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(54) **ASYNCHRONOUS MESSAGING USING A
NODE SPECIALIZATION ARCHITECTURE
IN THE DYNAMIC ROUTING NETWORK**

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Related U.S. Application Data

(63) Continuation of application No. 10/105,018, filed on
Mar. 21, 2002, now Pat. No. 7,051,070, which is a
continuation-in-part of application No. 10/017,182,
filed on Dec. 14, 2001, now Pat. No. 7,043,525.

(60) Provisional application No. 60/278,303, filed on Mar.
21, 2001, provisional application No. 60/280,627,
filed on Mar. 29, 2001, provisional application No.
60/279,608, filed on Mar. 28, 2001, provisional
application No. 60/276,847, filed on Mar. 16, 2001,
provisional application No. 60/256,613, filed on Dec.
18, 2000.

(51) **Int. Cl.**
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G06F 15/16 (2006.01)
H04L 45/302 (2022.01)
H04L 67/55 (2022.01)

H04L 67/63 (2022.01)
H04L 67/1001 (2022.01)
H04L 67/1008 (2022.01)
H04L 67/1014 (2022.01)
H04L 67/1029 (2022.01)

(52) **U.S. Cl.**
CPC **H04L 67/55** (2022.05); **H04L 45/306**
(2013.01); **H04L 67/63** (2022.05); **H04L**
67/1001 (2022.05); **H04L 67/1008** (2013.01);
H04L 67/1014 (2013.01); **H04L 67/1029**
(2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

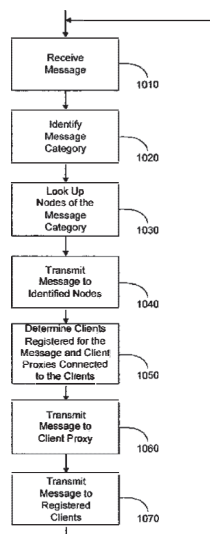
(56) **References Cited**

To view the complete listing of prior art documents cited
during the proceeding for Reexamination Control Number
90/019,662, please refer to the USPTO's Patent Electronic
System.

Primary Examiner — Woo H Choi

(57) **ABSTRACT**

A network routes update messages containing updates to
properties of live objects from input sources to clients
having the objects. When the clients receive live objects, the
clients identify the object IDs associated with the objects
and register the object IDs with the routing network. The
routing network is adapted to selectively send update mes-
sages to nodes in the network and the nodes forward the
messages to the clients. One implementation uses a hierar-
chy of registries to indicate which nodes and clients receive
which update messages. Another implementation assigns
update messages to one or more of N categories and nodes
to one or more of M types, and the gateways maintain
mapping between categories and types. To ensure that
clients receive all of the update messages for which they
register, the clients connect to client proxies that in turn
connect to at least one node of each type.



**EX PARTE
REEXAMINATION CERTIFICATE**

NO AMENDMENTS HAVE BEEN MADE TO
THE PATENT

5

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

The patentability of claims 1, 6-7, 14-17, 20-23, 26-29¹⁰
and 32-35 is confirmed.

Claims 2-5, 8-13, 18-19, 24-25, 30-31 and 36-37 were not
reexamined.

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