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**Datasheet for the decision
of 14 April 2016**

**Case Number:**             T 0256/10  -  3.5.07

**Application Number:**      02736515.4

**Publication Number:**      1381965

**IPC:**                     G06F17/21

**Language of the proceedings:**    EN

**Title of invention:**
Systems and methods for content delivery over a wireless
communication medium to a portable computing device

**Applicant:**
Arizan Corporation

**Headword:**
Document delivery to portable device/ARIZAN

**Relevant legal provisions:**
EPC Art. 56, 84, 123(2)

**Keyword:**
Inventive step -  main request,
auxiliary requests 1 and 2 (no) - auxiliary request 3 (yes)
Amendments - added subject-matter (no)
Claims - clarity (yes)

**Decisions cited:**

**Catchword:**

Case Number: T 0256/10 - 3.5.07

**D E C I S I O N**
**of Technical Board of Appeal 3.5.07**
**of 14 April 2016**

| | |
|---|---|
| **Appellant:**<br>(Applicant) | Arizan Corporation<br>430 10th Street, N.W.,<br>Suite S-105<br>Atlanta, GE 30318 (US) |
| **Representative:** | Reichl, Wolfgang<br>MERH-IP<br>Matias Erny Reichl Hoffmann<br>Patentanwälte PartG mbB<br>Paul-Heyse-Straße 29<br>80336 München (DE) |
| **Decision under appeal:** | Decision of the Examining Division of the European Patent Office posted on 5 October 2009 refusing European patent application No. 02736515.4 pursuant to Article 97(2) EPC. |

**Composition of the Board:**

| **Chairman** | R. Moufang |
|---|---|
| **Members:** | P. San-Bento Furtado |
| | M. Rognoni |

**Summary of Facts and Submissions**

I.      The appeal lies from the decision of the Examining
        Division to refuse European patent application
        No. 02736515.4, which was originally filed as
        international application PCT/US02/09268 and published
        as WO 02/077855, for lack of clarity of claim 1 of a
        main request and lack of inventive step of the subject-
        matter of claim 1 of an auxiliary request over prior art
        document D1:
        D1: WO 00/39666 A, published on 6 July 2000.

        In an *obiter dictum*, the Examining Division cited two
        documents introduced into the proceedings by the
        Examining Division during the oral proceedings:
        S1:  Liang, J. et al., "Document Layout Structure
             Extraction Using Bounding Boxes of Different
             Entities", WACV'96, Proceedings of the 3rd IEEE
             Workshop on Applications of Computer Vision,
             Sarasota, FL, USA, 2 to 4 December 1996, pages 278
             to 283.
        S4:  Lin, ChunChen et al., "Logical Structure Analysis
             of Book Document Images Using Contents
             Information", Proceedings of the 4th International
             Conference on Document Analysis and Recognition
             (ICDAR), Ulm, Germany, 18 to 20 August 1997,
             pages 1048 to 1054.

        Documents S1 and S4 were used to support the Examining
        Division's view that some claimed features were well
        known.

II.     In the statement of grounds of appeal, the appellant
        requested that the decision be set aside and that a
        patent be granted on the basis of a sole request filed
        with the grounds of appeal.

III.    The appellant was invited to oral proceedings. In a
        subsequent communication sent in advance of the oral
        proceedings, the Board expressed its preliminary opinion
        that independent claims 1 and 13 did not clearly define
        the matter for which protection was sought
        (Article 84 EPC), and did not seem to fulfil the
        requirements of Article 123(2) EPC either. The Board
        pointed out some apparent deficiencies of the dependent
        claims. With respect to independent claim 13, the Board
        remarked that the appellant had not indicated a basis
        for its subject-matter in the application as originally
        filed. The Board was of the preliminary view that the
        subject-matter of independent claim 1 lacked inventive
        step (Articles 52(1) and 56 EPC).

IV.     With a letter of reply dated 19 January 2016, the
        appellant filed new sets of claims to replace all
        previous requests as a main request and six auxiliary
        requests. On the day before the oral proceedings the
        appellant informed the Board by fax that it would not be
        attending the oral proceedings and requested that oral
        proceedings be held in its absence.

V.      Oral proceedings were held on 19 February 2016 in the
        absence of the appellant. At the end of the oral
        proceedings, the chairman announced that the decision
        would be given in writing.

VI.     The appellant's final request was that the contested
        decision be set aside and that a patent be granted on
        the basis of the main request, or of one of the first to
        sixth auxiliary requests, all requests having been filed
        with letter dated 19 January 2016.

VII. Claim 1 of the main request reads as follows:
"A method for delivering content from a server (10) to a portable computing device (12), comprising:

- analyzing (150), at the server (10), content of an electronic document, including parsing (160) the electronic document and constructing (162) a Document Object Model (DOM) of the electronic document (150), wherein a table of contents of the electronic document is established as navigational information for content of the electronic document by identifying existing navigational elements in the electronic document or where none exist by analytical processing based on the electronic document's visual representation;

- storing (166), at the server (10), the constructed DOM of the electronic document (150) in a DOM storage;

- receiving, at the server (10), a request from the portable computing device (12) for specific content associated with the electronic document (150) remote to the portable computing device (12);

- identifying (106), at the server (10), one or more portions of the electronic document associated with the requested specific content including traversing the DOM of the electronic document and using said established navigational information to find said requested specific content;

- reconstructing (210), at the server (10), the identified one or more portions of the electronic document by extracting the associated specific content from the DOM of the electronic document (150); and

- transmitting (112) the reconstructed one or more portions of the electronic document associated with the requested specific content from the server (10) to the portable computing device (12) for display thereon."

Independent claim 12 of the main request reads as follows:
"A data processing system for wireless document content delivery to a portable computing device (12), comprising a server (10) communicably connectable to the portable computing device (12) and being configured to execute the method for delivering content from the server (10) to the portable computing device (12) according to one of claims 1 to 11."

VIII. Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the analysing step reads as follows:
" - analyzing (150), at the server (10), content of an electronic document, including parsing (160) the electronic document and constructing (162) a Document Object Model (DOM) of the electronic document (150), wherein a table of contents of the electronic document is established as navigational information for content of the electronic document by extracting the table of contents from the electronic document, if the table of contents exists as a navigational element in the electronic document, or, if the table of contents does not exists [sic] as a navigational element in the electronic document, by identifying existing navigational elements including at least one of headers, footers and tables in the electronic document or where none exist by analytical processing (150) based on the electronic document's visual representation comprising detecting changes in at least one of font size, font type, font style and font positioning in textual content elements of the electronic document;".

IX. Claim 1 of the second auxiliary request additionally recites, compared with claim 1 of the first auxiliary request, the following features at the end of the claim:

"wherein said requested specific content is
transmitted in content excerpts of said electronic
document to said portable computing device (12), and an
initial excerpt of content of the transmitted content
excepts [sic] is prepared for transmission, at the
server (10), by obtaining the table of contents of the
electronic document based on content available in the
DOM, and the initial excerpt of content is stored, at
the server (10), in a cache memory for repeat access
purposes".

X.      Claim 1 of the third auxiliary request differs from
        claim 1 of the second auxiliary request in that it
        additionally includes the following text at the end of
        the claim:
           "the method further includes predictive caching (236)
        of said content excerpts relating to said request and
        said content excerpt previously sent".

        Independent claim 9 of the third auxiliary request
        differs from claim 12 of the main request in that at the
        end it refers to claims 1 to 8.

XI.     The fourth to sixth auxiliary requests are not relevant
        for the present decision.


**Reasons for the Decision**

1.      The appeal complies with the provisions referred to in
        Rule 101 EPC and is therefore admissible.

*The invention*

2.      The application relates to the delivery of content to a
        portable computing device. The purpose of the invention

is to allow "the wireless devices to have access to the electronic documents without regard to their size or formatting of the documents" (see page 2, lines 5 to 7 of the international publication of the application), taking into account the limited bandwidth available for communication with such devices (page 1, line 18 to page 2, line 4).

In order to achieve that purpose, at the server the method of the invention analyses the document, creates a table of contents with navigational links, and stores the document in a document object model (DOM) using a common markup language (page 2, lines 9 to 15, page 20, lines 3 to 10). When a request for content is received from the portable device, the portions of the document associated with the requested content are reconstructed from the elements in the DOM storage and transmitted to the portable computing device (see original claim 1).

**Main request**

*3.      Clarity*

3.1      The Examining Division was of the opinion that the then main request did not fulfil the requirements of Article 84 EPC due to inconsistent terminology throughout the claims and to non-correspondence of features between the two independent claims. Furthermore, the feature "further analyzing the document to improve the document quality" was defined in terms of the result to be achieved. No clarity objections were raised with respect to the auxiliary request.

The claims of the present main request have been strongly amended in comparison with the claims considered in the contested decision. Present claim 1 no

longer defines the above-mentioned feature in terms of the result to be achieved. The Board is also of the opinion that the terminology is clear and consistent throughout the claims.

In the Board's view, the independent claims of a set of claims do not normally have to recite corresponding features in order to fulfil the requirements of Article 84 EPC. As long as each of the independent claims recites the essential features of the invention, the applicant should in principle be allowed to define the scope of protection as desired. For this reason, the objection for non-correspondence between the two independent claims is not appropriate. Apart from that, the Board notes that independent claim 12 of the present main request specifies the data processing system essentially in terms of a reference to method claims 1 to 11 (see section VII above) and hence the objection no longer applies.

3.2    In its communication, the Board expressed the preliminary opinion, with respect to the claims submitted with the grounds of appeal, that the steps of analysing, creating a table of content, and establishing the anatomy of the document had partially overlapping tasks and were not clearly defined. In the Board's view, those comments no longer apply to present claim 1 of the main request, which combines the three steps into a single step of analysing the content of an electronic document, comprising the establishment of the table of contents.

The Board questioned whether some terms of the claim were clear. Those terms are no longer used, with the exception of the phrases "existing navigational elements" and "analytical processing based on the

electronic document's visual representation". In its
reply, the appellant argued that those two terms were
clear, in that "navigational elements" referred to
elements in the electronic document that could be "used
for navigational purposes in the electronic document,
e.g. page numbers, headers, footers, etc.", while the
"visual representation" of an electronic document
referred to "the way the document is visually presented,
e.g. on a screen of a computing device, including
visually recognizable characteristics, as e.g. font
styles, font size, font type, etc., wherein such aspects
can be analyzed by analytical processing" (see pages 23
and 24 of the appellant's letter). The Board agrees with
the appellant that the skilled person could derive a
clear technical teaching from those features, especially
taking into account the passages of the description
cited by the appellant on pages 20 and 21. The Board
further notes that a table of contents is also a
"navigational element".

3.3     The Board also pointed out that for some of the steps it
        was unclear whether the step was performed at the server
        or at the portable computing device. In present claim 1
        such a deficiency is not present, since an explicit
        indication is given whenever needed.

3.4     The Board is hence convinced that claim 1 and
        corresponding claim 12 of the main request fulfil the
        requirements of Article 84 EPC.

4.      *Added subject-matter*

4.1     Claim 1 of the main request is based on original
        claims 1, 2, 7 and 8 and passages of the description.
        Even though those original claims were not in a single
        chain of dependency, the skilled person would interpret

the description as teaching in combination the features
taken from those claims, as explained in the following.

4.2     Original claim 1 was directed to a method of delivering
        content to a portable device including the steps for
        processing a request for content from the portable
        device (corresponding to the second part of claim 1 of
        the present main request), whereas original claim 7
        covered both analysing the document and processing a
        request for content from the portable device.

4.3     The analysing step is disclosed in original claims 7 and
        8, on page 12, lines 7 to 21 of the description, and in
        Figure 8.

        According to the appellant, the details of the analysing
        step with regard to the table of contents were disclosed
        on page 20, line 3 to page 21, line 7.

        The passage on page 20, lines 3 to 10 discloses that if
        the document is an unstructured document, i.e. if "the
        document has minimal navigation information and
        structured elements such as headers, footers, tables,
        and font style use upon which the invention can directly
        extract such format and navigational information", then
        the server constructs such navigation information by
        analysing the (unstructured) document. In the opinion of
        the Board, the skilled person interprets this passage as
        implying that, if navigational elements exist (e.g.
        headers or footers, see point 3.2 above), they are used
        to create navigational information (or a table of
        contents). Otherwise, the server constructs these
        navigational elements by analysing the document.

        The next paragraph on page 20, line 11 to page 21,
        line 7 explains how the document is analysed

("analyzation"). In particular, it explains that it is done by "detecting changes in font size, font type, font style and font positioning", and by marking those textual content elements as headers or text paragraphs by some established criteria on the font properties. It then states that "[b]y identifying the headers 362 based on this information the invention can construct a navigational aid in the form of a Table of Contents where none exists for the unstructured document". This confirms the interpretation of the previous paragraph. Furthermore, according to this and the previous passage, if no navigational elements (including a table of contents) exist, the navigational elements are first created by analytical processing based on the electronic document's visual representation (see also point 3.2 above), and then used to create a table of contents.

The Board therefore agrees with the appellant that the features of the claim describing the establishment of a table of contents and the submission of the document to analytical processing if no navigational elements exist are disclosed in the passage on pages 20 and 21 cited by the appellant. Original claim 7 combines the analytical processing with other parts of the claimed analysing step.

4.4     The step of storing the document object model is depicted on Figure 8 and disclosed on page 2, lines 9 to 15 and page 12, lines 16 and 17, and supported also by page 14, lines 11 to 13.

The steps of receiving a request from the portable device and reconstructing and transmitting the identified portions are disclosed in original claims 1, 2 and 7. The details of the reconstructing step can be

derived from the application as originally filed for the reasons given in the following.

4.5    Original claim 2 specified that the step of identifying the portions of the document involved using "a lookup or navigation tree to identify one or more portions of the document". Present claim 1 recites that the step of "identifying (106), at the server (10), one or more portions of the electronic document associated with the requested specific content" includes "traversing the DOM of the electronic document and using said established navigational information to find said requested specific content".

The appellant argued that the feature "traversing the DOM" was disclosed on page 12, lines 7 to 24, and page 20, lines 8 to 13. The passage of page 12, lines 7 to 21, and the cited lines of page 20, however, appear to be related to "anatomisation", and do not seem to be about identifying portions of a document associated with a request.

In spite of that, the Board comes to the conclusion that the step of identifying the portions of the document can be considered to be disclosed in the original application. In particular, it can be read from different passages that the navigation information, or table of contents, and the DOM are created for processing future requests for content at the server, for example, page 14, lines 11 to 13, original claim 2, and page 28, last two lines. Furthermore, the Board notes that the processing of a request for document content is performed at the server, as described on page 13, line 18 to page 14, line 4 and depicted on Figure 10, using "transcerption technology" (see also page 9, lines 14 to 19, and page 18, lines 18 to 23). As

explained in the passage on pages 13 and 14, the DOM is
retrieved from the cache or from the database in order
to identify and reconstruct the requested content. The
skilled person assumes that using the DOM in the way
disclosed in those passages of the application requires
traversing the DOM in order to obtain the necessary data
for identifying and reconstructing the requested
content.

4.6     The features recited in independent claim 12 of the data
        processing system of the invention are described on
        page 5, line 18 to page 6, line 3, and shown in
        Figure 2. Some of those features were also mentioned in
        original claims 1 and 7.

4.7     The Board is therefore satisfied that independent method
        claim 1 and corresponding independent system claim 12 of
        the main request fulfil the requirements of
        Article 123(2) EPC.

5.      *Inventive step*

5.1     In the contested decision, the Examining Division
        considered the disclosure of document D1 an appropriate
        starting point for the discussion of inventive step.

        Document D1 discloses a method for converting content of
        an electronic document for delivery to a wireless device
        in a format appropriate for displaying at the wireless
        device (abstract, page 8). In a preferred embodiment,
        the content conversion is performed at a server
        (Figure 1, page 13 to page 15, first full paragraph).

        The method of D1 is concisely explained on page 8 and in
        claim 1, and depicted on Figure 2. It includes receiving
        a request for an original electronic document, the

request including an indication of the type of the requesting wireless device. In response to the request, the original electronic document in a first markup language is divided into multiple document elements, including textual and non-textual elements. One or more of the elements are converted to the second markup-language. A converted electronic document is created from the converted elements and sent to the requesting device.

5.2     The appellant argued that the skilled person would not have considered document D1, when being faced with the problem of "providing excerpts of various different formats of electronic documents to a portable wireless device". Furthermore, the solutions to the "translation issues" did not provide the skilled person with any hint or help with regard to the problem of providing portions of an unstructured document, e.g. a scanned text document, to a portable computing device.

The Board agrees that document D1 is not directed to the problem of providing portions of a non-marked-up document to a portable device. However, the present invention is related to the problem of conversion of content from an electronic document stored in a server for transmission to and display in a remote portable device, taking into account limited bandwidth and display capabilities of the device (see for example page 1, line 18 to page 2, line 7 of the description of the present application). The invention of document D1 addresses the same problem, as described on page 6, first full paragraph to page 7, and on page 24, first row of Table 2. The Board hence shares the view expressed in the contested decision that the skilled person would consider the teaching of document D1 for solving the general problem of the present invention.

Document D1 is therefore an adequate starting point for
the assessment of inventive step.

5.3     The passage of document D1 starting on page 18 and
        Figure 2 give a more detailed description of the method.
        In order to divide and convert the document, the method
        may employ three division methods, namely logical
        division, categorised division, and targeted conversion
        (page 20, full paragraph, page 34, last full paragraph).

5.3.1   The logical division is described as preserving "as much
        of the structure of the original electronic document as
        possible" (page 35, first four lines). In the embodiment
        described on page 36, last paragraph to page 37, first
        paragraph, the original document in a first markup
        language HTML (Hypertext Markup Language) is translated
        to a document in a second markup language WML (Wireless
        Markup Language), a deck of WML cards, one WML card for
        each category, and links to allow navigation between the
        WML cards (page 36, last paragraph, Figure 4).

5.3.2   Using the categorised division, the document is divided
        into elements of different categories, for instance
        text, links, navigation, page sections, images and
        tables. The categories are displayed in a list that
        allows navigation to the individual categories (page 37,
        last full paragraph, page 39, Table 7). Document D1
        discloses that in order to perform this division a
        structured model is created for the original electronic
        document, for instance using a DOM (page 39, full
        paragraph, Figure 5).

        In the Board's view, these features of the categorised
        division of document D1 correspond to the features of
        the present claim 1 of analysing by identifying existing
        navigational elements in order to establish navigational

links for the document content. The Board further notes
that these steps involve parsing the document.

5.4     In its letter, the appellant argued that, while the
        description of the embodiment of categorised division in
        document D1 appeared to refer on page 39 to the creation
        of a DOM, the DOM was "only parsed to create search
        [sic] for elements of categories in the electronic
        document". Once the WML cards were created, the DOM was
        not shown to be used anymore in document D1.

        The Board notes that the DOM is also disclosed in
        document D1 in the context of other embodiments, for
        example on pages 44, 48 and 52, but accepts that these
        passages do not explicitly state that the DOM is stored
        for future usage in the context of processing further
        requests for specific content.

5.5     The method of document D1 provides a list of links to
        elements of a document (page 41, second full paragraph
        to page 42, Figure 7). As explained by the appellant,
        the list of links allows the user to "actively navigate
        between WML cards". In the opinion of the Board, it is
        clear from document D1 that the links are used for
        obtaining further parts of the document, e.g. WML cards,
        and therefore constitute navigational information used
        to find the portions associated with the requested
        content, which are reconstructed and transmitted to the
        portable computing device.

        The appellant argued that the list of links merely
        constituted navigation links inside the deck of cards
        and could not indicate the summary of contents of the
        converted document in the manner of a table of contents.
        The Board does not share that view. As disclosed on
        page 39, Table 7, the WML cards are created from HTML

elements and may include text elements or page sections.
The Board therefore considers that such a list of links
to document elements created by the method of D1, either
by logical or categorised division, constitutes a table
of contents in the meaning of the claim and as described
in the application: "a hierarchical navigational
structure to the document content for informing and
assisting in navigation of the document
content" (page 30, point 17).

5.6    From the above, it follows that the subject-matter of
       claim 1 differs from the method of document D1 in that:
       (a) where no navigational elements exist in the
           document, the table of contents is established by
           analytical processing based on the document's
           visual representation, and
       (b) the DOM is stored in a DOM storage and, in
           processing a request, the DOM is traversed for
           identifying the portions of the document
           associated with the requested specific content,
           and to reconstruct the identified portions.

5.7    According to the appellant, the analytical processing
       consists of "establishing a table of contents on the
       basis of the visual representation of the document as
       discussed [...] e.g. on page 20, line 3 to page 21,
       line 7 of the original description" (page 26 of the
       appellant's letter). That passage of the description
       explains that in order to obtain the navigational
       information the system detects changes in the font's
       properties such as type, size, style and positioning.

       In its letter, on pages 28 and 29, the appellant argued
       that the technical effects of the distinguishing
       features were that "a wider variety of electronic
       documents - with no or at least much less dependence on

type, format or structure thereof —" could be provided
in an efficient, convenient and reliable manner. In
addition, by storing the DOM and using the stored DOM to
reconstruct requested content, the method allowed
different users to individually retrieve different
portions and different specific content of the same
electronic document in a very efficient manner.

The appellant formulated the objective technical problem
as "providing the efficient and reliable improvement in
the delivery of electronic documents to portable devices
for a wider variety of electronic documents and with
more flexibility for multiple users in requesting
specific content" (page 29 of the appellant's letter).

5.8     The Board agrees that distinguishing feature (a) solves
        the technical problem of extending the method of
        document D1 to also support access to a wider variety of
        electronic documents.

        The Board however is of the opinion that since claim 1
        does not give any details regarding the "request from
        the portable computing device for specific content
        associated with the electronic document", the latter
        cannot be distinguished from the requests for content
        processed by the invention of D1. Hence, the Board does
        not recognise that the invention supports additional
        advanced retrieval of "different portions and different
        specific content of the same electronic document", as
        argued by the appellant.

        The Board recognises that storing the DOM in a DOM
        storage, as defined in feature (b), for re-using the DOM
        in future requests, may lead to more efficient
        processing of those requests. Furthermore, feature (b)
        can be considered advantageous when the server

communicates with different devices, since a DOM is a
standard programming interface that can be used in a
wide variety of environments and applications. However,
the document object model was widely used at the time of
priority of the present application, its advantages
being well known to the skilled person. Furthermore, as
recognised by the appellant, it is at least clear that
the DOM in the method of D1 is stored temporarily, and
used to identify and reconstruct elements of the
document. Document D1 also discloses on page 48 the
storage of extraction expressions in the
database connected to the content converter (database 18
of Figure 1). To store this DOM in a DOM storage, and
extend its use for processing the request and future
requests, would be an obvious implementation option for
the skilled person, who would be aware of the associated
advantages mentioned above.

The Board does not recognise a synergistic effect
resulting from the combination of features (a) and (b).

5.9     With respect to feature (a), in the grounds of appeal
        the appellant argued that the skilled person had "no
        motivation whatsoever to make use of analytical
        processing of the document's visual appearance in order
        to establish navigational links", because in the method
        of document D1 such navigational links already existed.
        A similar line of argumentation was followed in the
        appellant's reply to the Board's communication. The
        Board does not find that argument persuasive, because
        the motivation does not have to be explicitly mentioned
        in the closest prior art document, and it is standard
        practice to extend the functionality of a system.

        In the Board's view, it would be obvious for the skilled
        person faced with the problem of extending the method of

document D1 to other types of document, i.e. to documents without mark-up tags, to previously pre-process each document to obtain a mark-up version of the document. Such a pre-processing would typically involve an "analytical processing" of the document's visual representation, if the document did not contain navigational elements.

Such an approach is disclosed in document S4, which is directed to the problem of transforming existing printed documents to electronic documents using character recognition and other techniques to extract the document's logical structure (page 1048, left column, page 1049, right column). According to the abstract and page 1049, left column, the table of contents is very concise and useful to represent the logical structure of a book document. In the approach of S4, the logical structure of a document is obtained by detecting headings, chapters and other elements of the document by an analysis of the size, width and line spacing of text blocks (page 1049, right column, Figure 2, page 1051, right column). Similar techniques are also described in document S1. As described on page 282, left column, section 3.5 of that document, the font size can be estimated from the text line height and used to classify each text block into e.g. paragraph, heading, section or title.

5.10    From the above reasoning, it follows that the subject-matter of claim 1 of the main request does not involve an inventive step (Articles 52(1) and 56 EPC).

**First and second auxiliary requests**

6.      Claims 1 of the first and second auxiliary requests (see
        sections VIII and IX above) additionally recite features
        essentially specifying that:
        (i)   a table of contents of the electronic document is
              established as navigational information by one of
              the following:
              (i.a) extracting the table of contents from the
                    electronic document, if one exists,
              (i.b) identifying existing navigational elements,
                    including at least one of headers, footers
                    and tables, if a table of contents does not
                    exist, or
              (i.c) analytical processing based on the
                    electronic document's visual representation,
                    comprising detecting changes in at least one
                    of font size, font type, font style and font
                    positioning in textual content elements of
                    the electronic document, if no navigational
                    elements exist;
        (ii)  the requested specific content is transmitted in
              content excerpts of the electronic document to the
              portable computing device, an initial excerpt of
              content of the transmitted content excerpts is
              prepared for transmission, at the server, by
              obtaining the table of contents of the electronic
              document based on content available in the DOM,
              and the initial excerpt of content is stored, at
              the server, in a cache memory for repeated access
              purposes.

        With respect to the first auxiliary request,
        features (i) replace corresponding features of the main
        request. In particular, features (i.b) and (i.c)
        essentially further specify that navigational elements

include headers, footers and tables (i.b), and that the
document's visual representation comprises some font
properties (i.c).

7.    *Clarity and added subject-matter*

7.1   The Board is satisfied that features (i) and (ii) are
      clearly formulated (see point 3.2 above).

7.2   Features (i.b) and (i.c) give further details about the
      features discussed for the main request under point 4.3
      above. Those details are also mentioned on page 20,
      lines 3 to 17 of the description (see also point 4.3
      above). Feature (i.a) is disclosed on page 21, lines 11
      to 16. Further basis for the additional features of the
      first auxiliary request can be found on page 18, lines
      19 to 23, page 19, lines 8 to 9 (extraction of table of
      contents), and page 21, lines 3 to 5.

7.3   Features (ii) are taken from original claim 12
      (transmitting content excerpts), and from the
      description on page 8, lines 3 to 6 (initial excerpt and
      cache), and page 30, lines 18 to 19 (requested content
      excerpt).

7.4   Independent claims 1 of the first and second auxiliary
      requests therefore satisfy the requirements of
      Article 123(2) EPC.

8.    *Inventive step*

8.1   Features (i) of claim 1 of the first auxiliary request
      differ from corresponding features of the main request
      essentially in that feature (i.a) was added, and in that
      features (i.b) and (i.c) further specify the
      corresponding features of the main request. As explained

under points 5.3.2 and 5.5 above, the Board is of the
opinion that document D1 already discloses creating a
table of contents in a way corresponding to
features (i.b). Furthermore, the Board finds that it
would be obvious to directly use a table of contents, as
taught by feature (i.a), if it is already present in the
electronic document. With regard to features (i.c), the
Board notes that the discussion of point 5.9 above
already covered such possible interpretations of the
corresponding feature of the main request. The Board
therefore finds that features (i) lack an inventive
step.

8.2     Regarding features (ii), the Board notes that
        document D1 also discloses "textual clipping", which
        consists of splitting the electronic document into
        excerpts to be transmitted to the portable device, e.g.
        in order to take into account memory and bandwidth
        restrictions. In that case, an initial excerpt is
        transmitted with links to the "clipped text" (page 34,
        first full paragraph, page 24, first row of the table,
        "Textual clipping"). Furthermore, as discussed under
        point 5.4 above, the system of document D1 uses a DOM
        for creating an initial excerpt , e.g. a table of
        contents, of an electronic document. Additionally,
        document D1 mentions the possibility of using a cache
        (paragraph bridging pages 18 and 19). It would be
        obvious to use it for the initial excerpt, which is
        expected to be used very often. The Board hence
        concludes that document D1 discloses the same or obvious
        minor variations of each one of the additional features
        of the second auxiliary request, features (ii) above.

8.3     It follows that claims 1 of the first and second
        auxiliary requests do not fulfil the requirements of
        Articles 52(1) and 56 EPC for lack of inventive step.

**Third auxiliary request**

9.      Claim 1 of the third auxiliary request additionally
        recites that the method further includes predictive
        caching of the content excerpts relating to the request
        and the content excerpt previously sent (see section X
        above).

10.     *Clarity and added subject-matter*

        The additional feature is clearly formulated, and finds
        support in the application as originally filed, for
        example in original claim 13, on page 8, lines 3 to 16,
        and on page 14.

11.     *Inventive step*

11.1    The appellant argued that the feature of claim 1 of the
        third auxiliary request further improved the efficiency
        of handling user requests, since the potentially
        requested excerpts for future user requests were cached
        according to predictive caching. This caching allowed
        the preparation in advance of content that might be
        likely to be requested by the user in future requests.

        Since Dl was silent on such aspects of predictive
        caching, but rather held available the whole content of
        the converted document independently of user behaviour,
        document D1 actually could not provide any hints that
        could or would motivate the skilled person in any way to
        modify the teaching of D1 towards the solution of
        claim 1 of the third auxiliary request.

11.2    The Board recognises that the additional feature of
        claim 1 of the third auxiliary request has the technical

effect mentioned by the appellant. Furthermore, the Board finds that the distinguishing features discussed with respect to higher ranking requests relating to storing the DOM and using the DOM in processing requests for specific content associated with the electronic document, and to caching the initial excerpt, combine with the predictive caching of content excerpts of the third auxiliary request in a synergistic manner. Since the excerpts of the document are cached based on the user requests, and the DOM is re-used for repeated accesses, the system may more efficiently handle user requests without unnecessarily caching the whole document or parts of the document which are later not accessed, leading to an increased gain in efficiency.

Even though document D1 mentions caching, it does not describe a combined solution of using a DOM for repeated access to parts of the document and caching excerpts of the document on the basis of the user requests. None of the other prior art documents discloses the distinguishing features in combination. The Board is not convinced either that, at the date of priority of the present application, it would have been within the routine work of the skilled person to combine the distinguishing features to those of the method of document D1.

11.3   The Board therefore concludes that the subject-matter of claim 1 and of corresponding independent claim 9 of the third auxiliary request is inventive (Articles 52(1) and 56 EPC).

**Remittal**

12.     Since the subject-matter of independent claims 1 and 9
        of the third auxiliary request is inventive and
        complies with Article 123(2) EPC, the Board decides to
        set aside the decision under appeal and remit the case
        to the department of first instance. However, prior to
        grant, the other claims and the description may have to
        be adapted.

13.     Under these circumstances, there is no need to consider
        the fourth to sixth auxiliary requests.

**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 for further prosecution on the basis of
    the third auxiliary request.

The Registrar:                          The Chairman:

I. Aperribay                            R. Moufang

Decision electronically authenticated