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Datasheet for the decision of 14 February 2018

Case Number: T 2193/12 - 3.5.04

Application Number: 04742932.9

Publication Number: 1636989

IPC: H04N7/16

Language of the proceedings: EN

Title of invention:
METHOD AND SYSTEM FOR SELECTIVELY DISTRIBUTING DATA TO A SET OF NETWORK DEVICES

Applicant:
Accenture Global Services Limited

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - after amendment

Decisions cited:

Catchword:

Europäisches Patentamt
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Boards of Appeal

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Case Number: T 2193/12 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 14 February 2018

Appellant: (Applicant)	Accenture Global Services Limited 3 Grand Canal Plaza Grand Canal Street Upper Dublin 4 (IE)
Representative:	Müller-Boré & Partner Patentanwälte PartG mbB Friedenheimer Brücke 21 80639 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 20 April 2012 refusing European patent application No. 04742932.9 pursuant to Article 97(2) EPC**

Composition of the Board:

Chairman	C. Kunzelmann
Members:	A. Dumont
	B. Müller

Summary of Facts and Submissions

I. The present appeal is against the decision of the examining division to refuse European patent application No. 04742932.9, published as WO 2004/114663 A1.

II. The following prior-art documents were cited in the proceedings:

D1: WO 00/64178 A1

D2: WO 96/41472 A1

D3: "Chapter 5: The Network Layer in the Internet (excerpt) TANENBAUM A.S.", 1 January 1996, COMPUTER NETWORKS (THIRD EDITION), LONDON: PRENTICE-HALL INTERNATIONAL; GB, pages 431-436, XP007918483, ISBN: 978-0-13-394248-4

D4: US 2003/041335 A1

D5: WIKIPEDIA: "Software release life cycle", INTERNET CITATION, 9 May 2003, page 1, XP007919724, retrieved from the internet: URL: http://en.wikipedia.org/w/index.php?title=Software_release_life_cycle

III. The examining division refused the application on the grounds that the subject-matter of the independent claims according to the requests then on file lacked an inventive step within the meaning of Article 56 EPC, based on documents D1 to D5, with D3 providing evidence of the common general knowledge.

IV. With the statement of grounds of appeal the appellant filed sets of claims according to a main request, a first auxiliary request and a second auxiliary request. It further explained why the prior art would not lead

the skilled person to the method of claim 1 of any of the requests.

V. In the summons to the oral proceedings, the Board expressed its provisional agreement with the examining division, considering the objection of lack of inventive step well-founded starting from D1. It further considered that D2 was even more relevant than D1 for assessing inventive step.

VI. In reply to the summons, the appellant filed amended claims of a new main and a new auxiliary request, based on the claims of the second auxiliary request as filed with the statement of grounds of appeal.

VII. Oral proceedings took place on 14 February 2018. In those proceedings, the appellant filed a main request comprising claims 1-21 replacing all previous requests.

VIII. The appellant requested that the decision under appeal be set aside and that a European patent be granted on the basis of claims 1-21 of the main request filed during the oral proceedings of 14 February 2018.

IX. Claim 1 reads as follows:

"A method of selecting a set of devices and distributing data to the set of devices (18) linked by a network, each said device having at least one unique identifier comprising a string of bits or characters of a first length, the method comprising the steps of: defining, by specifying a matching key to match at least a portion of the unique identifier of each device, the set of devices to receive the data based on the at least one unique identifier;

wherein the matching key corresponds to a shorter length subset of the string of the first length;
the shorter length subset of the string is of a selectable length; and
the selectable length of the shorter length subset of the string is larger or smaller depending on the size of the set of devices; and
distributing data to the devices of the set of devices, the data including the matching key for matching at least the portion of the unique identifiers of the devices of the set of devices, wherein distributing the data comprises making the data available to the set of devices and subsequently making the data available to further subsets of the population of devices;
the method further comprising the steps of:
monitoring the response following making the data available to the set of devices, and
setting the size of the further subsets based on the response;
wherein the further subsets are defined by specifying the matching key to match a portion of the unique identifier of each device;
wherein the size of the set of devices and the size of each of the further subsets are determined by setting the length of the matching key to match; and
wherein a shorter length will match a larger number of devices."

X. Independent claim 20 reads as follows:

"A system for selecting a set of devices and distributing data to the set of devices (18) linked by a network, each said device having at least one unique identifier comprising a string of bits or characters of a first length, the system comprising:

means for defining, by specifying a matching key to match at least a portion of the unique identifier of each device, the set of devices to receive the data based on the at least one unique identifier;
wherein the matching key corresponds to a shorter length subset of the string of the first length,
the shorter length subset of the string is of a selectable length;
the selectable length of the shorter length subset of the string is larger or smaller depending on the size of the set of devices;
means for distributing data (10, 12) to the devices of the set of devices, the data including the matching key for matching at least the portion of the unique identifiers of the devices of the set of devices;
wherein distributing the data comprises making the data available to the set of devices and subsequently making the data available to further subsets of the population of devices; and
means for running the data on each respective selected device;
and wherein the system further comprises:
means for monitoring the response following making the data available to the set of devices, and
means for setting the size of the further subsets based on the response;
wherein the further subsets are defined by specifying the matching key to match a portion of the unique identifier of each device;
wherein the size of the set of devices and the size of each of the further subsets are determined by setting the length of the matching key to match; and
wherein a shorter length will match a larger number of devices."

XI. Independent claim 21 reads as follows:

"A computer program product comprising means for performing the method of any of claims 1 to 19."

XII. The reasons for the decision under appeal which are relevant for the present decision may be summarised as follows:

D1 disclosed a method of distributing data to a set of devices based on single-cast or multi-cast addresses. Using a portion of a full IP address to determine a group of addresses was common general knowledge, as evidenced in D3 under "Internet Multicasting". As a result, the subject-matter of claim 1 of the main and first auxiliary requests lacked an inventive step (Article 56 EPC).

D4 disclosed a method of distributing data to a set of devices, with a matching key being a version number of the data to be distributed. It would be obvious to use the procedure of D3 to solve the first technical problem of selectively addressing devices connected to the network. In addition, it would be obvious to use the well-known procedure of D5 (essentially, subsequently delivering alpha, beta and release versions of software to an increasing number of testers) to solve the second technical problem of finding ways for testing software updates. The two problems were unrelated, and the solutions were juxtapositions producing no synergistic effect. As a result, the subject-matter of claim 1 of the second auxiliary request lacked an inventive step (Article 56 EPC).

XIII. The additional objection by the Board in the summons to oral proceedings may be summarised as follows:

D2 disclosed the selective distribution of data, e.g. a software upgrade, to a set of devices such as set-top boxes each having a unique identifier comprising different fields. When addressing a set of devices, wildcard indicators could be used to disregard certain fields. Each field of each unique identifier had an appropriate length, such that a selectable appropriate portion of a shorter length (the non-disregarded fields) was used to test a match with a key. As a result, the subject-matter of claim 1 of the main and first auxiliary requests as filed with the statement of grounds of appeal lacked novelty.

XIV. The appellants' arguments which are relevant for the present decision may be summarised as follows:

The invention solved the problem of improving the flexibility and efficiency of data distribution to a population of devices, by reducing the necessary bandwidth.

Implementing multicasting as per D3 in D1 would require abandoning a standard implementation and modifying the devices of D1. There was no hint that a skilled person would (and not only could) do it.

D2 and D4 did not disclose the unique identifier as in the invention. They did not disclose a functional dependency between monitoring a response, setting the size of subsequent subsets and subsequently making the data available to further subsets of the population.

D5 merely disclosed testing software updates using a recursive procedure.

Reasons for the Decision

1. The appeal is admissible.

2. The invention relates to a method according to claim 1, i.e. a method of selecting a set of devices and distributing data to that set of devices in a network. The size of the set of devices and the size of each of further subsets are determined by setting the length of a matching key. The size of the subsequent subsets, i.e. the length of the subsequent keys, is adapted on the basis of a response received from the devices. The response consists of any feedback, e.g. from users calling the service line in a first phase of software deployment. This allows for a gradual deployment of (update) data depending for instance on user feedback, thus producing a more favourable use of resources (see the description, page 6, lines 1 to 18, and page 9, lines 22 to 34; claim 42 as filed).

3. Novelty (Article 54(1),(2) EPC 1973)

None of the documents at hand discloses a method with all the steps of claim 1, in particular the combination of features mentioned in the preceding paragraph. Its subject-matter is therefore novel.

4. Inventive step (Article 56 EPC 1973)

4.1 Document D4 as the closest prior art

4.1.1 Claim 1 comes closest to claim 1 according to the second auxiliary request on which the decision under appeal was based. The examining division considered D4 to be the closest prior art when assessing the subject-matter of that claim.

4.1.2 D4 discloses a method of distributing data (e.g. a software upgrade) to a set of devices (decoders) in a broadcast network. Each decoder has its own locally stored (unique) identifier having two fields (version identifier and maker identifier), as well as a subscriber number. On a regular basis, each decoder checks whether a part contained in an "announcement signal" in the incoming data matches the identifier. In particular, the version identifier is checked (see paragraphs [0033], [0034], [0062] and [0063]). Sets may be updated successively, depending on the response from decoders already updated (see paragraphs [0075], [0078] and [0079]).

4.1.3 The Board accepts that using a portion of a full (IP) address to specify a group is common general knowledge. This is evidenced in D3, where a network is partitioned e.g. according to the most significant bits of the IP address by masking less significant bits (see in particular pages 435 and 436). Routing in the network is then implemented by bitwise Boolean address matching at the network layer level. The Board also accepts that the matching key of claim 1 would correspond to the "bit map indicating the desired destinations" on page 370 of the textbook from which D3 is an excerpt (see points 9.5 and 9.6 in the decision under appeal). The Board lastly considers that the fact that a shorter length, or a shorter bit map, will in theory match a larger number of devices reflects an "arithmetic" property of such an addressing scheme.

4.1.4 The Board further notes that D5 discloses a scheme of dividing a population into subsets of testers, distinct from the general population, and adapting the subset by monitoring the response, e.g. in cases where fatal bugs

are detected by the community of testers. It therefore establishes a functional dependency between monitoring and distributing the update data.

4.1.5 The examining division argued that combining D4 with D3 would be obvious for solving the first technical problem of finding ways of selectively addressing devices connected to a network. The Board disagrees for the following reasons.

4.1.6 With regard to D4, the Board considers, contrary to the appellant, that the concatenation of the fields (version identifier and maker identifier) with the subscriber number qualifies as a "unique identifier" as set out in claim 1. However, in D4 the selection of a set of devices and the distribution of data are determined by the content of the field(s), especially the version identifier. Those fields are *a priori* of a predetermined length, which cannot be varied or "set" to determine the size of the set of devices in the first place.

4.1.7 Document D3 was cited as evidence of common general knowledge for the use of a variable-length mask addressing a set of devices identified by a portion of their address, thereby achieving multicasting to variable sets of terminals. It could in principle be envisaged to set (and vary) the length of an IP address to route the data to different sets of devices, following the technique of D3. However, this would not determine the size of the set of devices, since the IP address is not used in D4 as the matching key for the purpose of software upgrading.

4.1.8 Furthermore, D4 teaches away from setting a length of a mask irrespective of the predetermined size (and

position) of the various fields, since this would negate the meaning of the fields (e.g. the version identifier).

4.1.9 Finally, there is nothing in D3 or D4 to suggest setting the length of the matching key to determine the size of a (subsequent) further subset of devices.

4.1.10 In conclusion, there is no obvious possibility of combining D4 with common general knowledge (as evidenced in D3) to solve the first technical problem of finding ways of selectively addressing devices connected to a network, in a first set and a subsequent subset of devices, and to arrive at the corresponding steps as set out in the method according to claim 1.

4.2 Document D2 as the closest prior art

4.2.1 D2 discloses the selective distribution of data, e.g. a software upgrade, to a set of devices (e.g. set-top boxes, TV sets), with each device having a unique identifier ("exclusive identification number") having several (sub)fields (brand, model number, customer serial number, region number, ...). A set of devices is selected, e.g. on the basis of a geographical region, a brand or a model number. Wildcard indicators cause selectable parts of the identification number, e.g. the field defining the serial number, to be disregarded when the "indicator address" is compared with the unique identifier. A match then causes the device to selectively receive the data (see page 7, lines 2 to 27 and lines 34 to 37; page 10, lines 31 to 38; see also Figures 2 and 3). The wildcards thus cause the comparison to be made on an identifier of a shorter length. The wildcards correspond to the mask bits of D3.

4.2.2 However, as in D4, the selection of a set (or a further subset) of devices and the distribution of data are determined by the content of the fields, e.g. the region number. Those fields are *a priori* of a predetermined length, which cannot be varied or set.

4.2.3 As a result, there is also no obvious possibility of combining D2 with common general knowledge (as evidenced in D3) to solve the first technical problem of finding ways of selectively addressing devices connected to a network and to arrive at the corresponding steps as set out in the method according to claim 1.

4.3 Document D1 as the closest prior art

4.3.1 In the decision under appeal, the examining division considered D1 to be the closest prior art for claim 1 of the main request as well as for claim 1 of the first auxiliary request. D1 discloses a method of distributing data (e.g. a software upgrade) to a set of devices (set-top terminals). Only a specific set of devices is selected, in that the devices check the match between a locally stored identifier and a "value" contained in the incoming transport stream (see page 3, lines 11-17, and page 6, lines 16-27). The identifier may be a unique one (a "single-cast address") or an address shared with other terminals (a "multi-cast address"). In "targeted upgrade" mode, a small group of devices can then be selected by specifying either their individual single-cast address or one multicast address (see page 17, line 28, to page 18, line 4). D1 does not disclose setting the length of a matching key, or the length of the "value", in the first place.

4.3.2 In the decision under appeal the examining division did not use D1 as a starting point for challenging inventive step for the second auxiliary request. Different subsets of terminals are determined by different (multi-cast) addresses locally stored in the terminals. Setting the length in order to determine the size of subsequent sets or groups is not envisaged. Accordingly, the Board cannot see how the technique evidenced by D3 could be combined with any of the address schemes of D1, either single-cast or multi-cast, without a substantial change in the operation of the set-top terminals, in order to solve the problem of finding ways of successively addressing groups of devices connected to a network.

4.3.3 As a result, there is also no obvious way of combining D1 with common general knowledge (as evidenced in D3) to solve the first technical problem of finding ways of selectively addressing devices connected to a network and to arrive at the corresponding steps as set out in the method according to claim 1.

4.4 In conclusion, the subject-matter of claim 1 according to the main and sole request involves an inventive step over the prior art cited in the proceedings.

4.5 Independent claim 20 relates to a system comprising the means for performing the steps according to claim 1. In particular, it contains the specification that the size of the set of devices and the size of each of the further subsets are determined by setting the length of the matching key to match. Therefore, its subject-matter also involves an inventive step over the prior art cited in the proceedings, for reasons analogous to those given above in relation to the method of claim 1.

4.6 Independent claim 21 relates to a computer program product comprising means for performing the method of claim 1. Therefore, its subject-matter also involves an inventive step over the prior art cited in the proceedings for the same reasons as given for the method of claim 1.

5. The Board is satisfied that the claims fulfil the requirements of the EPC. The decision under appeal is therefore to be set aside.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent with the following claims and a description to be adapted thereto:

Claims 1-21 of the main request filed during the oral proceedings of 14 February 2018.

The Registrar: The Chairman:

K. Boelicke C. Kunzelmann

Decision electronically authenticated