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Datasheet for the decision
of 7 May 2014

Case Number:	T 0040/13 - 3.5.07
Application Number:	98925090.7
Publication Number:	1025547
IPC:	G06F17/30, G06T3/40, H04N1/21
Language of the proceedings:	EN

Title of invention:
A method and system for accelerating a user interface of an image capture unit during play mode

Applicant:
FlashPoint Technology, Inc.

Headword:
Multiple image formats/FLASHPOINT

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

Case Number: **T 0040/13 - 3.5.07**

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 7 May 2014

Appellant: (Applicant)	FlashPoint Technology, Inc. 152 N. Third Street, No. 800 San Jose, CA 95112 (US)
Representative:	Brookes Batchellor LLP 46 Chancery Lane London WC2A 1JE (GB)
Decision under appeal:	Decision of the Examining Division of the European Patent Office posted on 6 July 2012 refusing European patent application No. 98925090.7 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman:	R. Moufang
Members:	M. Rognoni
	R. de Man

Summary of Facts and Submissions

I.   The appellant (applicant) appealed against the decision
       of the Examining Division refusing European patent
       application no. 98925090.7.

II.   In the contested decision, the Examining Division came,
       inter alia, to the conclusion that the subject-matter
       of claims 1 and 6 filed in electronic form on 4 April
       2012 did not involve an inventive step within the
       meaning of Article 56 EPC, having regard to the
       following prior art document and the skilled person's
       knowledge:

       D1: N. Dal Degan *et al.* "Still images retrieval from a
            remote database: The system *Imagine*", Signal
            Processing: *Image Communication* 5 (1993), pages
            219 - 234, Elsevier Science Publishers, Amsterdam,
            NL.

       Furthermore, the amendments in claims 2 and 7
       introduced subject-matter extending beyond the content
       of the application as originally filed and thus
       contravened Article 123(2) EPC.

       In section III. ("Obiter Dicta") of the decision, the
       Examining Division further referred to the following
       documents:

       D2: C. R. Hauf *et al.*: "The FlashPix^{TM} Image File
            Format", *The Fourth Color Imaging Conference:
            Color Science, Systems and Applications*, 1996,
            pages 234 - 238, XP000856885;

       D3: WO-A-92/05655.

III.   With the notice of appeal dated 4 September 2012, the
        appellant, *inter alia*, requested *"to grant a European
        patent in accordance with one of the Applicant's
        Requests as submitted to the Examining division or
        based on such further Requests as may be submitted
        during the appeal procedure with the approval of the
        Board"*.

        As the only request considered by the Examining
        Division in the contested decision related to claims 1
        to 10 filed in electronic form on 4 April 2012 and no
        further request was submitted in the course of the
        appeal proceedings, the Board understands that the
        appellant intended to request the grant of a patent on
        the basis of these claims.

IV.   In a communication accompanying the summons to oral
        proceedings, the Board drew the appellant's attention
        to the following document cited in the International
        search report:

        D6: US-A-5 164 831.

        Furthermore, the Board introduced the following
        document into the appeal proceedings:

        D7: GB-A-2 295 936.

V.   In reply to the Board's communication, the
        representative of the appellant argued with letter
        dated 3 April 2014 that claim 1 was inventive over the
        newly cited documents and declared that the appellant
        would not be represented at the oral proceedings.

VI.   With letter dated 28 April 2014, the appellant's
        representative confirmed that the appellant would not
        be represented at the oral proceedings.

VII.   Oral proceedings were held as scheduled on 7 May 2014
        in the absence of the appellant.

VIII.   Claim 1 filed on 4 April 2012 reads as follows:

        "A method for accelerating a user interface (408) on a
        display (402) of an image capture unit (110), the image
        capture unit including a plurality of image files (600)
        for providing a plurality of images, each image file
        including a high resolution image (604, 811) therein,
        the image capture unit including controls (409, 410a,
        410b, 420) for allowing an image to be viewed on the
        display and for allowing navigation between the
        plurality of images, the method comprising the steps
        of:
            (a) providing a lower resolution image (606, 608)
        within each image file, the lower resolution image
        being associated with the high resolution image within
        a particular image file, wherein each image file
        comprises the high resolution image and the low
        resolution image, which is a low resolution version of
        the high resolution image;
            (b) allowing the lower resolution image to be
        viewed on the display;
            (c) causing the high resolution image related to
        lower resolution image to be displayed on top of the
        lower resolution image; and
            (d) allowing for navigation between lower
        resolution images based upon user interaction."

        Claims 2 to 5 depend directly or indirectly on claim 1.

Claim 6 is directed to a *"system for accelerating a user interface"* and comprises means for performing the steps recited in claim 1.

Claims 7 to 10 are directly or indirectly dependent on claim 6.

IX. The appellant's arguments may be summarized as follows:

The problem addressed in the application was to accelerate the process of navigation through multiple images in a digital camera. The solution offered by document D1 was to have one browse window comprising a lower quality image, which allowed the user to explore the content of the database. If the user wanted to see the selected image with a higher quality, a request had to be made to the database management system module to extract the full image. A higher resolution version of the image was then decompressed.

In other words, document D1 disclosed a mechanism wherein a low resolution version of the image was stored in one file and coded differences between the low resolution version and higher resolution versions were stored in separate files. Notably, nowhere was a high-resolution version of the image stored. Thus, document D1 taught that if a high-resolution version was desired, it could be assembled using the low resolution version and the files of coded differences.

A further distinguishing feature of claim 1 over document D1 was the feature "causing the high-resolution image to be displayed on top of the lower resolution image" (see feature (c) of claim 1).

As to document D6, it failed to teach or suggest
causing the display of an image capture unit to display
a higher resolution image on top of the low resolution
image. In fact, document D6 disclosed a still camera,
having a display device that displayed a thumbnail
image, and a still video player separate from the still
camera. The still video player included a monitor that
was used to display other thumbnail images or
alternatively decompressed image signals. Nowhere did
D6 teach or suggest displaying a thumbnail image and
then replacing the thumbnail image by displaying the
decompressed image signal on top of the thumbnail image
signal.

Document D7 disclosed using progressive image
transmission schemes to display a low quality image and
then progressively increase the quality of the image as
more data was received. A progressive image
transmission scheme would not work with the thumbnail
images and decompressed image signals of D6. Therefore
the teaching of document D7 was not compatible with the
teaching of document D6.

Accordingly, the subject-matter of claim 1 was
inventive over the cited prior art documents (Article
56 EPC).

Reasons for the Decision

1.   The appeal is admissible.

Accelerated processing before the Board

2.   The present application was filed as an International
        Application on 2 June 1998 (priority date:
        10 June 1997) and published on 17 December 1998.

Form 1200 (Entry into the regional phase before the
EPO) was filed on 21 December 1999.

The international preliminary examination report was
completed on 22 June 2000. The supplementary European
search report, dated 19 January 2006, was transmitted
to the applicant on 26 January 2006. With letter dated
27 March 2006, the applicant confirmed that it wished
to proceed with the examination of the application.

The first communication of the Examining Division was
dated 1 February 2007. The applicant's reply was dated
30 July 2007. With letter dated 1 December 2008, the
applicant inquired when a further communication was
likely to be received.

A second communication was issued on 10 March 2009. The
applicant's reply was dated 7 September 2009.

A communication accompanying the summons to oral
proceedings, scheduled for 10 May 2012, was issued on
15 February 2012.

Oral proceedings were held as scheduled on 10 May 2012
in the absence of the applicant.

The decision to refuse the application was issued on
6 July 2012.

2.1   Considering the duration of the examination proceedings
        and, in particular, the regrettably long and hardly
        justifiable delays between the entry into the regional
        phase and the Examining Division's first communication,
        and between the applicant's submission of
        7 September 2009 and the summons to oral proceedings of

15 February 2012, the Board has decided to accelerate
the processing of the present appeal, although no
corresponding request has been filed by the appellant.

Appealed decision

3.   In the decision under appeal, the Examining Division
        considered that document D1 represented the closest
        prior art and found that the subject-matter of claim 1
        differed from the method disclosed in D1 in that:

        -       the method of claim 1 was executed on the display
                of an image capture unit; and
        -       the high resolution image was displayed on top of
                the lower resolution image.

3.1   As to the first distinguishing feature of claim 1, the
        Examining Division held that an image capture unit was
        a computer with image capture capabilities. A skilled
        person would implement the method known from document
        D1 without use of any inventive skills in order to
        improve the retrieval of images on an image capture
        unit.

        As to the second feature which would distinguish the
        claimed method from D1, the Examining Division argued
        that displaying the high resolution image on top of the
        lower resolution image was an image placement choice on
        a display that a skilled person would implement
        according to the circumstances without use of any
        inventive skills.

        Thus, the Examining Division concluded that the claimed
        method resulted from an obvious combination of the
        teaching of document D1 and of the skilled person's
        general knowledge (Article 56 EPC).

3.2   Under the heading "III. Obiter Dicta", the Examining
        Division furthermore noted that the idea of the
        application was the progressive display of an image at
        an increasing resolution to allow a user to get a first
        view of the image and to enable the user to switch to
        another image without waiting too long because of the
        processing time involved in displaying a high
        resolution image. These processes were well-known in
        the art (cf. documents D1 and D3). According to the
        Examining Division, storing together images of
        different resolutions was known (cf. D2). Thus, using a
        particular image storage format storing three different
        image resolutions as in the application was a solution
        that a skilled person would implement without use of
        any inventive skills (Article 56 EPC).

4.   As correctly argued by the appellant, document D1 does
        not teach or suggest storing both a low resolution and
        a high resolution image in a single file. In fact, in
        the passage of D1 which, according to the Examining
        Division, would anticipate feature (a), it is specified
        that coded *"information regarding image's pixels is
        actually stored in the database as follows: the lowest
        resolution version (0.08 bits/pixel) followed by the
        three differences between the increasing resolution
        versions (at 0.17, 0.5 and 1.5 bits/pixel,
        respectively). As an example, in order to have a
        decoded picture with the resolution corresponding to
        0.75 bits/pixel, three pieces of coded information must
        be composed: the basic 0.08 bits/pixel together with
        the 0.17 bits/pixel and 0.5 bits/pixel coded
        differences"* (D1, page 220, right-hand column,
        penultimate paragraph of section 2.).

4.1   Hence, the Board agrees with the appellant that
        document D1 does not disclose all the features of claim
        1 identified by the Examining Division in this
        document, and that the refusal of the application on
        the basis of this prior art and of the skilled person's
        general knowledge was not justified.

The appellant's request

5.   Claim 1 considered in the contested decision relates to
        a *"method for accelerating a user interface on a
        display of an image capture unit"*, whereby the image
        capture unit includes the following features:

        -     a plurality of image files for providing a
              plurality of images,
        -     each image file including a high resolution image
              therein,
        -     controls for allowing an image to be viewed on the
              display and for allowing navigation between the
              plurality of images.

5.1   The claimed method comprises the following steps:
          (a) providing a lower resolution image within each
              image file,
                  (i) the lower resolution image being associated
                      with the high resolution image within a
                      particular image file,
                  (ii)wherein each image file comprises the high
                      resolution image and the low resolution
                      image, which is a low resolution version of
                      the high resolution image;
          (b) allowing the lower resolution image to be viewed
              on the display;

(c) causing the high resolution image related to lower resolution image to be displayed on top of the lower resolution image; and

(d) allowing for navigation between lower resolution images based upon user interaction.

5.2   As stressed by the appellant in the statement of grounds of appeal, an essential aspect of the present invention is the provision of a single image file which contains a high resolution version and a low resolution version of the same image. In view of this, the Board considers that document D6 is to be regarded as the closest available prior art.

6.   Document D6 relates to an *"electronic still camera providing multi-format storage of full and reduced resolution images"*. As pointed out in column 1, lines 35 to 48, despite *"efficient operation of such a camera and the use of compression to reduce the amount of data, high quality digital image files written in the memory card are nonetheless quite large and take significant amounts of time to process due to image size, image resolution, and the nature of the compression process. For example, a 1,280 by 1,024 pixel, 24-bit per pixel image might compress over many seconds to 100 to 300 Kilobytes of storage area. It is often desirable to quickly review the images on the memory card before deciding to transmit, to make a copy, or to retake a picture. The physical time for decompression and display of a high resolution image can be so slow as to interfere with the review process* (emphasis added)*"*.

6.1   The solution proposed by document D6 (see column 2, lines 21 to 31) is *"based on the addition of a reduced resolution image to the digital file format for an*

individual high resolution image. Particularly if the reduced resolution, or "thumbnail", image is created as a part of the image acquisition process, or in close timing thereto, it is convenient to provide multi-format storage of the "thumbnail" image <u>in a reserved area associated with each image file</u>. The "thumbnail" image then follows the high resolution image wherever the image file travels. Since the "thumbnail" image is easily and quickly accessed, reviewing and display is extremely fast" (emphasis added).

6.2   Figure 2A of document D6 shows a file format for a single full resolution image and its associated low resolution image ("thumbnail"). As explained in document D6 (column 4, lines 65 to column 5, line 6), on *"request from the processor 20, the digital signal processor 22 recovers the "thumbnail" image from the image file and outputs it on a line 22a to a display device 30. Inasmuch as the "thumbnail" image is itself low resolution, the display device 30 may be a low resolution electro-optical device such as a liquid-crystal display. Alternatively, the display device 30 can be of higher resolution and display the "thumbnail" image in a window or portion of the display space"*.

        According to column 7, lines 47 to 52, *"for a plural number of images, the corresponding <u>"thumbnail" images can be quickly accessed and displayed either in a mosaic frame or in sequence in order to select the desired full resolution image for printing, displaying, transmitting, etc</u>."* (emphasis added).

6.3   In summary, document D6 relates, *inter alia*, to an image capture unit which includes a plurality of image files for providing a plurality of images, each image including a high resolution image therein. Furthermore,

D6 discloses a method for accelerating a user interface on a display of an image capture unit, which comprises or at least necessarily implies steps (a), (a)(i), (a)(ii), (b) and (d) of the method according to claim 1.

7.   As pointed out by the appellant, document D6 teaches using the still camera to display "thumbnail" (*i.e.* low quality) images and a separate still video player to display either "thumbnail" images or decompressed image signals.

        Furthermore, the appellant has argued that document D6 neither taught nor suggested displaying a "thumbnail" image and then replacing the "thumbnail" image by displaying the decompressed image signal on top of the thumbnail image signal (cf. feature (c) of the claimed method).

7.1   In fact, in the letter dated 3 April 2014, the appellant identifies the following differences between the subject-matter of claim 1 and the method disclosed in document D6:

        - the display on which high-resolution images are displayed is separate from the display of the image capture unit;

        - the high resolution image is caused to be displayed on top of the lower resolution image (feature (c) of claim 1).

7.2   It is pointed out in document D6, column 5, lines 1 to 6, that, as the thumbnail is itself low resolution, the display device of the still camera may also be low resolution. In this case, the camera display would not be suitable for displaying high-resolution images.

However, document D6 considers also the possibility of
having a display of higher resolution. The "thumbnail"
image would then be displayed in a window or portion of
the display space (cf. D6, column 5, lines 4 to 6).

In case of an image capture unit having a higher
resolution display with the capability of displaying
higher resolution images, the Board considers that it
would be obvious for the skilled person to provide this
unit with the functionality of displaying not only
thumbnails, but also the high resolution images
associated with the thumbnails and stored in the same
file as the corresponding thumbnails.

7.3   With respect to feature (c) of the claimed method, it
        is specified on page 3, lines 21 to 26 of the published
        application that the low resolution image is associated
        with the high resolution image within a particular
        image file, thus *"allowing the low resolution image to
        be viewed on the display and causing the high
        resolution image related to low resolution image <u>to be
        displayed on top of the low resolution image dependent
        upon the quality of the low resolution image</u>"* (emphasis
        added)*.*

        As to the actual meaning of feature (c), the Board
        notes that the only passage of the description which
        explicitly relates to the switching from a low
        resolution to a corresponding high resolution image
        provides the following details (see application as
        published, page 19, lines 14 to 21):

             *"In a preferred embodiment, as the compressed
        image 604 is being decompressed, the screennail image*

608 in the LCD screen 402 is updated with decompressed
image block by block in steps 812.

FIGS. 11C and 11D illustrate an example of a
higher-resolution compressed image 811 <u>replacing the</u>
<u>screennail</u> 809 on the LCD screen 402 <u>from top to bottom</u>
as the compressed image 604 is decompressed and
resized. In an alternative embodiment, the compressed
image 604 may be decompressed and resized in its
entirety first and then displayed to <u>replace the</u>
*<u>screennail image</u> 608 <u>in one step</u>" (*underlining added).

In other words, a compressed high resolution image is
decompressed by processing a certain number of lines at
a time (see application as published, page 2, lines 10
to 14). The partly decompressed image may be displayed
as soon as its processing is terminated, or the entire
image may be decompressed first and then displayed to
replace the compressed image in one step.

In the absence of any specific features detailing the
switching between low and high quality images in claim
1, it is to be assumed that feature (c) covers both
possibilities for replacing a low resolution image with
a high resolution image described in the passage of the
application referred to above.

7.4   In the statement of grounds of appeal, the appellant
        argued with respect to feature (c) that the lower
        resolution image was maintained whilst the higher
        resolution features were fed into it. Essentially,
        there was a base layer and an extended layer providing
        more detail and higher resolution.

        However, as it appears from the relevant passages of
        the application quoted above, the lower resolution
        image is not "maintained" and progressively transformed

into a high resolution image, but it is effectively
<u>replaced</u> either "progressively", as soon as high
resolution lines of the image become available, or in
one step.

In fact, if an image is available only in two formats,
switching from the low resolution format to the high
resolution format can only be carried out by replacing
the whole image in one step or in multiple steps by
displaying portions of the high resolution image as
soon as their processing is accomplished (see point 7.3
above).

7.5   Furthermore, the Board notes that the interpretation of
        feature (c) provided by the appellant with reference to
        Figures 11B to 11D, in the sense of replacing block by
        block the low resolution image with the high resolution
        image, appears to be based on the assumption that the
        low resolution image ("screennail") and the high
        resolution image are of the same size. However, claim 1
        provides no information on the respective sizes of the
        two image formats.

7.6   Document D6 points out in column 7, lines 47 to 52,
        that, *"for a plural number of images, the corresponding
        "thumbnail" images can be quickly accessed and
        displayed either in a mosaic frame or in sequence in
        order to select the desired full resolution image for
        printing, <u>displaying</u>, transmitting etc."* (emphasis
        added).

        As explained in column 7 of document D6, lines 20 to
        33, with reference to Figure 3A (block diagram of a
        still video player), the digital image data is expanded
        block-by-block and stored in an image buffer 108 as a
        decompressed image. The output of the image buffer is

connected to a selector 104 which is under the control of an *"operator-designated selection routine"*. *"When a "thumbnail" image is to be observed, the selector 104 routes the "thumbnail" data through a digital-to-analog (D/A) converter 114 to a conventional CRT monitor 116. Alternatively, the decompressed image signals are converted to analog form by the digital-to-analog (D/A) converter 114 and displayed on the conventional CRT monitor 116"*.

The implementation of this functionality (disclosed in D6 for a still video player) on the high resolution LCD display of the image capture unit would imply reading the image data into the LCD buffer. In the Board's opinion, switching from a thumbnail image to the corresponding high resolution image entails replacing the thumbnail image data in the LCD buffer with the high resolution image data to the effect that the high resolution image related to the low resolution image will be displayed, "progressively" or in one step, "on top" of the low resolution image (cf. feature (c) of claim 1).

8.   In summary, in the opinion of the Board, the claimed method differs from D6 only in that it offers the possibility of selecting either the low resolution image or the high resolution image for display on the camera's display.

8.1   Starting from D6, a problem addressed by the present application can be seen in increasing the functionality of the camera by allowing the user to choose between the display of a low resolution image or the corresponding high resolution image.

8.2   As D6 already offers this possibility for a still video
       player, in the Board's view, it would be obvious to a
       person skilled in the art to extend this functionality
       to an image capturing device provided with a high
       resolution display.

8.3   In summary, the Board finds that the subject-matter of
       claim 1 of the appellant's request does not involve an
       inventive step within the meaning of Article 56 EPC.

9.   As the appellant's request does not provide a basis for
       granting a patent, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

I. Aperribay   R. Moufang

Decision electronically authenticated