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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:
DECISION
of Technical Board of Appeal 3.5.07
of 14 April 2016

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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. Mofang
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:

In an obiter dictum, the Examining Division cited two documents introduced into the proceedings by the Examining Division during the oral proceedings:

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 excerpts [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 "transcription 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
especially 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 D1 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