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Datasheet for the decision
of 24 November 2011

Case Number:	T 1421/08 - 3.5.06
Application Number:	04740034.6
Publication Number:	1634167
IPC:	G06F 9/44
Language of the proceedings:	EN

Title of invention:
System and method for object navigation grammar completion

Applicant:
SAP AG

Headword:
Regeneration of runtime objects/SAP

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

Keyword:
"Technical effect of added feature - yes"
"Inventive step over cited prior art - yes"
"Remittal for further prosecution - yes"

Decisions cited:
T 0641/00, G 0003/08

Catchword:
See reasons 5-5.7

Case Number: T 1421/08 - 3.5.06

D E C I S I O N
of the Technical Board of Appeal 3.5.06
of 24 November 2011

Appellant: SAP AG
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Decision under appeal: **Decision of the Examining Division of the
                                      European Patent Office posted 10 March 2008
                                      refusing European patent application
                                      No. 04740034.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: D. H. Rees
Members: M. Müller
                         M.-B. Tardo-Dino

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Summary of Facts and Submissions

I.   The appeal lies against the decision of the examining division, announced in oral proceedings of 4 December 2007 and dispatched with letter of 10 March 2008, to refuse the European patent application no. 04740034.

II.   The decision came to the conclusion that the independent claims of the then pending requests lacked an inventive step, Article 56 EPC 1973, over the documents

      D1: EP 1 001 336 A2
      D2: EP 1 235 144 A2

      and the Unix utility "cat" as part of the common knowledge in the art. Two further requests were not admitted pursuant to Rule 86(3) EPC 1973.

III. A notice of appeal was filed on 8 April 2008 and the appeal fee was paid on the same day. A statement of grounds of appeal was filed on 25 June 2008. In both the notice of appeal and the statement of grounds the appealed decision is said to be the decision of the examining division dated 18 February 2008.

IV.   With summons to oral proceedings the board informed the appellant that the board intended to interpret the appeal as referring to the refusal decision dated 10 March 2008. The board also indicated that it took the appellant's requests to be that the decision under appeal be set aside and that a patent be granted on the basis of claims 1-16 according to a main request or a first auxiliary request as filed with the statement of

grounds of appeal, in combination with the following
application documents:

description, pages
3-31   as originally filed
1, 2a, 32   as filed by fax on 5 December 2006
2   as filed by fax on 5 November 2007
drawings, sheets
1/23-23/23 as originally filed

V.   Claim 1 according to the main request reads as follows:

"An apparatus for regenerating runtime objects, the
apparatus comprising:
   a processor (210); and
   a memory (240), coupled to the processor, storing
instructions adapted to be executed by the processor to:
      retrieve (100) object model data (1500) defining
framework-specific relationships between object types
of a computer application framework;
      access (110) a generic object navigation grammar
file;
      incorporate (120) the object model data into the
generic object navigation grammar file to produce a
framework specific object navigation grammar file;
      provide the framework specific object navigation
grammar file to a parser generator arranged to generate
a rule parser (1510);
      parse (1610) one or more invalidation rules by
utilizing the generated rule parser (1510) to check the
one or more invalidation rules for syntactic
correctness, the or each invalidation rule identifying
relationships between development objects and runtime
objects;

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generate a respective rule object for the or each
syntactically correct invalidation rule;

execute the or each rule object to invalidate one
or more run time [sic] objects which are to be
regenerated in response to changes made to one or more
development objects; and

regenerate the invalidated run time objects."

Claim 9 according to the main request relates to a
computer-implemented method comprising steps which
correspond closely to the instructions stored in the
memory according to claim 1.

In the light of the board's decision the wording of the
auxiliary request is irrelevant.

VI.   In substance the board expressed its preliminary opin-
ion that the invention according to the amended claims
of the main request would not be obvious over the prior
art to hand so that the decision would have to be set
aside. It also raised a clarity objection against the
independent claims of the main request and indicated
its provisional intention to remit the application to
the examining division for further prosecution.

VII. With letter dated 27 September 2011 the appellant
agreed to remittal of the application for further
prosecution on the basis of the main request without
holding oral proceedings. Consequently, the oral
proceedings before the board were cancelled.

Reasons for the Decision

1.   Rule 99(1)(b) EPC provides that the notice of appeal
        shall contain an indication of the decision impugned.
        The notice of appeal and the grounds of appeal state
        that the appeal is "against the decision of the
        examining division dated 18th February 2008, in which
        the above patent application was refused" although the
        real date of that decision is 10 March 2008. Since
        however the appealed decision is identifiable
        unambiguously and without difficulty this clerical
        error has no consequence upon the admissibility of the
        appeal under Rule 99(1)(b) and 101(1) EPC. Further in
        view of the facts summarised under points I and III
        above the board concludes that the appeal is admissible
        as complying with Articles 106-108 and Rule 99 EPC.

The Invention

2.   The invention relates to the development of object-
        oriented software during which "runtime objects" are
        generated from "development objects". When a particular
        development object is modified certain runtime objects
        may have to be re-generated while others will not be
        affected. Which runtime objects are affected is deter-
        mined according to so-called invalidation rules. It is
        a concern of the application that only the invalidated
        runtime objects are regenerated rather than all of them
        (cf. p. 11, par. 4; p. 12, par. 3; p. 27, last par. -
        p. 30, 2nd par.).

Claim construction and Article 84 EPC 1973

3.   The present claims use terminology which is, in the
        board's view, not generally established in the art.
        This includes in particular the terms "invalidation
        rules", "object navigation grammar", and "computer
        application framework" with "framework specific
        relationships between object types".

3.1   The term *"invalidation rule"* alone does not define what
        is to be invalidated or how, nor does the requirement
        that the invalidation rules "identif[y] relationships
        between development objects and runtime objects". Simi-
        larly, the term *"object navigation grammar"* on its own
        does not define form or function of the grammar. Also
        the fact that the "object navigation grammar" defines
        the syntax of the invalidation rules is insufficient in
        this regard. However, the last five lines of claim 1 of
        the main request as reproduced above and the correspon-
        ding part of claim 9 - specifying the regeneration of
        runtime objects which are invalidated by the rule
        objects and thus according to the invalidation rules -
        clarify to the board's satisfaction the function of the
        invalidation rules and, indirectly, of the object
        navigation grammar within the context of the claimed
        invention.

3.2   Independent claims 1 and 9 of the main request refer to
        "object types" and their "relationships" without
        further defining either notion explicitly. The claims
        also leave unclear how the "relationship between object
        types" relates to "relationships between development
        objects and runtime objects" identified by the invali-
        dation rules. In the board's view the claims do not

overcome this deficiency by defining that the "object model data defining framework-specific relationships between object types of a computer application framework" are "incorporated ... into the generic object navigation grammar" and then used to parse "invalidation rules identifying relationships between development objects and runtime objects" as defined by the invalidation rules (see *e. g.* claim 1 of the main request as reproduced above, lines 6-8 and 20-22). For these reasons, the board considers claims 1 and 9 of the main request to be unclear, Article 84 EPC 1973.

Technical character and technical contribution

4.   According to established jurisprudence of the boards of appeal the claims - directed towards apparatus and computer-implemented methods, respectively - define inventions within the meaning of Article 52 EPC (see G 3/08, OJ 2011, 10; in particular reasons 10.7). This is not under dispute.

5.   The central point at stake however is which technical effects can be attributed to the claimed matter and which technical contribution the claimed matter makes over the prior art.

5.1   The primary purpose of the claims according to the main request, witness the preamble and the last feature of both independent claims, is the regeneration of runtime objects in response to changes made to development objects. This is part of what is conventionally called the "build process" of a software application.

5.2   The feature claiming regeneration of runtime objects
        determines the nature of the claimed invention and is,
        therefore, central for the assessment of patentability.
        The board notes that this feature was not contained in
        the claims subject to the appealed decision but added
        to the claims filed with the grounds of appeal.

5.3   Determining which runtime objects need to be regenera-
        ted in an individual case in view of regenerating only
        those rather than all of them contributes to limiting
        the resources needed for a particular build. The board
        considers this as a technical effect. Therefore,
        according to established jurisprudence of the boards of
        appeal, the features contributing to this effect must
        be taken into account for the assessment of inventive
        step (see T 641/00, OJ EPO 2003, 352, Headnote 1).

5.4   According to the claims, the grammar relates to how the
        syntax of invalidation rules is defined, the parser ge-
        nerator to how the syntactic correctness of the invali-
        dation rules so defined is verified, and the object
        rules to how the syntactically correct invalidation
        rules are used so as to identify invalidated runtime
        objects. These features do not have an immediate impact
        on the increased efficiency of the build process if and
        insofar as the invalidation rules and the runtime
        objects to be regenerated remain unchanged.

5.5   Further, the board cannot agree with the appellant that
        "*the way* in which the invalidation rules are parsed" or
        "in which the parser is generated" must "take into
        account the nature of the relationships between the
        development and runtime objects", or "the nature" or
        "the purpose of the invalidation rules" (grounds of

appeal, points 18 and 19 and 38). According to conventional understanding in the art, the parsing does not depend on the *nature* of these relationships but only on the way they are *represented* within the grammar, for instance in that the form of a grammar has an impact on whether it can be processed by a particular kind of parser or within specific time or space constraints.

5.6   However the board considers that the utilisation of a grammar, a parser generator and rule objects enables the software developer to exercise control over the build process and over the extent to and the ease with which the relevant effect is actually achieved.

5.7   The board is of the opinion that within a claimed invention having a primary technical effect, features enabling and supporting control of that effect will typically have technical character as well. In consequence, the board concludes that the fact that a grammar, a parser generator and rule objects are used within the context of regenerating runtime objects contributes to the technical character of independent claims of 1 and 9 of the main request and therefore may also contribute to inventive step.

The Prior Art

6.   D1 discloses a system which processes different types of information (see *e.g.* pars. 7, 16, 18, 28) so as to generate "documentation or code objects" such as "programming code", a "WWW page" or "input/output interfaces" (par. 44). The generated "objects" may contain source code (see par. 7, line 4) and thus constitute "development objects" as claimed rather than "runtime

objects". D1 does not deal with the process of genera-
ting runtime objects from development objects (esp. not
compiling or linking), let alone the question of
whether runtime objects may have been invalidated and
must be regenerated. D1 thus does not relate to the
software build process as a whole or its efficiency or
effectiveness.

7.   D2 is concerned with the automatic recognition of user-
interface objects, identifiers or descriptors in an
application executing on a web browser. This recogni-
tion is achieved by parsing the application's underly-
ing HTML (or other markup-language) stream or document
object model according to an "application-specific
grammar" (cf. par. 10, claim 1). The parser may be
generated automatically from a pertinent grammar using
commonly available tools such as "yacc" (see par. 35).
Also D2 does not relate to the software build process
as a whole. Indeed D2 was cited in the impugned
decision only to establish that yacc was well-known in
the art (cf. refusal, point 2.2) which is not disputed
by the appellant (cf. grounds of appeal, point 28).

8.   The board therefore concludes that on the basis of the
prior art discussed during the procedure so far an
inventive step in the sense of Article 56 EPC 1973 has
to be acknowledged.

9.   In consequence, the decision has to be set aside.

9.1   However the board cannot ignore that build tools were
known in the art well before the priority date of the
present application. Two particularly prominent
examples are "make" - which belongs to a standard set

of build tools used under Unix - and the GNU autotools
suite, but other build tools exist as well.

9.2   The board notes that none of the prior art cited in the
        search report or during the examination procedure
        relates to such build tools.

9.3   The board also notes that neither the original claims
        nor any of the claims discussed during examination were
        directed towards "regenerating runtime objects" as are
        the present claims. Instead, all earlier claims - and,
        in fact, the summary of the invention according to the
        application as originally filed - were directed towards
        "completing a framework-specific object navigation
        grammar" and "parsing ... invalidation rules using
        [this] grammar".

9.4   The board has no doubts that the amended claims - and
        in particular the limitation to the regeneration of
        invalidated runtime objects - are disclosed in the
        application as originally filed (see references under
        point 2 above) but cannot exclude the possibility that
        they were not anticipated by the search examiner and,
        hence, not searched.

9.5   Therefore, the board exercises its discretion under
        Article 111(1) EPC so as to remit the application to
        the examining division for further prosecution of the
        main request. During further prosecution, the examining
        division should bear in mind the clarity problem
        mentioned in point 3.2 above and, in particular, assess
        whether the search performed can be considered complete
        for the present set of claims or whether an additional
        search has to be performed.

Order

For these reasons it is decided that:

1.   The decision under appeal is set aside.

2.   The application is remitted to the examining division for
      further prosecution on the basis of the main request.

The Registrar: The Chairman:

B. Atienza Vivancos   D. H. Rees