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Datasheet for the decision
of 13 April 2021

Case Number:	T 0831/16 - 3.4.03
Application Number:	07843693.8
Publication Number:	2080106
IPC:	G06Q10/00, G06F15/16, G06F15/173
Language of the proceedings:	EN

Title of invention:
HIERARCHICAL FEDERATION METADATA

Applicant:
Microsoft Technology Licensing, LLC

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (yes)

Decisions cited:

Catchword:

Case Number: **T 0831/16 - 3.4.03**

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 13 April 2021

Appellant: (Applicant)	Microsoft Technology Licensing, LLC One Microsoft Way Redmond, WA 98052 (US)
Representative:	Grünecker Patent- und Rechtsanwälte PartG mbB Leopoldstraße 4 80802 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 21 October 2015 refusing European patent application No. 07843693.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Eliasson
Members:	A. Böhm-Pélissier
	G. Decker

Summary of Facts and Submissions

I.   The appeal is against the decision of the Examining
        Division to refuse European patent application
        No. 07 843 693 on the basis of lack of inventive step
        (Article 56 EPC 1973). The refusal was a decision
        according to the state of the file, referring to a
        previous communication of the Examining Division.

II.   **Reference** is made to the following documents:

        D1 =   ROANTREE M ET AL: "A three-layer model for
               schema management in federated databases",
               SYSTEM SCIENCES, 1997, PROCEEDINGS OF THE
               THIRTIETH HWAII INTERNATIONAL CONFERENCE ON
               WAILEA, HI, USA 7-10 JAN. 1997, LOS ALAMITOS,
               CA, USA, IEEE COMPUT. SOC, US, vol. 1,
               7 January 1997, pages 44-53, XP010272030,
               DOI: 10.1109/HICSS.1997.667176;
               ISBN: 978-0-8186-7743-4
        D2 =   CAI W ET AL: "Hierarchical federations: an
               architecture for information hiding",
               PROCEEDINGS 15TH WORKSHOP ON PARALLEL AND
               DISTRIBUTED SIMULATION. PADS 2001.
               LAKE ARROWHEAD, CA, MAY 15 - 18, 2001;
               LOS ALAMITOS, CA: IEEE COMP. SOC, US,
               15 May 2001, pages 67-74, XP010543391,
               DOI: 10.1109/PADS.2001.924622,
               ISBN: 978-0-7695-1104-7

III.   The Appellant (Applicant) requests that the decision
        under appeal be set aside and that a patent be granted
        on the basis of the following documents:

Description: Pages 1, 2, 2a, 3 to 8, filed with the
letter of 12 November 2020;
Claims: Nos. 1 to 10, filed with the letter of
28 October 2020;
Drawings: Sheets 1/2 and 2/2 as originally filed.

IV.   **Claim 1** reads (Board's labelling (A) to (I)):
(A) A data structure stored on a computer readable
medium (108) and arranged for a networked computing
environment comprising federations,
(B) wherein a federation comprises two or more
organizations coupled in a fashion such that
authentication and authorization statements span the
organizations in accordance with a pre-defined policy,
(C) the data structure (108) comprising fields
including at least one or more grouping of metadata
about a first federation or about an organization (104,
106, 110, 112) within the first federation, wherein
    (D) the metadata comprises information about the
    organization and structure of the first federation
    or the organization within the first federation,
(E) the data structure (108) further comprising a
reference to explicitly defined metadata in a block of
federation metadata in a different data structure (102,
114), wherein
    (F) at least one of the one or more groupings of
    metadata about the first federation or about an
    organization within the first federation is
    included in the data structure by the reference to
    the explicitly defined metadata in the block of
    federation metadata in the different data structure
    (102, 114), and
    (G) the block of federation metadata being used for
    storing metadata including explicitly defined
    information about the organization and structure of
    at least one other federation or organization;

(H) the data structure (108) further comprising
inherited federation metadata for the first federation,
wherein

(I) the inherited federation metadata for the first
federation is included in the data structure by
virtue of the first federation being hierarchically
below a second federation to which the inherited
federation metadata also applies such that the
inherited federation metadata is inherited from the
second federation by the first federation.

V.   **Claim 9** reads (Board's labelling corresponding to the
labelling of claim 1):
(A') A method for obtaining metadata in a networked
computing environment comprising federations,
(B') wherein a federation comprises two or more
organizations coupled in a fashion such that
authentication and authorization statements span the
organizations in accordance with a pre-defined policy,
the method comprising:
(E1') referencing federation metadata for a first
federation in a data structure,
(C') the data structure comprising one or more fields
including at least one or more grouping of metadata
about a first federation or about an organization
within the first federation,
(E2') the data structure further comprising a reference
to explicitly defined metadata in a block of federation
metadata in a different data structure (102, 114),

(D') wherein the metadata comprises information
about the organization and structure of the first
federation or the organization within the first
federation,

(F') wherein at least one of the one or more
groupings of metadata about the first federation or
about an organization within the first federation

is included in the data structure by the reference
to the explicitly defined metadata in the block of
federation metadata in the different data structure
(102, 108),
(G') the block of federation metadata being used
for storing metadata including explicitly defined
information about the organization and structure of
at least one other federation or organization at a
location specified by a pointer; and
(H') applying the federation metadata to the first
federation;
wherein the federation metadata further comprises
inherited federation metadata for the first federation,
(I') wherein the inherited federation metadata for the
first federation is included by virtue of the first
federation being hierarchically below a second
federation to which the inherited federation metadata
also applies such that the inherited federation
metadata is inherited from the second federation by the
first federation.

VI.   The Examining Division argued that the subject-matter
        of the independent claims lacked an inventive step in
        view of a combination of documents D1 and D2 and common
        general knowledge. The reasoning can be summarised as
        follows:
        (a) The reference to explicitly defined metadata in a
            block of federation metadata in a different data
            structure was obvious in view of the teachings of
            document D2, particularly the federation gateway or
            federation proxy discussed under section 2 on
            page 68 of document D2.
        (b) In particular, D2 disclosed and taught Feature (F)
            on page 68, point 2.
        (c) With regard to the inherited metadata as defined in
            the independent claims that was inherited by virtue

of a hierarchy between the federations, this
feature was considered as one of several alleged
straightforward possibilities in the field of
metadata structuring.

VII.   The arguments of the Appellant can be summarised as
follows:

(a) D2 disclosed an architecture in which a federation
gateway is placed between two federations in order
to make information for one federation available to
another federation. The claimed invention and
particularly the reference included in the
federation metadata data object to another metadata
avoided the need for such a gateway or proxy as it
is required in the system of D2.

(b) The "gateway federation" principle in D2 was
conceptually different to the claimed invention,
because data of one federation was not available at
all to the other federations. This was the reason
why a gateway is at all required. The gateway
translated or hid the data between the different
federations.

(c) Features (F), (H) and (I) could not be regarded as
common knowledge of a person skilled in the art
without any prior art document disclosing or
suggesting such features.

(d) In contrast to D2, in the present claims the
metadata from another federation was included by
reference in the first federation. The referenced
metadata was therefore included in the data
structure concerning the first federation and was
available through the explicit reference to
metadata defined in a different data structure.
Therefore, the metadata defined in the different
data structure was readily available for the first

federation. No gateway or proxy at all was needed
when using the present invention.

Reasons for the Decision

1. **<u>The invention as claimed</u>**

1.1   Communication within a computer system and between
        computer systems is defined by communication policies.
        These policies are included in the software code of
        communication modules.

1.2   Federations may be established between different groups
        of computer systems. A federation generally includes
        two or more organizations connected in a fashion such
        that authentication and authorization statements span
        the organizations in accordance with a pre-defined
        policy.

1.3   In addition to the policy, federation members generally
        need to understand additional information, such as
        structure or organization information. Such information
        is stored in metadata databases.

1.4   The invention proposes that metadata about a federation
        or about an organization within the federation is not
        stored within the federation, but is available to the
        federation by means of reference to metadata in a
        metadata block in a different federation data structure
        having a different hierarchical level.

2. **<u>Article 123(2) EPC and Article 84 EPC 1973</u>**

2.1   Feature (D) corresponds to original claims 3 and 4,
        Features (H) and (I) to original claim 2. Feature (E)

is based on the original description, page 4,
lines 11-15 and original claim 8.

2.2   Corresponding amendments have been effected in relation
        to independent method claim 9 (see section V above).

2.3   The amendments are compliant with the requirements of
        Article 123(2) EPC.

2.4   The preambles of claims 1 and 9 have been reformulated
        in order to overcome clarity objections. Claim 1 now
        relates to a data structure and claim 9 now relates to
        a method for obtaining metadata. The claims now comply
        with the requirements of Article 84 EPC 1973.

3.   **Inventive Step - Article 56 EPC 1973**

3.1   **Closest Prior Art**

        Document D1 is chosen as closest prior art, because it
        discloses a federation system as described in Features
        (A) to (C) for a database structure. Document D2 is a
        less promising starting point for the problem and
        solution approach, because it relates to federations of
        simulation modules.

3.2   **Difference**

        D1 discloses Features (A) to (C) in Figs. 1 and 2
        together with the corresponding description. The
        Examining Division concluded in the impugned decision
        that D1 does not disclose Features (D) to (I). The
        Board agrees with this assessment.

3.3   Effect

The effect may be seen in making system communication more effective and flexible by enabling metadata from one federation being available to the other ones.

3.4   Problem

The problem therefore may be defined as making system communication more effective and flexible.

3.5   Non-Obviousness

3.5.1   The Board is of the opinion that Features (D) to (I) are not taught by D2. D2 has a different context and in particular does not disclose that a data structure comprises fields with metadata of information about the organization (Features (C) and (D)) and that the structure of a first federation additionally comprises a reference to explicitly defined metadata in a different data structure that is included into the data structure by this reference (Features (E) and (F)).

3.5.2   D2 relates to simulation federations and has the objective to develop a hierarchical federation architecture that supports hiding secure information (last paragraph on page 67). The information hiding is opposite to the objective of the present invention to include references in one federation to another federation. The method of D2 is *inter alia* applied to battlefield simulations and semiconductor supply-chain simulation. D1 however relates to federations of a computer system. Already in view of the different understanding of "federation" the skilled person would *a priori* not consider combining the teachings of D1 and D2.

3.5.3   Additionally, the "Federation Gateway" and "Proxy
        Federate" in D2 have a different purpose and motivation
        than Features (F) to (I) in the present invention. D2
        discloses on page 69, left hand column, second
        paragraph, a "Proxy Federate", which belongs to
        multiple federations and has the function of a kind of
        data bus. Thereby it provides connectivity between the
        federations without integrating a reference from one
        federation to another.

3.5.4   The "Proxy Federate" needs as communication interface
        separate "RTI Ambassadors" for each federation joined.
        The system of Ambassadors and "Proxy Federate" is only
        able to perform data transformation and data
        communication. The "Proxy Federate" belongs to multiple
        federations and therefore cannot be completely trusted
        by either federation ("*it may also create a security
        loophole*", end of second paragraph on page 69). For
        this reason, the gateway and proxy functionality of D2
        ensures that data from one federation is expressly not
        included in another federation, but all data has to be
        accessed through an additional gateway that can hide
        data that the respectively other federation must not
        access. This teaches away from referencing from one
        federation to another federation.

3.5.5   Furthermore, D2 does not disclose or teach that
        metadata is exchanged by reference between two
        different federations at different hierarchical levels
        (Feature (I)).

3.5.6   The Board therefore agrees with the arguments of the
        Appellant in that D2 suggests a different and opposite
        way to make the data usable between different
        federations, which is the intermediate gateway
        federation that translates and proxies the data.

3.5.7   Claim 9 relates to a method corresponding to claim 1,
        but formulated as method steps. Features (A') to (I')
        correspond to Features (A) to (I) of claim 1 (see
        section V above). Therefore, the reasoning for claim 1
        also applies *mutatis mutandis* to claim 9.

4.   Conclusion

        For the above reasons the Board is of the opinion that
        the application and the invention to which it relates,
        in the version according to the appellant's request,
        meet the requirements of the EPC. Hence, a patent is to
        be granted on the basis of that request (Articles 97(1)
        EPC and 111(1) EPC 1973).

Order

For these reasons it is decided that:

1.   The decision under appeal is set aside.

2.   The case is remitted to the Examining Division with the
        order to grant a patent in the following version:
        Description: Pages 1, 2, 2a, 3 to 8, filed with the
        letter of 12 November 2020;
        Claims: Nos. 1 to 10, filed with the letter of
        28 October 2020;
        Drawings: Sheets 1/2 and 2/2 as published.

The Registrar: The Chairman:

S. Sánchez Chiquero   G. Eliasson

Decision electronically authenticated