An Efficient Workflow Management Scheme with Explicit Business Rules

* ** ** *

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)

.

. ,

(Business rule)

(flexibility)

[11]. ,

Reichert

가

(operation)

가

2.

가

Casati

가 .

가 ŀ [6]. 가

. Casati

[7]. [5]

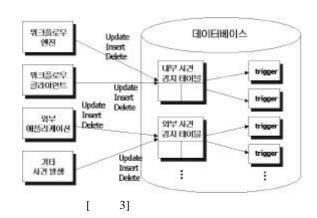
ECA

- 273 -

2001 4 27 - 28 WFMS [12]. Lee 가 , WFMS (Role-based) 가 [10]. Dellen 가 [8]. 3. [1] 가 워크플로우 엔진에서 각 태스크의 담당자를 결정 하는 방법 테스크 할당 규칙 2] [실행 상황에 맞게 프로세 스 모델 적음 런타임 프로세스 변경 규칙 Dispatching Integrated DB 여러 가지 형태의 예외 상황 발생 처리 규칙 오류 처리 및 복구에 관한 규칙 Definer Dispatching rule 모니터링 사용자의 관심 사건 발생시 자동 통지 기능 제공 규칙 사건 기반 모니터링 규칙 Process Definition Process Designer 워크플로우와 관련된 외 부도메인 규칙을 응용 프로그램에서 추출 외부 도메인 업무 규칙 1] Tusk Schedule Type I, II, III rule search
Rule analysis
Worker Selection Dispatch Supervisory Control 4) Task Dispatching Administration and Monitoring Workflow Engine [2] 4. (Rule Definer) 가 (Role)

2001 가 가 가 ECA 가 가 가 가 가 5.3 가 가 가 가 가 ECA 가 가 가 5. 가 ECA 5.1 (Event) (Condition) 가 DB ECA (Action) (operations) 5.4 5.2 가 가 가 ECA 6. DBMS 가 DBMS 가 가 [3] 가 가

/ 2001 4 27 - 28 가



7.

ECA (Event-Condition-Action)

, 가 , , 가

,

. , (reasoning) (formalize) 가 가

. XML

WFMS

[1] ,

, 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.