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- (71) Applicant (for all designated States except US): MICROSOFT CORPORATION [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).

OTT, Michael J.; c/o Microsoft Corporation, International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). GUPTA, Nishant; c/o Microsoft Corporation, International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US).

- (72) Inventors: TKATCH, Alexander; c/o Microsoft Corporation, International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). ARASH, Ghanaie-sischanie; c/o Microsoft Corporation, International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). JANEDITTAKARN, Akezyt; c/o Microsoft Corporation, International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US).

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[Continued on next page]

(54) Title: SERVICE-ORIENTED PIPELINE BASED ARCHITECTURE

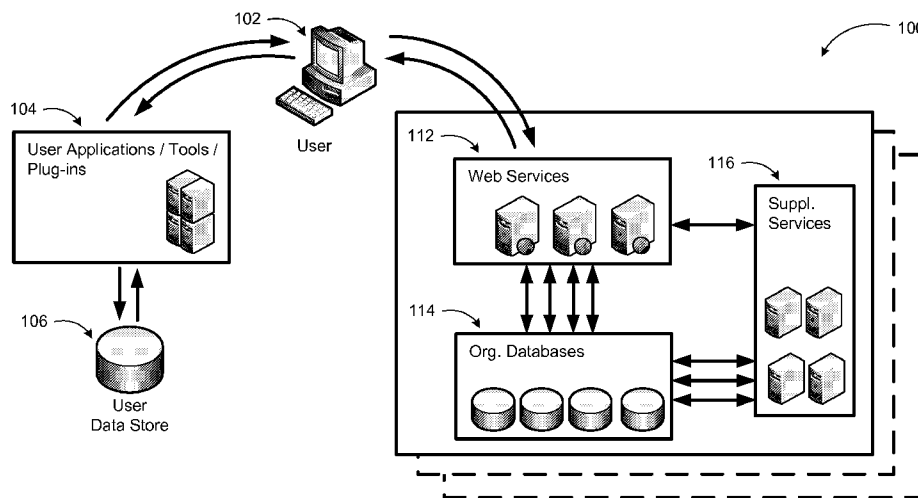


FIG. 1

(57) Abstract: Service-oriented systems employing pipeline architecture to accommodate third party extensions for extending existing functionality or providing additional functionality are provided. User or third party provided plug-ins are registered through metadata and executed in a pipeline along with platform operations. The pipeline is extendable on the fly with newly uploaded plug-ins. Dependency analyses for ordering synchronous or asynchronous pipeline operations enable multiple parties to extend the system and operate predictably. Loop detection mechanisms prevent misuse of system resources through accidental or malicious creation of infinite loops with exceptions for non-degenerate infinite loops.

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**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2008/078107****A. CLASSIFICATION OF SUBJECT MATTER***G06F 15/16(2006.01)i, G06F 17/00(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975  
Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

IEEE xplora, Google, eKIPASS(KIPO internal) &amp; keywords: "execution pipeline, service-oriented pipeline, plug-in, metadata, customer relationship management"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Padraig O'Dowd, et al., "Integrating XML forms-based processes into Service-Oriented Architectures using IBM Workplace Forms Services Platform", IBM, <a href="http://www.ibm.com/developerworks/lotus/library/forms-soa/">http://www.ibm.com/developerworks/lotus/library/forms-soa/</a> , 03 Apr. 2007. See the whole document.	1-20
Y	US 2007-0011437 A1 (CARNAHAN) 11 January 2007 See Abstract, Fig. 1 (including its description), and Claims.	1-20
A	US 2005-0234969 A1 (MAMOU et al.) 20 October 2005 See Abstract, page 21, paragraph [0296] - page 34, paragraph [0387], and Claims.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

09 APRIL 2009 (09.04.2009)

Date of mailing of the international search report

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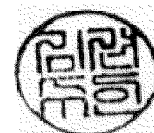
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KIM, KYEOUNSOO

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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