragraphs [0012] and [0019]).

4.2   Document D1 does not disclose that the size of the
       viewport/web page viewing area is determined by reading
       the size of the browser window and subtracting from the
       size of the browser window the average size of one or
       more browser elements as determined by a statistical
       analysis based on historical measurements.

       This distinguishing feature addresses the problem of
       estimating the size of the browser's viewport from
       within a cross-domain iframe. Due to security
       constraints, the size of the viewport cannot be

accessed directly from within a cross-domain iframe
(see paragraph [0020] of the published application).

4.3   In its decision, the examining division argued that,
        although the determination of the estimated size of the
        viewport was performed with technical means, it
        corresponded to a technical implementation of a non-
        technical requirement, which was the rule used to
        compute the estimated size. This rule was non-technical
        because it was based on a business requirement and,
        since the determined output size was an estimated
        value, it circumvented the technical problem of
        actually measuring the viewing area rather than
        addressing it.

4.4   It is true that the method of claim 1 does not include
        a technical use of the calculated/estimated content
        visibility. In fact, the claim specifies that the
        information about the visibility of the content item is
        reported to a content sponsor. However, the method does
        not merely calculate this information from numerical
        input data but measures "raw" information about a
        running web browser and processes this information to
        produce an estimate of a technically meaningful
        parameter, namely the extent to which a content item
        displayed within a web page is visible to the user, and
        on the basis of technical considerations relating to
        what is possible with an unmodified browser that
        enforces standard security constraints. Such an
        indirect measurement is normally of a technical nature
        (see decision G 1/19, not yet published in the OJ EPO,
        point 99).

4.5   As for the examining division's argument that the claim
        "circumvents" rather than addresses the technical
        problem of actually measuring the viewing area, the

board notes that finding a way to circumvent a
technical problem may well form the basis for a
patentable invention.

The examining division's argument appears to be based
on decision T 258/03, OJ EPO 2004, 575, Reasons 5.7,
where the deciding board argued that "[m]ethod steps
consisting of modifications to a business scheme and
aimed at circumventing a technical problem rather than
solving it by technical means cannot contribute to the
technical character of the subject-matter claimed".

However, no business or other non-technical scheme is
modified in the present case.

4.6   In its communication, the board suggested that in view
        of document D5, which disclosed that the width and the
        height of the browser window including browser elements
        such as toolbars and scroll bars could be obtained by
        means of the "window.outerWidth" and
        "window.outerHeight" properties, it would have been
        obvious to estimate the size of the browser's viewport
        in terms of width and height by determining the width
        and height of the browser window by means of these
        properties and correcting for browser elements. Since
        the sizes of browsers elements varied from browser to
        browser, they would have to be estimated, for example
        on the basis of statistical data.

4.7   However, on reconsideration the board is not convinced
        that, faced with the problem of obtaining the
        approximate size of the browser's viewport, the skilled
        person would, without any hint, decide to obtain
        instead the size of the browser window and then correct
        for browser elements.

Since such a hint is not present in document D5 or in
any of the other prior-art documents on file, the board
considers that the subject-matter of claim 1 is not
rendered obvious by the cited prior art.

4.8   Hence, the subject-matter of claim 1 and of the
          corresponding independent claims 10 and 12 involves an
          inventive step over the cited prior art.

5.   *Conclusion*

          Since, moreover, the description has been adapted, the
          board is satisfied that the sole substantive request
          complies with the requirements of the EPC and that the
          appeal is therefore allowable.

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 the following documents:
        -    claims 1 to 10 as filed in the oral proceedings
             before the board;
        -    description:
             -   pages 1, 1a, 2 and 3 as filed with the letter of
                 30 May 2017;
             -   pages 4 to 18 as published;
        -    drawing sheets 1/4 to 4/4 as published.

The Registrar: The Chair:

S. Lichtenvort   J. Geschwind

Decision electronically authenticated