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Datasheet for the decision of 11 January 2013

Case Number: T 0575/09 - 3.5.06

Application Number: 01123076.0

Publication Number: 1298526

IPC: G06F 9/46, G06F 17/30

Language of the proceedings: EN

Title of invention:
Communicating message with type, object and identifiers from business application to service application

Applicant:
SAP AG

Headword:
Hierarchical type and object serialisation/SAP

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step - no (all requests)"

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0575/09 - 3.5.06

D E C I S I O N
of the Technical Board of Appeal 3.5.06
of 11 January 2013

Appellant: SAP AG
(Applicant) Dietmar-Hopp-Allee 16
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 22 October 2008 refusing European patent application No. 01123076.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: D. H. Rees
Members: G. Zucka
W. Sekretaruk

Summary of Facts and Submissions

I. The appeal is against the decision by the examining division, with reasons dispatched on 22 October 2008, to refuse European patent application 01123076.0, on the basis that the subject-matter of the independent claim 1 in both the main and the auxiliary request was not inventive, Article 56 EPC 1973. The following documents were cited during the first instance procedure:

D1: "Java Object Serialization Specification", November 1998, Sun Microsystems

D2: "The Common Object Request Broker: Architecture and Specification, Version 2.3.1", October 1999, Object Management Group

D3: R. Bourret *et al.*, "A generic load/extract utility for Data Transfer Between XML Documents and Relational Tables", Proceedings of Second International Workshop on Advanced Issues of E-Commerce and Web-Based information Systems, WECWIS 2000, ISBN 0-7695-0610-0, pages 134-143, IEEE, August 2000

II. A notice of appeal was received on 8 December 2008, the appeal fee being paid on 11 December. A statement of the grounds of the appeal was received on 11 February 2009.

III. The appellant requested that the decision be set aside and a patent granted on the basis of the main or one of

the auxiliary requests 1 to 3 filed with the grounds of appeal.

IV. The board issued a summons to oral proceedings. In an annex to the summons, the board set out its preliminary opinion on the appeal. In reply to the summons, the appellant introduced a fourth auxiliary request.

V. During the oral proceedings, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request, filed with the letter dated 10 February 2009, or on the basis of auxiliary request 4, received on 7 December 2012 (thus replacing the previous first auxiliary request by the request filed in response to the summons), or on the basis of one of auxiliary requests 2 or 3, each filed with the letter dated 10 February 2009.

VI. The appellant's main request is that the decision under appeal be set aside and a patent granted on the basis of claims 1 to 8 labelled "Main Request" received with the statement of grounds of the appeal.

The appellant's auxiliary request 1 is that the decision under appeal be set aside and a patent granted on the basis of claims 1 to 7 labelled "Fourth [*sic*] Auxiliary Request" received on 7 December 2012.

The appellant's auxiliary requests 2 and 3 are that the decision under appeal be set aside and a patent granted on the basis of claims 1 to 5 labelled respectively "Second Auxiliary Request" and "Third Auxiliary

Request", both received with the statement of grounds of the appeal.

The further text of all requests is description pages 1 and 3 to 20 as originally filed and pages 2 and 2a re-filed with the grounds of appeal, as well as drawing sheets 1 to 9 received on 8 November 2001.

VII. The independent claim 1 of the main request reads as follows:

A computer system (901/902) for uniquely identifying a target component (1222) in an apparatus (1000) that has components (1xxx) related in hierarchy,

the computer system (901/902) with

a first computer (901) operable to execute a first application (201) in which objects (2xxx) represent corresponding components (1xxx), wherein the first application (201) relates the objects (2xxx) in a type-object hierarchy (110/120); and

a second computer (902) coupled to the first computer (901) via a network (990),

wherein the first computer (901) includes a message generator (101) operable to receive type-object hierarchy information and to provide a message (105) with a type chain (11) in a parent-child direction and an object chain (21) also in the parent-child direction, wherein both chains (11, 21) in combination identify a target object (2222) that corresponds to the target component (1222); and

the second computer (902) includes a message interpreter (102) operable to parse both chains (11, 22) to provide identification of the target component (1222) with type (V) and object (2222) as well as

identification of the parent components with types ((A)(W)(E)) and objects (2000, 2200, 2220),

wherein the message (105} is implemented as a string of characters.

The independent claim 4 of the main request is a method claim with method features that broadly correspond to the apparatus features of claim 1.

VIII. The independent claim 1 of the auxiliary request 1 reads as follows:

A computer system (901/902) for uniquely identifying a target component (1222) in an apparatus (1000) that has components (1xxx) related in type-object hierarchy trees,

the computer system (901/902) having

a first computer (901) operable to execute a first application (201) in which objects (2xxx) represent corresponding components (1xxx) of the apparatus (1000), wherein the first application (201) relates the objects (2xxx) in the type-object hierarchy trees (110/120); and

a second computer (902) coupled to the first computer (901) via a network (990),

wherein the first computer (901) includes a message generator (101) operable to receive type-object hierarchy information and to provide a message (105) with a type chain (11) in a parent-child direction and an object chain (21) also in the parent-child direction, wherein the object chain (21) includes an identifier of a root component of the apparatus (1000), wherein both chains (11, 21) in combination provide a unique path that identifies a target object (2222) that corresponds

to the target component (1222) of the apparatus (1000); and

the second computer (902) includes a message interpreter (102) operable to parse both chains (11, 22) to provide identification of the target component (1222) with target component type (V) and the target object (2222) as well as identification of the parent components with parent types ((A)(W)(E)) and parent objects (2000, 2200, 2220),

wherein the message (105) is implemented as a string of characters, wherein the string is separated into two delimited portions, a first portion of the string comprising the type chain (11), and a second portion of the string comprising the object chain (21),

wherein the target object (2222) is redundant, and

wherein the message generator (101) at the first computer (901) appends an identifier type (I) to the type chain (11) and an identifier object (1222) to the object chain (21) in order to identify the redundant target object (2222).

The independent claim 3 of the auxiliary request 1 is a method claim with method features that broadly correspond to the apparatus features of claim 1.

IX. The independent claim 1 of the auxiliary request 2 reads as follows:

A computer system (901/902) for uniquely identifying a target component (1222) in an apparatus (1000) that has components (1xxx) related in hierarchy,
the computer system (901/902) with a first computer (901) operable to execute a first application (201) in which objects (2xxx) represent corresponding components

(1xxx), wherein the first application (201) relates the objects (2xxx) in a type-object hierarchy (110/120); and

a second computer (902) coupled to the first computer (901) via a network (990),

wherein the first computer (901) includes a message generator (101) operable to receive type-object hierarchy information and to provide a message (105) with a type chain (11) in a parent-child direction and an object chain (21) also in the parent-child direction, wherein both chains (11, 21) in combination identify a target object (2222) that corresponds to the target component (1222); and

the second computer (902) includes a message interpreter (102) operable to parse both chains (11, 22) to provide identification of the target component (1222) with type (V) and object (2222) as well as identification of the parent components with types ((A)(W)(E)) and objects (2000, 2200, 2220),

wherein the message (105) is implemented as a string of characters, and wherein the message generator (101) at the first computer (901) appends an identifier type (I) to the type chain (11), and appends an identifier object (1222) to the object chain (21),

wherein the first computer (901) uses a first computer run-time environment and the second computer (902) uses a second run-time environment, and

wherein the first and second computer run-time environments use different object models, wherein the first application (201) implements the identifier object using a first data type and the message interpreter (102) implements the identifier object using a second data type, and where the second data type is different from the first data type.

The independent claim 4 of the auxiliary request 2 is a method claim with method features that broadly correspond to the apparatus features of claim 1.

X. The independent claim 1 of the auxiliary request 3 distinguishes itself from claim 1 of auxiliary request 2 by the following additional features:

- each type has one or more objects and each object has a type
- the first application indicates the type by text explanations to a user in a first natural language
- the message interpreter of the second computer is operable to communicate identification of the target component and of the parent component to allow a second user of the second computer to find the target component in the hierarchy of other components and to translate terms for types or objects into a second natural language

The independent claim 4 of the auxiliary request 3 distinguishes itself from claim 4 of the auxiliary request 2 by similar additional features.

XI. At the end of the oral proceedings, the chairman announced the board's decision.

Reasons for the decision

1. Reference is made to the transitional provisions in Article 1 of the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the European Patent Convention of 29 November 2000, for the amended and new provisions of the EPC, from which it may be derived which Articles of the EPC 1973 are still applicable to the present application and which Articles of the EPC 2000 shall apply. As far as the Implementing Regulations are concerned, the board refers to Article 2 of the Decision of the Administrative Council of 7 December 2006 amending the Implementing Regulations of the European Patent Convention 2000.

2. *The admissibility of the appeal*

In view of the facts set out at points I and II above, the appeal is admissible, since it complies with the EPC formal admissibility requirements.

3. *Main request*

3.1 *Closest prior art*

During the oral proceedings, the appellant emphasised that the closest prior art should be a system that is part of common general knowledge, *viz.* a system having a first and a second computer, the first computer sending to the second computer information about an apparatus that has, potentially redundant, components related in a hierarchy. The board accepts that such a system is prior art for this application. The

application mentions an aeroplane as an example of an apparatus, information about which might be communicated between computer systems. It would seem very unlikely that such a situation had not arisen before the present application date. The board also agrees that a system with these features is an appropriate starting point for the purpose of assessing inventive step.

3.2 *Inventive step, Article 56 EPC 1973*

The board is not convinced that the subject-matter of claim 1 provides a technical contribution over the prior art, in particular because the mere reference to "an apparatus" imposes no clear technical limitation on the claim. As far as the claimed system is concerned, the objects that are intended to represent apparatus components would seem to be nothing more than that, *i.e.* objects in a computer system. Whether they actually correspond to real-world apparatus components depends entirely on what the user of the system chooses these objects to represent. Nevertheless, it is assumed for the sake of argument that the reference to "an apparatus" does imply some technical limitation.

Starting from the closest prior art mentioned under 3.1 above, the board considers that, given that the components in the apparatus are related in a hierarchy, it would be straightforward for the skilled person to transfer information about the apparatus' components from the first to the second computer by means of some kind of hierarchical description. Where the items at a given level of the hierarchy fall into natural groups (*e.g.* wings of an aeroplane, arms of a human body), it

is further considered natural to identify which is meant by group and member ("left wing", "left arm"). Translating this into a chain of pairs of identifiers (or equivalently two chains of identifiers - see examples (i) and (ii) on description page 15) is equally considered trivial, in particular in the light of the example of class names and object names known from object-oriented programming, as in D1 and the other prior art discussed during examination. Presenting these chains in a parent-child direction or in a child-parent direction would further be equally obvious design choices.

Finally, expressing the identification as a string of characters (supposing what is meant is some known encoding such as ASCII or Unicode) is considered to have nothing to do with the method of identification as such. According to the appellant, an object representing a component can be located in the type-object hierarchy tree independently from the object model used by the particular computers. However, some agreement will in any case need to exist as to how to describe the location of components in the hierarchy. Whether such a description uses a "string of characters" or for example some kind of binary code makes no difference for a computer, except that the former decreases rather than increases efficiency because of the substantial redundancy that is inherent in character strings. The only advantage of using a character string lies in making the identification comprehensible by a human user, which is a different problem, that should be considered separately from the problem of identifying the components in the target computer. There is, in other words, no synergistic

effect, the appellant's arguments to the contrary not being convincing.

The problem of making identification data in computer systems comprehensible to human users is well known and is most commonly solved by expressing the data as character strings (see for example D3, page 135, right-hand column, penultimate paragraph). For this reason, this additional feature is not considered to have an inventive character.

The board therefore considers that the subject-matter of claim 1 of the main request does not satisfy the requirement of Article 56 EPC 1973.

4. *Auxiliary request 1*

The essential difference between claim 1 of the auxiliary request 1 and claim 1 of the main request is that (1) the string of characters is separated into two delimited portions, a first portion comprising the type chain and a second portion the object chain, (2) the target object is redundant and (3) the message generator at the first computer appends an identifier type to the type chain and an identifier object to the object chain in order to identify the redundant target object.

Concerning feature (1), the board considers that there are two equally straightforward manners for a skilled person to embed a type chain and an object chain in a string of characters. One is as a list of type/object pairs and the other is as a pair consisting of a list of types and a list of objects, *i.e.* as specified in

claim 1. The use of a delimitation character (such as ",", ";" or ":") to separate entries in a character string is equally straightforward and well known. The fact that the identifier type and object are appended (at the beginning or the end) of their respective chain (specified as part of feature (3)) solves no technical problem. It merely makes it easier for a human reading the character string to locate the identifier type and object in the character string. As far as the target computer is concerned, it would make no technical difference where the identifier type and object are in the character string. The appellant asserted that it facilitates for example an update of the component hierarchy but such an update would not become more difficult, from the point of view of the apparatuses, if the identifier type and object were located at some other position in the type and object chain, as long as that position is a defined one.

Feature (2) is part of the closest prior art (see 3.1 above).

Feature (3) specifies that there is an "identification" type and object, and that these are added to the respective chains. As to the position, see above. As to the provision of this type and object, the board considers that a skilled person will find it unavoidable somehow to provide an extra identification for redundant objects, *e.g.* by using serial numbers, by naming the items in the list of redundant objects, by sequentially numbering them, or by indicating the position of the redundant objects on a plan of the apparatus, all of these options falling with the scope of the claim.

The board therefore considers that the subject-matter of claim 1 of the auxiliary request 1 does not satisfy the requirement of Article 56 EPC 1973.

5. *Auxiliary request 2*

The board notes that the claimed invention relies on the two computers embodying a shared model of the hierarchy of the apparatus being represented. That the internal representation of this model may differ is merely a statement that this representation does not matter, a statement which is superfluous to the skilled person. The present claim merely specifies that the representations are different whereas the skilled person would have realised for the previous requests that they may be different.

The board therefore considers that the subject-matter of claim 1 of the auxiliary request 2 does not satisfy the requirement of Article 56 EPC 1973.

6. *Auxiliary request 3*

The board notes, as was done in the appealed decision (section 14.3) that the features added to claim 1 which concern the translation of terms for types or objects from a first to a second natural language are well known in the art (see for example D3), being commonly designated as "internationalisation" or "localisation". There is again no synergy between these features and the other distinguishing features. Therefore, these features do not contribute to the presence of an inventive step.

The board therefore considers that the subject-matter of claim 1 of the auxiliary request 3 does not satisfy the requirement of Article 56 EPC 1973.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

B. Atienza Vivancos D. H. Rees