An Efficient Workflow Management Scheme with Explicit Business Rules

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*
**

Abstract

In this paper, we have identified and classified various workflow operational rules. There are many business rules involved in the operation of workflow systems within the enterprise business environments. The rules are defined as ECA (Event-Condition-Action) rules and integrated with workflow systems with the active DB technology. Operational rules are categorized into task dispatching rules, dynamic process adaptation rules, exception handling rules, event-based monitoring rules, and external domain business rules. By adopting rule-based approach, the modification of business rules for process management can be easier. With the explicit management of business rules, the reasoning process of organizations can be formalized and managed transparently, which enables rapid and clear decision-making.

1.

,
(WFMS: Work- flow Management System)

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. ,

(flexibility)
.
(Business rule)
[11].   ,

(operation)

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,

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2.

.

Casati   [6].

. Casati

[7].   [5]
,

.   ECA

.

Reichert

,

[12]. Lee   WFMS

.

, WFMS   (Role- based)

.

[10].

Dellen

[8].   .

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3.

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[1]

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[2]   .

[1]

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4.

(Rule Definer)

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,   .

,   (Role)

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[2]

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ECA . ,

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5.3

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ECA .

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5. ,

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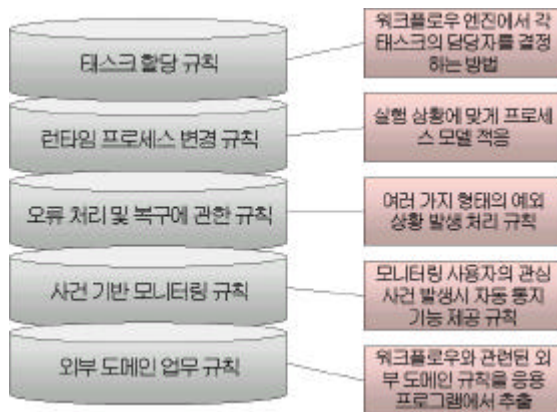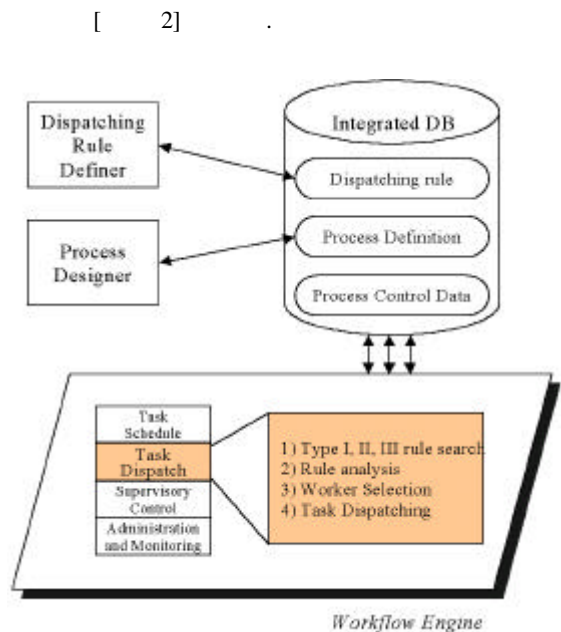
5.1 ECA

. , (Event)

, ,

. , , .

. (Condition) .

DB

ECA .

. (operations) (Action) .

5.2 **5.4**

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ECA .

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6.

, DBMS

. , . DBMS

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- 275 -

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[3]

7.

ECA (Event-Condition-Action)

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,

. ,

(reasoning)

(formalize)   ,

.

, XML   ,

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WFMS   .

[1]   ,
                                                    ,
                                    , 2001.

[2]   ,   ,   ,   ,   ,   ,
1998,
                        , '98   /
                              (CD), 1998. 4. 24. ~
1998. 4. 25.,   .

[3]   ,   ,   , 1997, CORBA
            , '97   , pp. 33-36,
1997   10   31   .

[4]   ,   ,   ,   ,
                                                  ,
CAD/CAM   ,   5   ,   1   , pp.
61-70, 2000   3   .

[5]   ,   DB
                                        ,   ,
                  , 2000.

[6] F. Casati, S. Ceri, B. Pernici, and G.Pozzi,
Deriving Active Rules for Workflow Enactment,
Proceedings of 7th International Conference on
Database and Expert Systems Applications, pp.
94-115, Zûrich, Switzerland, 1996.

[7] Fabio Casati, Mariagrazia Funini and Isabelle
Mirbel, An Environment for Designing
Exceptions in Workflows, Information Systems,
Vol. 24, No. 3, pp. 255-273, 1999.

[8] Barbara Dellen, Frank Mauer and Gerhard Pews,
Knowledge-based Techniques to Increase the
Flexibility of Workflow Management, Data &
Knowledge Engineering, Issue 23, pp. 269-295,
1997.

[9] Yeongho Kim, Suk-Ho Kang, Dongsoo Kim,
Joonsoo Bae, and Kyung-Joon Ju, WW-flow: A
Web-based Workflow Management System
Supporting Run-time Encapsulation, IEEE Internet
Computing, Vol. 4, No. 3, pp. 55-64, 2000.

[10] Ha Bin Lee, Jong Woo Kim and Sung Joo
Park, KWM: Knowledge-based Workflow Model
for Agile Organization, Journal of Intelligent
Information Systems, Issue 13, pp. 261-278,
1999.

[11] Meta Data Coalition, Open Information Model
Version 1.1, Review Draft, August 1999.
Available Online at http://www.mdcinfo.com/OIM/
MDCOIM11.pdf

[12] Manfred Reichert and Peter Dadam, ADEPTflex
supporting dynamic changes of Workflow without
losing control, Journal of Intelligent Information
Systems Issue 10, pp. 93-129, 1998.